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INTEGRATION OF CRITICAL THINKING PRINCIPLES INTO THE CURRICULUM OF SECONDARY SCHOOLS: LITHUANIA'S CASE

Research report

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Content

I. Introduction

One of the most topical issues in science today – the emergence of information society, where basic resources for development of economic, technological, social and others areas becoming less tangible capital, labor and natural resources, but knowledge – intellectual capital. Most of authors talk about information as a fundamental feature of modern society and note that we entering the information age, the time of global information economy where information of new kind is dominate. Scientists and researchers (Ališauskas, 2005; Liniauskaitė, 2005; Fokienė, 2006; Fullan, 1998; Želvys, 1999 and others) notes the importance of change in today's life. In rapidly changing world society required creative people who are able to adapt to the intense change. In modern society, particularly is valued the active and creative person, capable to operate with variable situation, effectively and wisely manage the information (Kirvelis, 2007; Glosienė, 2000).

General education standards of Lithuania emphasize importance of critical thinking and problem–solving ability. Educational experience encourages searching for such training methods that help the pupil to feel meaning of learning. General programs of Lithuanian general education school emphasize student activities, all of its forms, teacher and student cooperation; it is stressed that today's school must choose and develop education methods promoting an active, independent, constructive critical attitude of students. Therefore the main task of today's teachers – as to better prepare pupils to live in the democratic world of the twenty–first century, to teach them to learn and think critically.
Perception of information for critical thinking person is more the beginning than the end of learning.

To think critically means to accept ideas and seek for their meaning, to look at them a little bit skeptical, compare with opposite views, to create credible systems to justify them and build on these structures. This is a complex process, the creative using of ideas and resources, rethinking and reshaping of concepts and information. This process requires active communication and appears at various educational levels. Critical thinking usually has purposeful goal, but it may also be a creative process where aspirations are not so clear. If a teacher has a goal to teach students to think critically, it is necessary to train this ability systematically during the whole training practice.

Development of critical thinking at school of general education is a very important process, which is not sufficiently studied yet. It should be noted that assumptions and opportunities of critical thinking education in modern Lithuanian school are not properly investigated; effectiveness and possibilities of critical thinking methods are undisclosed.

During this initiative the research was performed, which object were principles of critical thinking education in Lithuania.

II. Goals and objectives

The goal of the research was to analyze the expression of the principles of critical thinking education in the documents governing education and to explore assumptions for appliance of methods promoting critical thinking and the process of education.

Objectives:

1. To induct educational politicians' approach to critical thinking dimensions, significant for organization of teaching process.
2. To highlight assumptions for critical thinking development in documents governing education.
3. To verify empirically expression of appliance of methods for critical thinking teaching at RWCT basic schools.
4. To compare attitudes of teachers and students' to appliance of methods for critical thinking development at the process of education.

III. Methodology of the research

There was applied methodology of synergy of quantitative and qualitative research methods.

1. Document analysis – expression of concepts and assumptions of critical thinking at the documents governing the education.

2. Questioning. At this stage of the survey we were seeking to verify empirically assumptions and possibilities of critical thinking development during the process of education in order to implement renewed general programmes of education. Teachers of 10–12 grades and 10–12 grades students filled in questionnaires. The data obtained helped determine whether teachers in their work make it possible for students to develop critical thinking. Students' survey

showed their approach to critical thinking development during teaching/learning process and their needs for teaching and learning process organization.

3. Comparative analysis of research data. Teachers' and students' approach was compared to presumptions of critical thinking development in the process of education.

4. Statistical analysis of research data. Statistical data was processed using SPSS program.
The results of these initiative created strong assumptions to review the strategy of implementation of critical thinking education program in Lithuania ensuring its successful future development.

IV. Target group and area

Education politicians (specialists of the Ministry of Education and Science of the Republic of Lithuania, forming the curriculum) – 7.
University teachers participated in RWCT project and training the future teachers – 3.
Teachers from schools participated in RWCT project – 100.
Teachers not participated in RWCT project – 100.
Students – 300.

V. Research activities

1. Analysis of documents regulating the education for the aspect of assumptions for critical thinking development.
Document analysis determined the ideas, principles, specific curriculum development and assessment documents of RWCT program to be taken into account in developing strategies for general education programs, standards, or to consider them in the future.

2. Interview of specialists of the Ministry of Education and Science and teachers from institutions of higher education preparing teachers.
This interview helped to find out education professionals' approach to critical thinking education in the current situation, to clarify the assumptions, possibilities, rising challenges and obstacles.

3. Selection of schools participated and not participated in RWCT project.

Schools – volunteers participated in the research in order to check results of learning–teaching process, regardless of participation or non–participation in RWCT program.

4. Questioning of teachers from selected schools.

Survey helped to determine critical thinking program's impact on the educational process and concrete results in RWCT methodical schools and compare it with non–participated schools.

5. Questioning of students from selected schools.

Students – volunteers, who participated and not–participated in RWCT program were approached in order to find out their attitudes to teaching (learning) methods, learning environment, assessment of achievement and learning progress.

VI. Research outcomes

VI.1. Analysis of documents regulating the education for the aspect of assumptions for critical thinking development

Development of critical thinking is considered as very important skill in the modern society, so why its importance is mentioned in main strategic documents and programmes of Lithuania's education. Critical thinking is connected with ability to learn, think independently and solve problems, develop personal powers and initiative. Importance of critical thinking is emphasized in following documents:

- State education strategy 2003–2012;
- General programmes and education standards;
- General programmes for primary and basis education;
- General programmes and education standards for XI–XII grades;
- Preschool education development programme for 2007–2012;
- Recommendations for primary education general programmes adaptability for special needs children(language, math, social and nature science education);
- Conception of gymnasiums;
- Basic and secondary education general programmes plans for 2009–2011.

VI.2. Interview of specialists of the Ministry of Education and Science and teachers from institutions of higher education preparing teachers

10 respondents (further – experts) were interviewed: 4 from Ministry of Education & Science, 2 from Education Development centre, 1 from Parliament and 2 from universities. According them value of critical thinking is in:

- capacity to select, analyze and synthesize information;
- capacity to evaluate situation adequately;
- capacity to look for solutions, to make creative and by arguments supported decisions;
- constant self evaluation;
- communication and cooperation.

Experts think, that „old teaching traditions", orientated to „right–wrong" answers are main obstacles for teachers to understand the essence of education and change thinking and teaching practice.

Experts themselves pay attention for critical thinking development in their daily professional work, by teaching others and initiating (or participating in projects and programmes.

Experts think that textbooks and other educational materials are only in part adapted for pupils' skills development. There is lack of authors who are acquainted with modern didactics and are able to use them in material learning–teaching development**.**

Renewed general programmes show only strategic direction, but do not guarantee that expressed attitudes, declared approaches will be implemented in practice. It will depend on teachers' competencies to develop students' capacities. Schools need support for the realization of new programmes.

Modern school provides opportunities for development of critical thinking, but only in part is able to develop it. In spite of teachers knowledge about critical thinking, it is applied not so often due to the various reasons: inertia, lack of confidence, support from school community, etc.

VI.3. Teachers approach to critical thinking development possibilities in the classrooms

230 questioners were sent out, 185 returned back. Respondents were teachers who participated and not participated in RWCT courses since 1997. 61 % of all respondents declared, that they participated, 26 % – that not participated, 13 % – didn't respond.

Respondents were how often they participated in the trainings. One time – 48 respondents, 2 times – 30 respondents, more than 3 times – 9 and 98 respondents didn't answer to this question. 40 % respondents have 21–30 years work experience, 28 % – 11–20 years, 19 % – till 10 years, 13 % more than 31 years. They participated in RWCT courses during periods 1997 – 1999 and 2000–2005.

Teachers were asked how do they prepare for the lessons and plan them. While preparing and planning lessons, teachers evaluate individual needs and possibilities of pupils, classroom environment, but they spend little time for sharing good practices with their colleagues, do not consult often with others about organization of teaching–learning process. Teachers use various sources for information search, but use of informational technologies is still not sufficient.

Another question was about assessment and evaluation of their lessons. Teachers partly value analysis and reflection of their experience as possibility to improve. They do not often use earlier prepared lessons plans and materials.

Research showed that teachers are still main source of information – they talk, demonstrate, show, and explain. Pupils' centred methods (work in small groups, project work, and applied research) are used seldom, as well as teaching–learning activities that encourage problem solving, creative and critical thinking. In order to develop critical thinking skills, pupils have to be encouraged to raise questions and look for well–founded answers during every lesson. Schools are not used to integrate self evaluation and pair or group evaluation into overall evaluation of achievements. Tests or ready made tasks as well as oral evaluation are more common in upper secondary schools.

Teachers were asked, how they think, what value of the school is. Teachers think that schools contribute to the self and global awareness, teach to think, make choices and independent decisions, communicate and get along with people, prepare for the future, higher schools, get interested in books, art and music.

VI.4. The difference between experts and teachers approaches

- Experts think that teachers have to be able to evaluate their work, critically reflect and improve. Teachers not often use possibilities to discuss their work with colleagues, consult and share, use opportunity of pair or group communication to improve their teaching practice.
- Experts think that it is important to use active learning methods, pair or group work in the classrooms. Teachers more often use possibilities to talk themselves, show, demonstrate, and explain.
- Experts claim, that Lithuanian and language teachers have many possibilities to develop critical thinking skills through text analysis and interpretation, which is part of Matura, State exams. Teachers more often use possibilities to develop critical thinking skills during English, Lithuanian langue and math lessons.
- Experts claim that standardized assessment (wrong–right) is obstacle for development of critical thinking. Teachers use seldom reflective evaluation and self – assessment.
- Experts value capacities to cooperate, to communicate, use new technologies.
- Teachers use discussions in the classrooms, but take initiative to organize discussions themselves. They do not use new technologies very often.

VI.5. Pupils approach to critical thinking development possibilities in the classrooms

450 questionnaires were sent out, 419 returned back. Respondents were pupils of upper secondary (or gymnasium) level secondary school, from 9–12 grades. 44 % were from grade 10^{th}, 30 % – from grade 11^{th}, 16 % – from grade 9^{th}, 8 % from grade 12^{th} and 2 didn't identify grade.

According pupils opinion, teachers pay little attention to the use of different informational sources and opportunities to develop critical thinking skills during the lessons. Pupils think that it is enough to use textbook and classroom materials for homework.

Pupils claim, that teachers help seldom to do project work, experiments or other investigation activities. Classroom discussions are present often, but initiated and managed mainly by teachers.

Individual work and work in small groups are organized, teachers demonstrate and illustrate, but teachers talking is still main teaching method in upper secondary schools.

Problems solving, creative and investigation activities are used not so often by teachers. In spite of teachers and pupils' cooperative work in planning lessons, discussions on what and how to teach, pupils do not intend to show initiative, provide suggestions on learning process organization during the lessons.

Circumstances for critical thinking development (encouragement to use different information sources, to discuss and raise questions, solve concrete problems and analyze personal learning) are mostly provided during native and foreign languages, history and geography lessons.

More common evaluation is in written and oral forms. Practical work assessment is rarely used. Teachers evaluation strategies poorly support reflective thinking and provide possibilities for self evaluation and analysis of learning process.

Pupils think that school prepares for higher education and future works, contributes to the self–awareness and world cognition.

VI.6. The difference between teachers and pupils approaches

- Teachers more often indicated, that they demonstrate, illustrate, use experiments, help pupils to do project works other research works, organize work in small groups, and listen to classroom discussions.
- Teachers more often claim, that pupils raise questions, doubt, look for the grounded answers, solve problems, look for the best solutions.
- Pupils more often claim, that teachers talk themselves, dictate, and pupils listen to them.
- Teachers more often indicate, that while evaluating pupils they express grounded, supported by arguments oral opinion during lessons and written after completed work.

VII. Final conclusions

Teachers pay little attention to their work analysis and reflection, sharing good practices with colleagues, cooperation with other teachers while planning teaching–learning process. RWCT courses were more often organized during 1997 – 1999 and 2000–2005 year's periods. Now they are organized seldom.

Teachers use various information sources for planning lessons, but do not use enough new technologies. Pupils are not encouraged enough to use different information sources, they think, that textbooks and classroom materials are the most important.

Native and foreign language, math, history and geography lessons are those, who promote critical thinking development more often and create necessary conditions for it. They discus, analyze, look for different solutions, reflect during those subjects lessons.

Teacher centered teaching–learning methods are more often present in upper secondary grades lessons. Pupils centered methods (work in small groups, project work, research, etc.) are used rarely.

Teachers not often use evaluation of pupils' practical works, their self evaluation, self assessment, pair evaluation. Pupils have little opportunities to analyze their learning progress, discuss and reflect their achievements.

School contributes to the self awareness and world cognition, teaches to think, to make choices, to communicate and to cooperate, and prepares for the future works and universities.

Teachers and pupils opinions differ while evaluating pupils' active involvement I the lessons and evaluation methods forms. Teachers think, that they use quite enough active, pupils centered teaching methods, pupils think, that teachers are active themselves during the lessons.

VIII. Recommendations

For education politics (experts)

1. Declared and reflected critical thinking approaches in educational documents to value, not only theoretically, but practically – through showing good practice examples and so encouraging teachers and school communities to apply critical thinking.

2. To introduce critical thinking attitudes into new education documents.

3. To bring critical thinking into pre–service teacher programmes and initial teacher training standards.

4. To improve teacher's in–service training system – to value teachers competencies according critical thinking development possibilities in the classrooms, school environment.

5. To rethink and improve teaching – learning process organizing system, including final state exams; to combine assessment of final result with learning process assessment.

For teachers

1. To use pupils' knowledge, opinions, skills in daily work, include them into teaching–learning process planning and evaluation.

2. To value and encourage pupils critical thinking by visibly showing them it and created favorable conditions for it.

3. To share critical thinking development experience with other colleagues and wider school community.

4. To reflect constantly critical thinking experience and practice individually and publicly.

5. To contribute to the development of critical thinking culture development in schools.