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RESULTS OF SYSTEMIC TRANSFORMATION IN GEOGRAPHY EDUCATION

Abstract: The objective of this paper is to assess and forecast (scenario) changes in effectiveness of geography teaching, taking place as a result of transformation of education system. Assessment of education system reform is based on analysis of the survey conducted among teachers and results of the tests taken by students in their second year in secondary junior schools in 2000 and 2010. The scenario assumes mainly a decrease of teaching level and education quality. Discrepancies between theoretical assumptions and school practice, both in relation to curricula, grading system, school-system funding, supervision and management in education are the main threats to decreasing effectiveness of teaching.

Key words: results of education reform, effectiveness of geography teaching, survey, didactic measurement, scenario

INTRODUCTION

Reform of Polish Education System was implemented on 1st Sept 1999. Assumptions of the reform were based on six pillars defined by Ministry of National Education (MNE): new school system, external examination system, separation of management and supervision, new status of a teacher, new rules for education funding as well as curricula reform. Implementation of this reform was a serious challenge both for authors and recipients of the changes: first of all it broke the established social order, causing threat. Pace of the changes, their complexity, as well as issue of costs and way of funding aroused a lot of emotion. Due to the fact that many scientists drew attention to necessity for taking up research on monitoring and evaluation of education reform, in 1998 *Instytut Spraw Publicznych* (Institute of Public Affaires) organised a seminar about it. Issues connected with course and results of the education system

transformation were brought up not only on conferences and seminars but mainly in reports and papers of, among others, Gulczyńska and Świrzbowska – Kowalik (2000), Hłuszyk (2002), Pawlak (2004) and Siwek (2007).

The least number of elaborations in the subject of education reform evaluation concerns changes of teaching effectiveness, which consists teaching level and education quality. According to MNE'S concept "Reforma systemu edukacji" ("*Education system reform"*) improvement of education quality means an integral process of education and teaching (p. 10). Education and teaching concepts, such as block schedule teaching, intensification of educational work or development of various skills are implemented in a school practice. However, knowledge about the way in which implementation of these concepts influences teaching level and education quality is missing. Hence, emerged a need for taking up research on theoretical and practical aspects of systemic transformation, especially in the context of changes of teaching effectiveness. Results of such research are significant not only from point of view of the teachers but also of the education reform's authors, since they were of the opinion that education reform had never been an accomplished act. Scientists engaged in school reforms all over the world, among others, Guthire and Koppich (1993), who underline that education reform is a sine qua non condition for improving functioning of a contemporary state, share this view.

For Dziewulak (1994) improvement of education quality is a priority in the process of adapting education to the contemporary labour market. Kupisiewicz, who believes that modern school should strive for elaboration of appropriate level and quality of education, beginning with formation of attitudes, then skills and finally contents (1996), has a similar opinion. However, Banach (1999) points to the fact that education system reform should be, to some extent, created and controlled authoritatively. On the other hand, one cannot forget that rank-and-file stream of reforms, scientists' innovation and teacher's experience (…) is not less important. Szkudlarek (2010) presents vision of a Polish school too. He underlines that there is no thing which would foreshadow changes in education, while a school of the future is likely to be formed by realization of may scenarios – from creation of economic and culture resources redistribution mechanisms, through construction of acceptance for social stratification, to revolution. In his opinion, the future of education will depend on changes taking place in three areas: reconstruction of class system, media, knowledge-based society. One of the first expert's inquiries aiming at creation of strategy for education development was prepared by The "Poland 2000 Plus" Forecast Committee[1] and educators of *Centre for Educational Research and Innovation*

[1] The 'Poland 2000 Plus' Forecast Committee is one of the Task Force Committees of Polish Academy of Sciences, it also performs function of National Committee for World Futures Studies Federation.

CERI OECD (1995). OECD's forecasts in the subject of the schools' future expect six possible scenarios. They have been clustered into three main categories: "Attempting to Maintain the Status Quo", "Re-schooling" and "De-schooling".

RESEARCH MATERIAL AND METHODS

The paper aims at creating a scenario of changes in the field of effectiveness of geography teaching in the light of education system transformation. Thus, accomplishing two research assignments has been proposed. The first one involves didactic measurement and testing level of the most important geographic skills of the students of secondary junior schools as well as comparison of the results. Research population is represented by two groups of students in their second year in secondary junior school from Poznań, studying in the same school, taught by the same teacher. The first group took tests in 2000 (37 students born in 1985), whereas the second one in 2010 (38 students born in 1995). The tasks involved range of teaching contents defined in the curriculum. The second research assignment consists in defining causes of a decline in effectiveness of geography teaching, on the basis of the survey conducted in schools of various types in the area of Poland. Respectively, 51 questionnaires filled in by primary school teachers, 55 by secondary junior school teachers, 45 by secondary senior school teachers have been received. The basic question in the questionnaire concerned results of the education system reform implemented in 1999 and assessment of the level of teaching effectiveness. Teachers, filled in a table divided into 4 parts (strengths, weaknesses and opportunities, threats), with results of the implemented reform, taking into consideration teaching effectiveness. Altogether, 410 answers were obtained, 67 of which pointed to positive results, whereas 174 to negative consequences of the reform. The remaining answers given by the teachers were opportunities – 21 and threats – 148. Taking into account the lack of comprehensive empirical studies in this area, but also length of the paper, only the data concerning teachers of mathematics and environmental subjects, who account for 75% of the whole surveyed population, 40% of which are geography teachers, will be presented.

RESULTS OF SYSTEMIC TRANSFORMATION IN GEOGRAPHY EDUCATION

Research concerning systemic transformation conducted by, among others, Putkiewicz (1999) and Polarczyk (1999) indicates that a great majority of public opinion and teachers accepted a need for reforming education system. Change

of teaching contents, implementation of new teaching quality adapted to requirements of the market economy and equalisation of opportunities are the most important issues. Results of the research conducted in 2000 by *The Programme for International Student Assessment* – PISA confirmed the need for changes in education. Not only did the curricula reform of 1999 take into account acquiring knowledge, but it mainly exposed process of developing skills, which won recognition among 8% of all the surveyed teachers (fig. 1). Positive effects of the reform, according to the respondents, concern also new approach to the teaching contents in curricula and textbooks. Almost 7% of all the respondents pointed to the positive effects of implementing external examination system and professional promotion. In the opinion of 10% of the teachers it led to utilisation of more modern teaching methods, therein activating and multimedia methods, which, according to the surveyed, better activated students during lessons. According to Śliwerski (2001) teachers' interest in additional trainings resulted from, among others, more activating path of professional development and parents' expectations. Threat of redundancy and competition between schools in the field of educational offer became another "motivation" for the teachers.

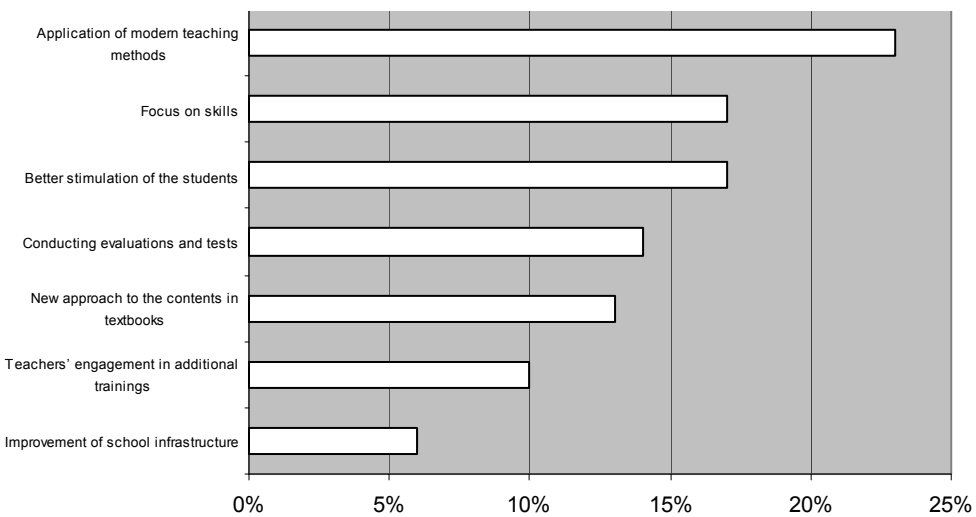

Fig. 1. Positive effects of education reform in teachers' opinion (share of each answer in the cluster of positive effects) – own elaboration

Lack of balance between number of positive and negative effects of the education reform is very alarming. From among all the received answers 42% were classified into the cluster of negative effects, presented in fig. 2. Teachers of mathematics and environmental subjects assessed education reform of 1999

negatively, pointing to creation of three-year-long secondary junior school (students aged 13–15). According to PISA's report (Białecki, Haman 2000) secondary junior school aimed at lengthening education of the teenagers, thus postponing decision about choosing secondary senior school (often vocational), which would be in opposition to the postulate of "equal start for everyone". However, secondary junior school, instead of equalling level of competence in schools located in areas of various level of development, became a place of unhealthy competition between students. Over 13% of all the respondents believe that students of secondary junior schools, instead of concentrating on learning, fight for position with their colleagues, which leads to growth of pathologic behaviour. Almost 11% of the surveyed teachers assessed negatively implementation of economising in education, especially liquidation of smaller schools and creating increasingly bigger classes. Lack of appropriate funding and management in schools, especially in less developed areas, according to the teachers, has resulted in growth of disproportion in the field of education opportunities.

Negative effects of the reform affected directly also teachers. Twelve teachers pointed to obligation of creating successive documents, reports from evaluations conducted by pedagogic supervision. Majority of them talks about superficiality of these actions and documentation itself. Teachers of mathematics and environmental subjects, therein geography teachers, think that time shortage for teaching curricula is the most serious problem. One out of four teachers claims that he/she does not have enough time for revisions and presents contents cursorily. Teachers of such subjects as geography experienced it particularly strongly as number of lessons before the reform in five-year-long cycle amounted to 10, whereas the reform of 1999 introduced only 4 hours in three-year-long cycle. Current number of geography lessons is probably the lowest in the history of Polish education.

Systematic fall of teaching level is another issue. In the open-ended question concerning effects of the implemented education reform, only 11% of the surveyed teachers noticed this problem, whereas in the close-ended question, which required defining weather teaching effectiveness had dropped or grew, respondents approached this problem differently. Results presented in the fig. 3. leave no doubt. Both in secondary junior and senior schools, 67% of the surveyed geography teachers and 62% of mathematics and environmental subjects teachers observe a decline in level and quality of teaching. As little as 20% of the surveyed claim that students' results are constant. The presented view may be considered true due to the fact that mainly experienced teachers, who had been working in schools for over 15 years, which made it possible to compare students' results from before the reform and after its implementation, took part in the survey. Also PISA report (Białecki, Haman, 2000) points to low level of skills.

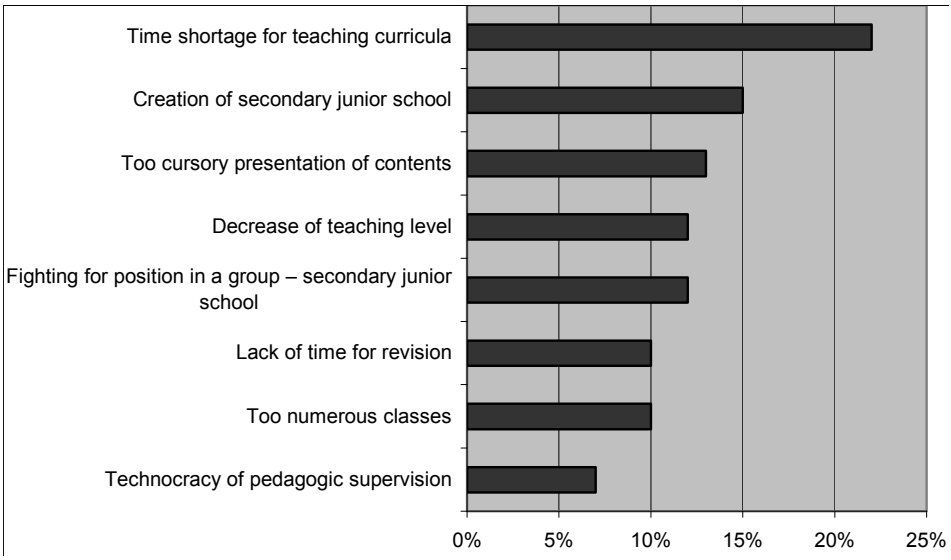

Fig. 2. Negative effects of education reform in teachers' opinion (percentage of each answer in the cluster of negative effects); source: own elaboration

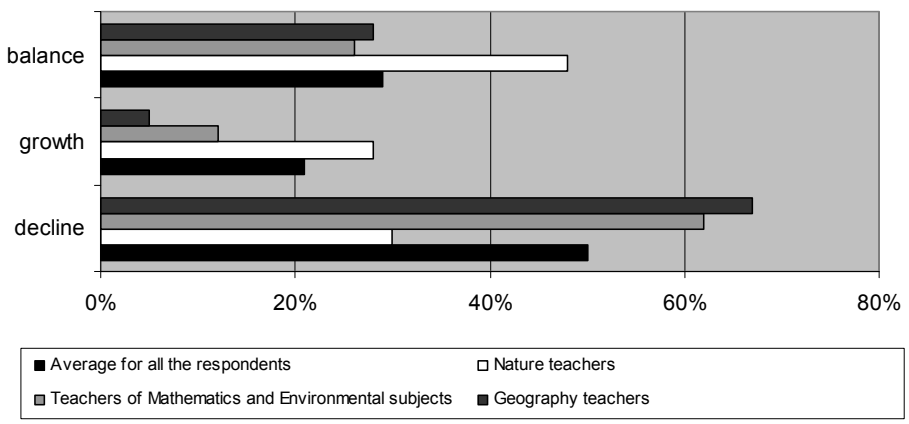

Fig. 3. Level of teaching effectiveness from the 1st to the 3rd stage of education in the teachers' opinion (%); source: own elaboration

In order to verify the above hypothesis, research has been conducted with a selected geography teacher in one of the secondary junior schools in Poznań. Students born in 1985 took part in a didactic measurement in 2000, whereas in 2010 – students born in 1995. Results of the conducted tests (fig. 4) reveal a difference of level of basic geographic skills. Number of points gained by the students of secondary junior school in 2010 for almost all the tasks is lower by half than students' results from 2000. It is worth underlining that decreasing level

of skills does not influence significantly average students' marks in geography. Reasoning in the subject of deforestation and recognition of geographic coordinates of locations are the weakest developed skills. Tasks requiring usage of text and map are considered by students to be the most difficult, probably due to the time and effort which has to be spent on reading a text with understanding and on drawing conclusion. In regard to the presented results (fig. 4) it can be said that teaching effectiveness is dropping systematically. However, due to low representativeness of the sample, conclusion about level of teaching effectiveness in Poland is encumbered with an error. Moreover, it is hard to define an actual level of knowledge of secondary junior school student's as the conducted research was not related to particular consequences such as marks. This resulted in the fact that a student did not have motivation to work and sequence of task accomplishment depended on his mood. Assuming that students managed best a skill of defining common features of a particular group of cities, recognising processes in water circulation with application of a scheme and putting events in a chronologic order, one can suppose that level of the acquired skills depends, to a great extent, on type of task, level of its difficulty and subject of a task. This is because students resolutely resolved close-ended questions. Recognition of selected words of Poznań local dialect is en example of such a task. Low level of difficulty of a task, which consists in matching and is interesting because of its subject, motivated students to such extent that they gained 67% of the maximum result. Although the students' results in 2010 were, of course, lower, the task has proven that difference between the results in comparison with a year 2000 does not have to be very big (fig. 4).

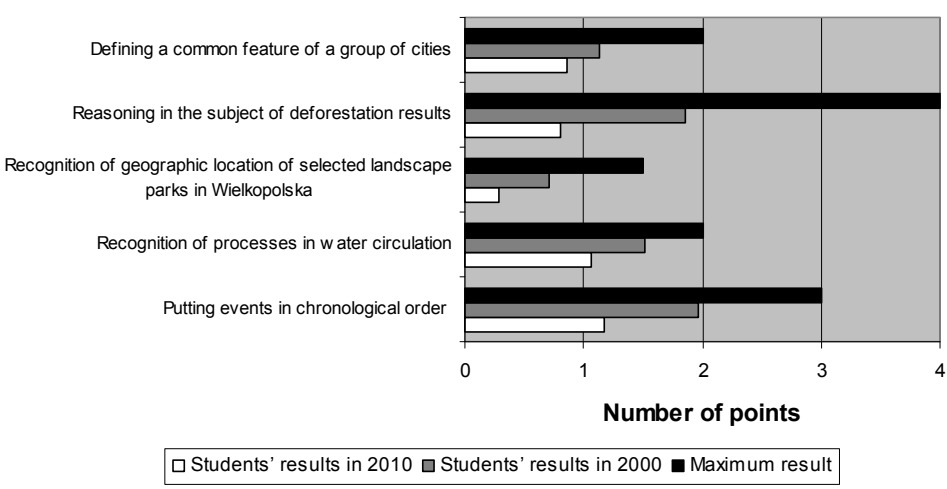

Fig. 4. Level of basic geographic skills (number of the points gained for test tasks) by secondary junior schools students in Poznań in 2000 and 2010; source: own elaboration

PROPOSAL FOR CHANGES IN GEOGRAPHY EDUCATION – SCENARIO

Analysis of threats and opportunities is a starting point for forecast of changes in geography education. One out of five surveyed teachers points to growth of pathology among the young people. Inappropriate behaviour during lessons, violence towards teachers and colleagues makes it impossible to carry out a lesson, while reluctance to work and constant fight for position in a group leads to decline in teaching results. According to 15% of all the teachers, utilisation of computers during lessons is another problematic issue. Changing ways of teaching and learning of the digital generation, development of out-of-school interests and computer skills limit, in teachers' opinion, to a great extent, independent and creative thinking. However, teachers who do not cope with teaching curriculum "teach to the tests", which does not involve tasks requiring group problem-solving. According to 25% of all the surveyed teachers such a situation may lead to increase in number of students bereft of basic key competences, so important in the future life, or even to illiteracy. Bogaj and others' paper (1998) confirms the opinion of the surveyed teachers to the effect that there are a lot of threats for further implementation of the education reform assumptions. One of the most significant threats appearing in a process of transformation and education system reform is discussion over issues of funding, instead of focusing on essential concept of education system reform. Regardless of financial situation, teachers should concentrate on constructive change of their approach to curricula modifications or otherwise a pessimistic scenario may come true (fig. 5).

The surveyed teachers predict that in spite of appearance of a few good things, such as external examination, focus on skills and teaching methods, basic threats remain: decline of teaching level and education quality (fig. 5). The scenario assumes that decline of teaching level will be related to shortened time for teaching curricula. Lack of time accounts for difficulty in revising or resolving untypical tasks, which, for a last few years, resulted in cursory approach to the teaching contents, put in order by the means of tests. Many teachers do not perceive any threats and still teach to the tests, eliminating most time-consuming, but at the same time most effective teaching methods, such as outdoor classes (Cichoń, in press). The scenario (fig. 5) assumes also a decline in education quality. According to the surveyed teachers, presenting every issue by means of multimedia, on one hand accounts for an attractive form of communicating knowledge, on the other popularises model of Digital Generation of "copy-paste", which suppresses independent thinking and creative work during lessons. In the teachers' opinion it is teachers themselves, who influence a decline of education quality, as having competences gained during postgraduate

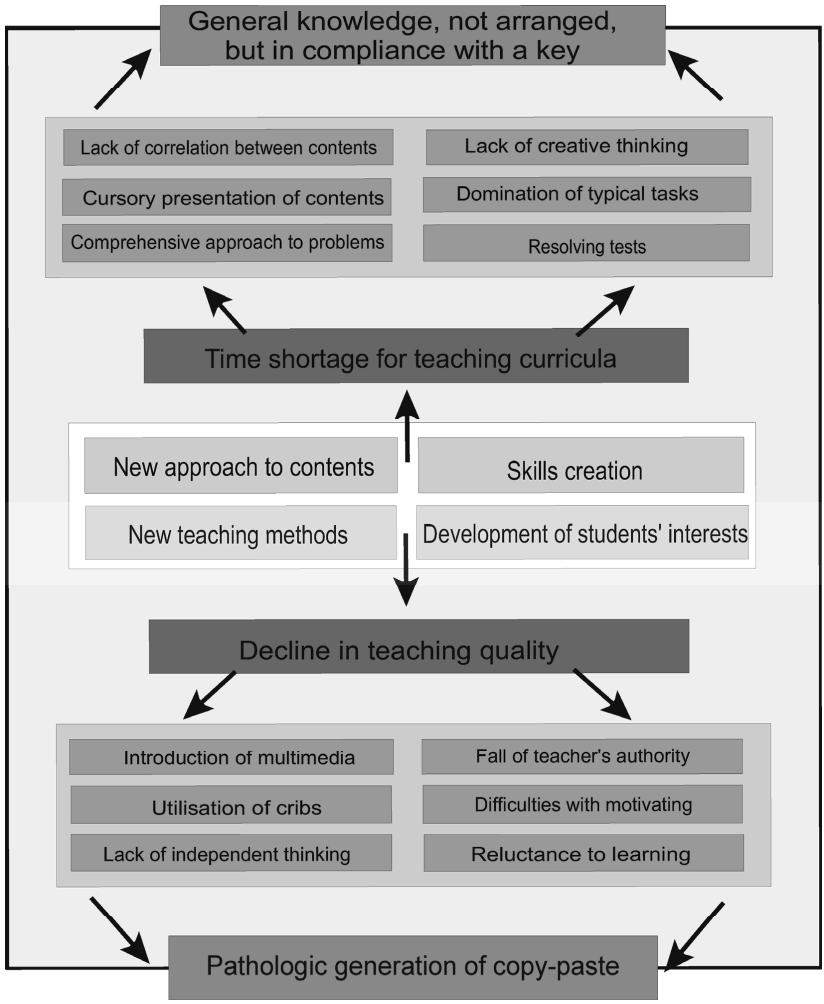

Fig. 5. Scenario of changes in geographic education in teachers' opinion; source: own elaboration

studies, they lack knowledge of a didactics basics in the taught subjects. Also inability to communicate with students, lack of effective techniques of motivation to study and total helplessness in difficult situations are becoming increasingly serious problems.

8% of all the teachers think that European Union projects and motivation growth among students are the opportunities for education. Only five out of 151 teachers understand that adapting to changes, which are inevitable, is an opportunity for the future school. Appropriate methodical and psychological background of the teachers determines success of the reform, as many teachers still do not understand what education in 21st century consists in.

CONCLUSION

It was one of the objectives of the education reform to develop key competences needed in a life of an adult. The scenario presented above (fig. 5), already often observed in a school practice, is a contradiction to it, as majority of these competences is not being developed in a school practice. There are a few issues which should be rethought, because further actions undertaken according to the scenario bring a threat of a systematic decline in effectiveness of teaching, also geography. I agree with Banach (1999) that improvement of level and quality of education should take place by means of curricula and methods changes as well as transformation of grading system.

1. New syllabuses and textbooks still contain too much information to assimilate, which results in concentration on teaching curricula instead of skills or key competences. Curricula should, to a bigger extent than until this moment, take into consideration also regional issues.

2. Inability to adapt scope of information to time limitations leads to utilisation of lecture methods and elimination of these methods which help students to acquire a skill of independent, group and creative problem solving. Teachers should also take into account field classes and project method.

3. Criteria for assessing student's level of developing key competence are missing. Assessing students for resolving tasks in compliance with a key during examination arouses a lot of controversy, especially that school is supposed to develop creative problem solving. Formation of attitudes should be another extremely significant goal for a school. However, school cannot carry full responsibility for student's formation.

4. Not all of the Ministry's proposals, such as two additional hours per week to teachers' working schedule, aiming at student's development out of the obligatory classes, play their role properly. Students are not obliged to participate in this type of activities, which are targeted mainly at the weaker students. Many ideas have not been consulted with the teachers, which leads to a situation in which fictional documentation is created in schools, so that it meets Ministry's requirements.

5. Many teachers, especially those who, having finished a few years of postgraduate trainings, do not know the basics of teaching their subject, are not able to adapt to the changing conditions. Moreover, teachers are incapable of coping with the difficult teenagers. Thus, there is another mission for the schools to accomplish – pedagogic and psychological diagnosis of the students, to conducting which teachers have no competence.

6. The Ministry together with experts should create a system and criteria for teachers assessment. Assessing teachers individually on the basis of students' examination results makes no sense. Mainly assessment of teaching methods and

school's specific character (such as number of classes and students in classes), region in which students live, level of social pathology, students' intellectual capacity and level of acquired key competence should be taken into account. In Banach's (1999) opinion, it is necessary and urgent to undertake fundamental changes in teachers' education and teacher's status, his/her rights and obligations.

Assessment of education reform implemented in 1999, from teachers' point of view is not positive. With regard to necessity for gradual implementation of modifications (Hausen 1998), results of this appraisal will be useful when new projects of reforms are created. Survey of teachers' opinion should be treated as an element of monitoring system of the reform implementation and realisation. High incidence of changes in education system, which impedes their reliable assessment, should be perceived as weakness of the reforms. Thus, one of the teachers' suggestion for the Ministry is to create normal conditions for work at school, without a chaos resulting from successive organisation and curriculum modifications.

At the current stage of the reform it is not directives, new scenarios or reports that matter that much. First of all, one should consider how to decrease discrepancies between the Ministry's assumptions and school practice at the level of local governments. It is recommended that teacher's authority be strengthened and knowledge about a region communicated by field classes. Whereas, as it comes to students, awareness should be raised that knowledge together with practice accounts for potential. All this should be followed by implementation of appropriate legal, social, organisational, economic and material solutions projected for a long term.

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