Ministry of Education and Science of Ukraine

REFORM STRATEGY FOR EDUCATION IN UKRAINE

EDUCATIONAL POLICY RECOMMENDATIONS

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Reform Strategy for Education in Ukraine: Educational Policy Recommendations. – Kyiv: K.I.S., 2003. – 280 pages.

A research on educational policy in Ukraine is presented in the book. The proposed publication is based upon the world approaches to definition and elaboration of options to solve educational sector problems. The authors analyze the modern tendencies in the 21-century education development, describe possible alternatives, evaluate their prospects in terms of the implementation, and give recommendations.

The main attention is attached to the following key areas of the educational reform: equal access to quality education, content of education, education quality monitoring, governance and financing.

The book is for education policy makers, school managers, researchers, pedagogues, students and consultants.

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Foreword

The path Ukraine has chosen towards integration into Europe and the world community necessitates intense changes in the social, political and economic life of our state. It is with this aim in sight that reforms, designed to achieve the best world standards, have taken place during recent years. The National Doctrine for the Development of Education has assumed an important role in this context by laying the foundations of a new educational model that is intrinsically humanistic, innovative and competitive in the European and international terms and that aims to raise a generation of young people that will feel secure and mobile in the job market, that are capable of making personal spiritual choices, and that are in possession of the knowledge, skills and competencies necessary for lifelong learning.

The educational development strategy defined by the National Doctrine has become a land mark in the work of the UN Development Programme Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" whose work has focused on investigating the question of improving educational policy. A detailed analysis of existing problems in education and selection of the most appropriate mechanisms for dealing with them (in the light of the educational strategy defined by the National Doctrine) was the project group's main task. Educational policy options for tackling the problems of equitable access to quality education, governance, financing, content and quality monitoring were the results of the project work. The authors – national project experts – closely studied modern approaches to educational development and established possible educational options after having evaluated them from the point of view of their prospective implementation.

Their work was not conducted in "cabinet silence" but in the spirit of close cooperation with the Ministry of Education and Science of Ukraine, along with other ministries and governmental bodies and the Academy of Pedagogical Science of Ukraine, as well as higher educational institutions, educationalists, international advisors and the general public.

The proposed work is an initial attempt of an integrated approach to define and forge solutions to problems existing in Ukraine's educational sector in line with the challenges facing 21st-century mankind.

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Introduction

The United Nations as one of the most influential international organizations in the world today is an obvious leader in the field of supporting global action designed to produce a model for further human development. The UN Millennium Summit (September, 2000) proved to be a crucial event in this context. UN member-states, including Ukraine, agreed to a set of goals and targets called the Millennium Development Goals (MDGs) as an agenda for combating poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women.

The eradication of poverty by 2015 highlighted by the Summit's Millenium Declaration is an urgent task for Ukraine today. According to official statistics 25-30% of Ukrainians live below poverty level, while statistics provided by the International Labour Organization indicate that in fact 57% of the adult population is officially classified as poor[1].

The UNDP Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" is an important component of the UN's sustained work in Ukraine to assist our country in developing its society along modern democratic guidelines through the reform of its national system of education.

The project has proceeded in partnership and with the support of the Ministry of Education and Science of Ukraine, the International Renaissance Foundation and *Shkilniy Svit* Publishing House. The research has been conducted with advice from the Open Society Institute (Budapest) whose international expertise can only have improved the quality of the work.

The project work has become a unique catalyst in sparking off revolutionary changes in education. For the first time in Ukraine's history a strategy for the development of education over the next quarter of a century – *National Doctrine for the Development of Education* – has been formed with the general public's participation in the discussion about the problems and priorities in the educational field. The first stage of the project work was characterized by the provision of technical support to the Ministry of Education and Science of Ukraine in developing an educational strategy (2001).

The second stage (2002) focused on analyzing educational policy. Political documents, that had been drawn up in the manner of a white paper, is something quite new for Ukraine today. Essentially this method of analysing policies for the purpose of diagnosing problems and drawing up recommendations before making the best decision is an instrument which is used worldwide in the formation of state policy[2].

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[1] Ukraine. Human Development Report. 2001. Power of Public Interaction. – K.: UNDP. – 113 p.

[2] Policy analysis is interpreted by the world experts as: "Use of different research methods and proofs for creation and dissemination of information which could be used in a definite political situation for state problems solving" (V.Dan, 1993); "Qualified application of intellect for the public problems" (L.Pal, 1999); "Purposeful intellectual and practical activity for creation, critical evaluation and dissemination of knowledge on the process of elaboration and conducting of public policy" (V.Romanov et all, 2001).

The model for further development that is defined in the National Doctrine requires the creation of an appropriate educational policy and efficient mechanisms for its implementation. Therefore, support in applying the National Doctrine in educational practice by means of recommendations drawn up for the Ministry of Education and Science became the idea behind the second stage of the project.

Based on the assumption that any policy analysis would include the following: a) problem formulation; b) choice of alternative options; c) definition of assessment criteria; d) assessment of policy options on the basis of selected criteria; and e) preparation of recommendations, the research was divided into a series of successive phases. The first one focused on defining the key problems in education and their characteristics.

The problems were defined within the context of five main areas of research, i.e. equal access to quality education, educational governance, educational financing, curriculum development and quality monitoring.

Provision of equal access to a high standard of education during the lifetime of each citizen regardless of social status, ethnic origin and religion is undoubtedly an urgent task for Ukraine. However, this problem is especially acute in early childhood. An early start assures successful school learning for children including those from needy families, as well as providing the state with highly qualified specialists for the future. In the study, "Equal Access for Children to Primary Education" (P. Khobzey) the situation in cities, mainly big ones, is examined in the light of the emergence of so-called elite schools.

The problems of efficient use of teacher resources (see "The Problem of Efficient Teacher Resource Use" by P. Khobzey) and of the role and place of modern vocational education and training in Ukraine (see "Vocational Education and Training in the Ukrainian System of Education" by P. Khobzey) are analyzed within the context of another area of research, i.e. educational governance.

The subject of effective use of funds in education is studied in terms of educational economy (see V. Voytov's "Educational Services Financing from Local Budgets").

Curriculum reform is a cornerstone of the entire process of educational transformation in Ukraine today. This area is presented by examining problems important for Ukrainian schools such as a competency approach to curriculum development (see O. Ovcharuk's "Competencies as a Key to Educational Content Renewal") and the organization of profile learning in upper secondary school (see O. Ovcharuk's "Profile Education in Upper Secondary School"). It is an innovative glance at the development of this important sphere.

Curriculum transformation cannot ignore the problem of teaching programmes and textbooks. An analysis of the adequacy of Ukrainian textbooks in meeting the demands of Ukrainian society has been started in the work "School Textbook Problems" (see V. Voytov and O. Ovcharuk).

The quality of education is assuming special significance in the modern world. Societies, including Ukrainian society, are becoming fully aware of how important it is to possess a high standard of education for the progressive development of a country. The quality of education can be ensured by means of monitoring, i.e. the systematized collection of information about important aspects of education at all levels for the purpose of keeping constant track of its state and forecasting its development. In the absence of a

proper educational monitoring system in Ukraine today, the works of Olena Lokshyna, "External Assessment of Student Achievements", "School Work Efficiency Evaluation" and "Statistical Data on the Ukrainian System of Secondary Education" touch upon possible ways of introducing the most important components of such a system.

The development of policy options as a means for attempting to deal with existing problems is the next phase of the research work. The project team did its best to take into consideration not only the interests of the Ministry of Education and Science but of all stakeholders in education, i.e. teachers, managers, students and parents.

During the course of working out policy options great attention was paid to studying positive foreign experience since Ukrainian education is developing in line with laws common to the world and, in particular, to the European community. The expertise of foreign colleagues in areas which are still new for Ukraine, i.e. a competency approach to curriculum planning, as well as the theory and practice of external assessment of student achievements, have been of special value.

The selection of policy options has been made by assessing them in relation to corresponding criteria, first of all, by applying the criteria of effectiveness, (i.e. is it is possible to get a valuable result?); of efficiency (i.e. how many resources are needed to implement the policy option?); of acceptability, (i.e. how far are the proposed policy options acceptable for the stakeholders?); of political feasibility (i.e. do the political will and potential exist for transformation?). The mentioned criteria have made it possible to forecast the influence of proposed options and to select the most appropriate of them for developing a modern system of education in Ukraine.

Extensive discussion at national and regional levels played a significant role in influencing the selection of policy options as well. Toward this end, numerous meetings with teachers, scholars, officials and international organization representatives were organized, notably, regional seminars (December 2002) in the east, west, south and centre of Ukraine – Cherkasy, Mykolayiv, Ternopil and Luhansk – which greatly contributed to our authors' work.

Recommendations on how to implement the policy options are the final result of the policy analysis in which the authors have expounded their views on what should be done to solve existing problems in education and how these are achievable with maximum effect in view of all the current difficulties.

The research and findings by the experts have been publicized in the press, at conferences and other events, including the Round-Table on Problems of Educational Administration and Funding (July 2002), the Forum on Children on the Edge of Educational Space – the Right to High Standard of Education and Life in Society (September 2002), the Seminar on the State Standards of Secondary Education (January 2003) and the Forum on Educational Reform – A Dialogue on Standards (June 2003).

The sources used during the course of our research were the country's legislative base in the educational field, statistical data and studies made by Ukrainian scholars.

In addition, the authors have made extensive use of the information and resource banks of foreign ministries of education and international organizations (UNESCO, UNICEF, Council of Europe, OECD, UNAIDS, the World Bank), of foreign research, as well as of leading countries' concepts and strategies for educational development.

The results of our surveys conducted at various levels, both central and regional, have proved an important source of information as well.

It should be mentioned that insofar as our policy analysis documents are strictly explanatory in terms of form, all the works contained in the book have the same structure which consists of an executive summary, introduction, section dedicated to the analysis of the problem, list of policy options, their description and conclusion.

Finally, the policy documents presented in the book are not a panacea for solving all the problems in education. They are the first signs on the road to modernizing Ukrainian education according to the provisions of the National Doctrine. We hope that they will promote extensive discussion among all stakeholders that will lead to the development of an effective educational policy in Ukraine.

Oksana OVCHARUK

Competencies as a Key to Educational Content Renewal

1. Executive Summary

The current reform of Ukraine's education is a part of renewal processes of the educational systems occurring in the European countries for the last twenty years. These processes reflect the recognition of the significance of knowledge as a motive force ensuring welfare and social progress. Changes brought on by these reforms involve the introduction of new educational standards, review and updating of curricula, and adequate provision of teaching aids, textbooks, and methods. A purposeful acquisition of knowledge, skills, and attitudes by a student, and their transformation into competencies, promotes cultural development of a personality, technological development, and ability to respond to the challenges of modern life. The European countries have started an in-depth discussion of how to equip an individual with necessary skills and knowledge to ensure his/her harmonious interaction with a rapidly developing technological society. This is why it is important to understand the concept of a competence in the knowledge-based society. It is important to know, what competencies should be taught and what could be the teaching outcomes.

Problem statement

At present, secondary education in Ukraine is designed to provide students with a basic knowledge and skills. A pupil is expected to acquire a lot of factual materials in the course of school study. The contemporary school falls short of teaching children to make decisions, use information and communication technologies, resolve conflicts, think critically, take their bearings on the labour market, etc. **Current education content does not fully meet the demands of society and labour market, nor does it aim at the acquisition of vital life competencies.** Changes that have occurred in Ukraine's educational system over the last decade have led to the overloading of educational curricula and textbooks with factual materials, which is a reflection of the encyclopaedic approach to education content development that prevailed during the Soviet times.

Orientation of curricula towards the acquisition of key competencies and creation of efficient mechanisms for the implementation of these competencies is one of the ways for education content renewal, its adaptation to modern requirements, and integration into the global and European education space.

As can be seen from the experience of many European countries, school curricula have been adapted over the past few years in line with a competency approach to education content and process. At the same time, the acquisition of key competencies is taken into account in assessing student performance. Key competencies should be the basis for

assessing student performance in a Ukrainian school also. This research performs a comparative analysis of the definition and selection of key competencies in different countries (Netherlands, Belgium, Austria and other countries); suggests a classification of key competencies and their general list; provides recommendations about initial steps to be taken by way of incorporating key competencies into the educational process of a national school.

Possible Recommendations:

Recommendation A. Involving Ukraine in the discussion of key competencies at all levels and integrating the country into the international Definition and Selection of Competencies (DeSeCo) network.

Recommendation B. Definition and verification of key competencies concept. Integration of key competencies into the curriculum (standards, programs and textbooks), development of innovative pedagogical techniques by way of competencies' introduction.

B.1. Providing information about a competency-based approach via various teacher training and in-service teacher training systems.

B.2. Incorporation of key competencies into the process of student performance assessment.

2. Introduction

Society's expectations, facing the school and declared in the strategic document – National Doctrine for Development of Education in Ukraine, are focused on the transition of the current educational system to a new type of humanitarian-innovative education aimed at raising the competitiveness of Ukraine's educational system in the global and European space, bringing up a young generation that will be protected and mobile on the labour market, capable of making its personal choice in life, commanding knowledge, skills and competencies necessary for successful integration into society, and of lifelong education.

Such a policy demands that a contemporary school should undertake serious reform measures to update the educational content, and apply novel pedagogical approaches to teaching, introduction of information and communication technologies to modernise social development processes. These reforms are not easy to implement; adaptation to and introduction of changes will require significant efforts and time costs.

The aim *of our research is to analyse contemporary trends in the development of educational content in Ukraine's schools, identify key problems, hampering the improvement of education quality, review the experience of other countries and, based on the comparative analysis, elaborate recommendations on addressing main education content problems solution.*

It is important that the legal framework for contemporary education content development is incorporated in the Law of Ukraine On General Secondary Education[3]. State Standard for Primary Education[4] has been developed in addition to the Primary

[3] Law of Ukraine "On Education" dated December 7, 2000, № 2120-III, Section V, "State Standard for General Secondary Education"

[4] Approved by Resolution of the Cabinet of Ministers of Ukraine on November 16, 2000, № 1717

School Curriculum, which is composed of the following educational areas: **"Language and Literature", 'Mathematics", "Health and Physical Culture", "Technologies", "Arts", "Human Being and the World".**

Draft State Standard for General Basic and Complete Secondary Education submitted for consideration by the Ministry of Education (MOE) in January, 2003, and approved by the MOE in October, 2003, provides for seven subject areas: **"Languages and Literature", "Social Science", 'Mathematics", "Natural Science", "Aesthetic Culture", "Health and Physical Culture", "Technologies".**

During independence years the Ukrainian school suffered from frequent changes and reviews of curricula, textbooks, and manuals. As a result, school programs became overloaded with factual materials causing a student to spend more time on doing home assignments. New textbooks and teachers books were created. Pursuant to Resolution of the Cabinet of Ministers of Ukraine of November 16, 2000, No1717[5], the new teaching hours' grid and new teaching programs were adopted for the four-year primary school, which is expected to gradually pass over to new curricula and programs during the next three years. During the transition period, basic and upper secondary schools will be still working according to the eleven-year educational system, but the updated curricula provide that conditions should be created for a specialised education in the upper secondary school; this also testifies to the need to create new programs and teaching materials.

Dramatic changes have occurred in social science disciplines: textbooks on Ukraine's history have been revised to incorporate new facts, and many materials have been added that were ignored during Soviet times. A similar example is the replenishment of programs and textbooks in Ukrainian and foreign literature with numerous works by previously unknown Ukrainian and foreign writers. Works of Russian literature have been included in the foreign literature section. Over independence years, many new academic disciplines were developed, namely: Civic Education, Environment, Information Science, Fundamentals of Safe Life Activities, Basic Economics, Basic Philosophy, a mandatory training in the second foreign language was introduced. In primary schools, foreign language teaching is obligatory starting from the Grade 2; this situation has led to the development of new programs and textbooks. The total number of teaching hours remained the same (in the first-level secondary educational establishments 175 working days, in 2nd and 3rd level educational establishments – 190 days). However, under the basic curriculum, the limiting permissible load on 3rd-level secondary school pupils averages 33-36 hours per week based on Resolution of the Cabinet of Ministers of Ukraine "On Transition of a General Education Secondary Establishments to New Curricula, Structure and Twelve-Year Education Term" (see reference 3), which is an indication of an increase in teaching hours in comparison with 1997 (30-33 teaching hours).

Textbook quality has deteriorated. Thus, results of discussions between participants in a regional seminars (Cherkasy, Mykolayiv, Ternopil, and Luhansk) under Project: "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" (December 2002), showed that some teachers, school principals and regional

[5] Resolution of the Cabinet of Ministers "On Transition of General Education Establishments to New Content, Structure and 12-Year Education Term" dd. 16.11.2000 No1717

administrators think that the general secondary education content is not focused on the acquisition of life competencies by students, or that it only partly fulfils this function (76% of respondents in total).

Legislative education-related documents determine key provisions for shaping educational content and stipulate that it should be based mostly on knowledge, skills and abilities resulting from secondary school education. Evidently, such an approach to the content of education is conventional and inadequate. Since the goal of education is to bring up in students a motivation and ability to study, the acquired knowledge, abilities and skills constitute a basis for the acquisition of necessary life competencies. It is extremely important to attract teachers' attention to this problem today.

Of indisputable importance are skills, abilities, and knowledge acquired and improved during an immediate training process. The notion of competencies becomes very crucial, which is due to many factors as competencies, many foreign experts believe, are the very indicators, which measure whether a school graduate is prepared for adult life, his/her further personal development, and active participation in social life. For instance, examples of key competencies may include: an ability to work in team, resolve conflicts, use information and communication technologies, display creativity and ingenuity, ability to apply knowledge and technologies, etc. (See Annex 1). At present, many international and domestic discussions are devoted to this issue (9), (13). A competency-based approach to shaping the education content has become a new conceptual benchmark for many foreign schools. Many industrialised countries hold the view that acquisition of competencies vital to subsequent life activities of an individual may enable the pupil to take his/her bearings in modern society, information space, volatile labour market trends, and to obtain further education.

Life competencies are also discussed in Ukraine, though the current discussion is focused on professional competencies as an outcome of professional training as well as on competencies the disabled pupils are to acquire in the course of their secondary education.

Over the recent years the concept of key competence was a topic of a wide discussion among member-states of the **Organisation for Economic Co-operation and Development (OECD),** which studied this problem in most European countries (8).

The findings from surveys of and interviews with representatives of the Ukrainian pedagogical community support an argument that that the present-day education content in the Ukrainian school is poorly oriented towards meeting the requirements of modern society, labour market, demands for obtaining further education.

This paper will dwell on the definition and selection of key competencies in advanced economies of the world; provide summary and classification of key competencies lists; perform comparative analysis and offer tentative recommendations as to the initial steps to improve the quality of national education.

3. Analysis of the problem

3.1. Competency Approach Application Problem in the Ukrainian Secondary Education

Over independence years, a set of laws and Government regulations was adopted in Ukraine in the field of education; these instruments became the basis for the development and introduction of new education content. In particular, these legal instruments include "Law On General Secondary Education"," Law on-Pre-School Education", and "Law on Vocational Education and Training", Cabinet of Ministers Regulation "On the Transition of Secondary Education Establishments to a New Content, Structure and a 12-year Term of Education" etc. Law "On General Secondary Education" provided for the elaboration of education standards for primary, basic, and complete secondary education[6]. The educational goals reflected in the Law and new Educational Standards envisage that the *content should be based on common human values and scientific principles, intercultural approaches, secular character of education, integrated system principles, unity of education and training, human, democratic and civic values, tolerance among nations and nationalities in the interests of an individual, family, society and state*. Thus, for example, the Educational Standards for Primary Education are directed at the comprehensive development of junior pupils and their achievements in all kinds of educational activity through "the formation of lingual, reading and calculation skills, the desire and ability to study... Children should gain an appropriate experience of communicative culture and collaboration in various types of activities and self-expression in creative kinds of activity"[7]. Such a wide goal statement does not clearly define the final teaching results, which should be directed towards the acquisition of necessary life competencies by pupils to enable them to study, address social tasks, and respond to the challenges of time.

For example, the ***education area "Human Being and the World"*** aims to provide pupils with knowledge and skills mostly denoted by the words "to know, to have an idea". The authors of the Educational Standards, for example, consider that this education area should contribute to the formation of behaviour skills in the natural and social environment. Only methods of nature learning should result in "pupils' ability to observe, use special devices and conduct an experiment" that could in part be related to the idea of skills acquired on the basis of a competency approach. (See reference 6, p. 209).

Education area – "Arts" should result in the pupil's ability to react emotionally to the imaginary content of a performance, which from the point of view of the right of every child to show emotion, is somewhat questionable at the display of emotions as a delicate psychological instrument. Regarding the competency approach the result should be seen, for example, in the ability to express one's own thoughts and judgements and to show interest and personal creativity regarding the performance. Such positions could belong to the list of personal competencies.

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[6] Law of Ukraine On General Secondary Education of December 7, 2000, # 2120. - Osvita Ukrainy. Normative and regulatory documents. L.: Millenium. pp. 103-126.

[7] State Standard for Primary General Education. - Osvita Ukrainy. Normative and regulatory documents. - L.: Millenium. - pp. 163-213

Education area "Technologies" is limited by propaedeutic goals and preconditions the acquisition of domestic and household labour skills. The problem of necessary competency acquisition is not raised at all. (See reference 6, pp. 200-202).

The **draft State General Secondary Education Standards and Basic Curriculum for General and Upper Secondary School** take into account student acquisition of the necessary competencies, but the idea of competency formation is not reflected in a systemic way in the in the Basic Curriculum.

The description of the ***education area "Languages and Literatures"*** points out that while examining the content component of the Ukrainian language the linguistic content line guarantees the language competence of students as one of the means of developing language skills. But the communicative line targeted at the development of skills and abilities in all kinds of language activities (listening, reading, speaking and writing) plays the leading role. Activity lines at all levels include "practical acquisition of important methods of language activity" as learning outcomes in a general way. We consider that the idea of "understanding the reality of past" and "predicting the future" does not correspond to language learning, but could be seen as a component of personal skills and characteristics. One of the results of upper secondary school level i.e. "to conduct a program of self-development and self-realisation" is described in general terms and says nothing about the development of competencies and language skills.

The draft Educational Standard on ***foreign languages*** learning assumes that pupils should achieve a level of communicative competency which allows them to speak, write and understand a foreign language. The Standard defines *communicative competency* as consisting of three main types: speech, lingual and socio-cultural. In turn, speech competency consists of the following four competencies: listening, speaking, reading and writing. Lingual competency includes lexical, grammatical, phonological and orthographical competency; while *socio-cultural competency* covers two areas: country knowledge competency and knowledge about country's language. Competencies are seen as learning outcomes characterised in a detailed manner that allows those engaged in the planning of teaching programs to understand the meaning of concepts. For example, the reading competence in basic school assumes that the pupil will be able to understand adapted texts connected with private, educational and other fields built on language material corresponding to communicative needs and interests of pupils, aimed at obtaining full information, its evaluation and at commenting on it. Having determined the foreign language component, the authors describe the learning outcomes basing on what pupils can do: communicate, use compensatory means etc. This allows us to assert that the languages education area generalises and summarises the concept of competency in the most systematic way compared to other education areas.

Education area – "Social Sciences" presented in the Educational Standard aims to promote the acquisition of socially important competencies. For example, in basic schools the following competencies should be developed: ability to define cause-effect relations, to work with documents, to defend one's point of view and rights declared in Constitution, to hold a discussion, to resolve conflicts, to make sound choices, etc.

Education area – "Mathematics" does not focus on the achievement of necessary competencies by pupils but is limited to the acquisition of knowledge, skills and abilities that are sufficient for further successful mastering of other education areas and ensuring

lifelong learning in spite of the fact that this area is one of the basic components of general secondary education[8]. It can be incorporated in the field of functional competencies that include components such as intellectual development, ability to apply logic, mathematical knowledge and skills, systemic thinking and ability to solve complex logical and mathematical problems, and to apply modelling abilities.

Today we can assert that that the mastering of key competencies is not represented as an outcome of student achievements and is not incorporated into a system for the assessment of student achievements.

It would be practical to learn from the experience of economically developed countries concerning the elaboration and implementation of the competence-oriented approach to curriculum development in a secondary school.

Key competencies are gradually incorporated into educational content in many European countries; this is accompanied by extensive discussions and comprehensive scientific research. As the ***key competencies concept*** is very many-sided, its definition and interpretation is a permanent subject of current discussions.

3.2. Council of Europe Approaches

The Council of Europe International Commission considers that the notion of competence covers general or key skills, basic abilities, fundamental ways of learning, key qualifications, cross-learning skills and abilities, key ideas or support knowledge[9].

The concept of **Competence,** the Council of Europe experts believe, includes:

- ability of an individual to perceive and respond to social and individual needs;
- complex of attitudes, values, knowledge and skills;

This definition of the idea of competencies corresponds to the position expressed by Ukrainian pedagogues. However, representatives of the European pedagogical community identify competencies, first and foremost, as a tool for satisfying personal and social needs.

Key competence:

- contributes to the achievement of success in life;
- contributes to the improvement of the of quality of social institutes;
- responds to diverse spheres of life.

3.3. Position of the International Board of Standards for Training, Performance and Instruction (IBSTPI)

According to the definition of the International Board of Standards for Training, Performance and Instruction (IBSTPI) the **concept of competence** is defined as the ability to perform activity, to carry out work or task in a qualified way. In so doing, a competence

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[8] National Educational Standards for Basic and Complete Secondary Education. Draft. Kyiv 2003 .- Shkil'ny Svit.- 39 p.

[9] Definition and Selection of Competencies. Theoretical and Conceptual Foundations (DeSeCo). Strategy Paper on Key Competencies. An Overarching Frame of References for an Assessment and Research Program – OECD (Draft).

concept contains a set of knowledge, skills and attitudes that allow an individual to fulfil work or functions in accordance with definite standards in a professional or activity area[10]. To make the competency assessment easier, the International Board suggests singling out of this notion such indicators, as the acquired knowledge, skills and academic achievements.

3.4. Lisbon Conference Input (2001)

Results of the working sessions of EU representatives held in Lisbon in 2001 may be regarded as another important of Europe-wide development in this area. The working group determined key competencies for lifelong learning and presented the results at the European Commission Meeting in Stockholm[11]. It was proposed that key competencies for life long learning should be composed of the following ***8 main competency areas***:

- (fundamental) writing and calculation skills;
- basic competencies in the field of mathematics, natural sciences and technologies;
- foreign languages;
- ICT/IT skills and technologies;
- learning skills;
- social skills;
- entrepreneurship skills;
- general culture.

Experts who suggested this list emphasised the need to highlight foreign language and ICT as key competencies that require special attention and application of special means. In March 2002 (Barcelona), EU country representatives announced their willingness to support foreign language learning in early childhood and general introduction of the Computer and Internet Certificate for secondary school pupils. In addition, facilitating the introduction of the European Dimension to education was declared to be the general strategy for education development until 2004.[12]

3.5. Organisation for Economic Co-operation and Development Competency Oriented Approach (OECD)

To date, the OECD (9) pays considerable attention and directs activities to incorporate key competencies in the content of education. Since the 80s, the OECD has been using data on education in different countries for the purpose of examining and comparing education efficiency and effectiveness; this has allowed the OECD to elaborate a system of

[10] Spector, J. Michael-de la Teja, Ileana. ERIC Clearinghouse on Information and Technology Syracuse NY. Competencies for Online Teaching. ERIC Digest. Competence, Competencies and Certification.-p.1.

[11] OECD: Program on International Student Assessment, 2000. - 3. New Skills for the Learning Society.

[12] P.23. Key Competencies. A Developing Concept in General Compulsory Education. Eurydice. The Information Network on Education in Europe. 2002. – 28 p.

education indicators. The OECD member-countries noted that beginning from the 90s there was a lack of research into theoretical and conceptual principles of knowledge and their correlation. Currently, there is no common approach to the definition of the competency concept.

To achieve progress in the definition of foregoing concepts, **the "Definition and Selection of Competencies (DeSeCo): Theoretical and Conceptual Foundations" Programme**[13] was launched in 1997 within the framework of the Federal Department of Statistics of Switzerland and National Centre of Educational Statistics of US and Canada. The Programme stipulated co-operation of experts from various areas, i.e. education, business, industry, health as well as representatives of international and national educational institutions. At the moment, "DeSeCo" Programme is in the process of systematising and summarising the experience of many countries with regard to the definition and selection of key competencies.

OECD experts consider that the creation of appropriate conditions for obtaining necessary life competencies will promote:

- productivity and competitiveness in the labour market;
- unemployment reduction due to the flexible (adaptive) and qualified labour force;
- development of the enabling environment for innovation in conditions of global competition.

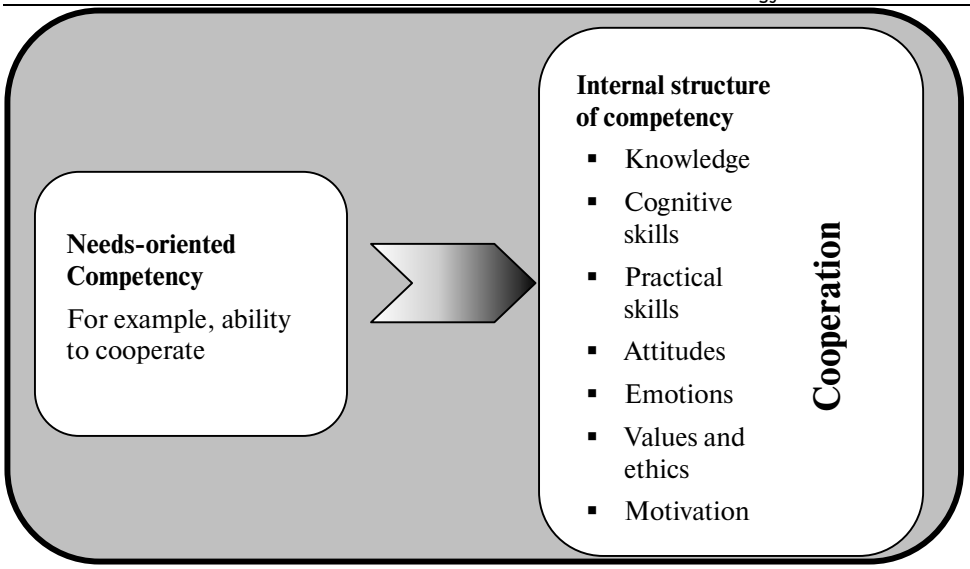
In terms of future opportunities, achievement of life (key) competencies by a person is very important, because they can promote (8):

- participation in the formation of democratic institutions of a society;
- mutual social understanding and justice;
- human rights and individual independence protection despite global inequality, unequal opportunities, marginalization of an individual.

DeSeCo experts define ***competencies*** as an ability to successfully meet individual and social demands, to act and to carry out the assigned tasks. Each competence is based on a combination of cognitive attitudes and practical skills, values, emotions, behavioural components, knowledge and abilities that a person can mobilise for active action.

This scheme is an example of the internal competency structure which is needs-oriented (DeSeCo, 2002):

[13] Laura H.Salganik, Dominique S.Rychen, Urs Moser, John W.Konstant (1999), Projects on Competencies in the OECD Context: Analysis of Theoretical and Conceptual Foundations, SFSO, OECD, ESSI, Neuchbtel.



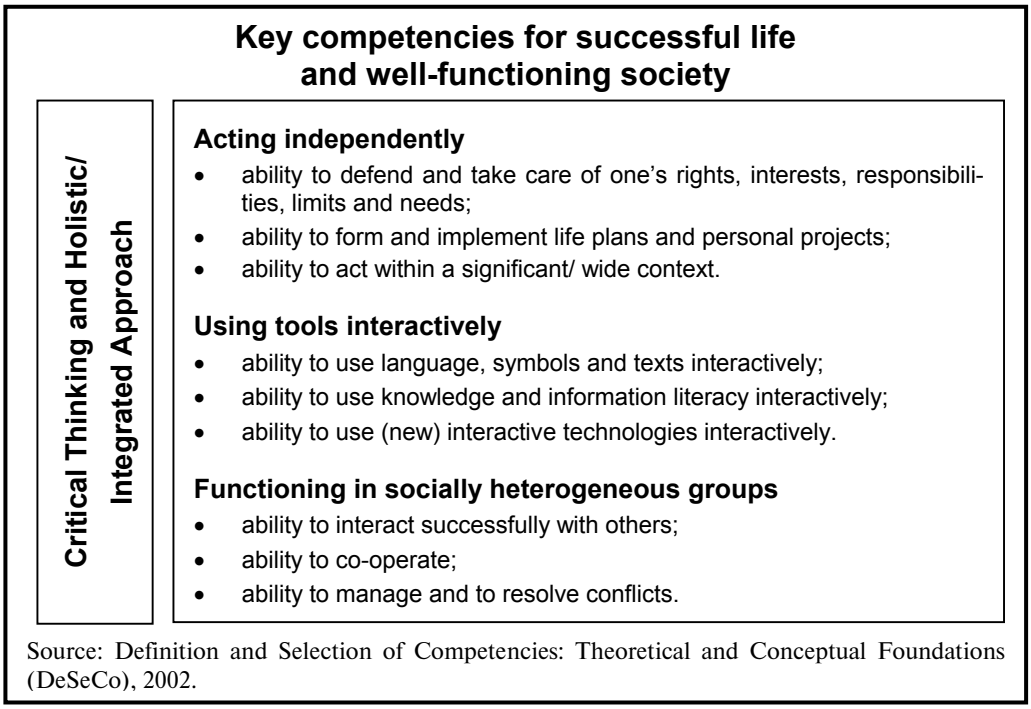
DeSeCo experts believe competency is instilled in personal activity in different contexts (for example, in the social economic and political environment). School is not the only contributor to the acquisition of necessary competencies; family, work, mass media; religious and cultural organisations also influence this process. The problem of personal skills development has become extremely relevant in recent years. A pupil's personal achievements – the results of the educational process are examined in this context. Interest in education achievement is focused on: what a pupil knows, how much he/she can do, correlation between abilities and educational goals (effectiveness of educational systems) and their correspondence to educational outputs. This correlation is important not only in terms of understanding what to teach but also in terms of selecting the most effective teaching methods that affect the level of key skills and competencies of pupils.

The ***key competency*** concept (OECD) is used to determine the competencies, which enable a personality to actively participate in different social spheres and to contribute to the development of the quality of society and personal success. This can be applied to different life areas. Key competencies comprise the main set of general concepts translated into knowledge, skills, values and attitudes according to school subjects and life areas.

One of the most important theoretical results of the discussion about key competencies concept was the definition by OECD representatives of **three categories of key competencies as a conceptual basis (9),** which included:

- acting independently;
- using tools interactively;
- functioning in socially heterogeneous groups.

This scheme is representative of the structure of three categories of key competencies, where democracy and individualism are central features; they are considered valid internationally; and they are necessary for coping with the complexity of modern life (9).



Source: Definition and Selection of Competencies: Theoretical and Conceptual Foundations (DeSeCo), 2002.

modern life (9).

The OECD experts believe that this classification defines the criteria upon which the list of key competencies is based. Let us look at these categories in detail:

Acting independently

This category assumes two central ideas: personal development and autonomy in selection and activity within the existing context:

- ability to defend and take care of one's rights, interests, responsibilities, limits and needs which presupposes the ability to make a choice as a citizen, family member, employee, consumer, etc.;
- ability to form and implement life plans and personal projects which allows aims and arguments to be defined that impart a meaning to life and coincide with personal values;
- ability to act within a significant / wide context means that a person realises how different systems (contexts) function, is aware of his/her personal positions with respect to these contexts, of possible consequences of action, and considers many factors for personal action.

Using tools interactively

This category assumes an understanding of a wide range of methods that allow a person to interact with the surrounding world:

- ability to use language, symbols and texts interactively means an effective use of languages and symbols in different forms and situations for the achievement of goals, development of knowledge and personal abilities. This enables an understanding of the contemporary world, as well as an active participation in dialogues and effective interaction with the environment;
- ability to use knowledge and information literacy interactively assumes an effective use of information and knowledge that helps a person to adequately perceive and apply them, use them as the basis for the formation of possible personal actions, positions, decision-making and active work;
- ability to use (new) interactive technology interactively assumes not only technical abilities and computer skills, but also the knowledge of how to apply new forms of interaction with the use of technologies. This competency allows a person to behave adequately in a changing life.

Functioning in socially heterogeneous groups assumes an ability to live and interact with other people in a multicultural society in the broad sense (interaction with people that speak other languages and hold different views on life). This is absolutely important for interaction with a society that has a different culture, different values and a different socioeconomic base:

- ability to interact successfully with others allows a person to show initiative, support and control personal relations with other people;
- ability to co-operate allows a person to work together with others in order to achieve mutual goals;
- ability to manage and to resolve conflicts allows a person to accept conflicts as an aspect of human relations and to be ready to resolve conflicts in a constructive manner. (9)

The DeSeCo experts believe that it is necessary to create a special computer database (in comparison) as a resource for the elaboration of education, social and economic strategies. Experts believe that such a comparative database will help to indicate how the competence levels can influence the development of the labour market and social processes in countries. The monitoring of competency levels is an important indicator of the educational systems efficiency[14].

The process, which occurred due to the "DeSeCo" Programme, had allowed participating countries (of which there were more than 18) to identify a list of key competencies for each of them (See Annex 1).

[14]Definition and Selection of Competencies. Theoretical and Conceptual Foundations (DeSeCo). Strategy Paper on Key Competencies. An Overarching Frame of Reference for an Assessment and Research Program – OECD (Draft). – p.8

The OECD member-countries have already launched a Programme on International Student Assessment (PISA) (Involvement of EU Member States in Large-Scale International Studies on Education Attainments) which evaluates competencies by international PISA tests. (10) Thus, the cross-content competencies that were assessed in 2002 included pupils' motivation, learning attitude aspects, computer skills and self-regulatory learning. In addition, a work plan for 2000-2006 was elaborated. (See Annex 5).

It was planned to continue the practice of examining problem-solving abilities and ICT/IT skills in future[15].

Having presented different approaches to the definition of the key competencies notion developed by international education institutions as well as having analysed Ukraine's legislative documents, programs and standards, we should mention, however, that today there is no equivocal definition of the of key competencies concept. Discussions held over the recent decade had offered many countries an opportunity to develop their own ideas and definitions; however, the main role in the development of the definition belongs to international organisations, which have attempted to generalise upon the achievements of pedagogues from different countries.

Based on the analysis conducted within the framework of this research, it has been found that:

1. According to international experts, the definition of key competencies belongs to the category of general concepts containing a complex set of different components, i.e. knowledge, skills, abilities, interrelations, values and other components of personal and social aspects of a person's activity, influencing personal and social progress;
2. OECD member-states have studied in more detail the classification of key competencies through extensive discussions among representatives of world pedagogical community. The proposed classification was adopted by many states as a strategic condition for lifelong learning implementation. Conceptual provisions regarding the acquisition of key competencies and skills were included in the recommendations of the international community (EU White Book, 1996; Memorandum on Life Long Learning, 2000; Action Plan of European Union and Council of Europe, 2002; Action Plan on Skills and Mobility of European Commission, 2002).
3. The Ukrainian education system has just started to use the competency concept within the context proposed by the European countries. Although draft State Standard has the intention to incorporate the idea of competencies acquisition by pupils into the groundwork for education areas, there is currently a lack of systemic and co-ordinated approach to the systematisation of the key competencies concept, which is vital to supporting the integration of Ukraine's education into global processes.

[15] Involvement of EU Member States in Large-scale International Studies on Education Studies on Educational Attainment/Key Competencies. A developing concept in general compulsory education. Eurydice. The information network on education in Europe., 2002. – p. 25, 26.

Analysis of the process for the definition and selection of key competencies in European countries (Austria, Belgium, Germany, Finland and the Netherlands) has allowed us to conduct a general classification of the list of key competencies (See Annex 1) and divide them in three main blocks (core groups): social, motivational, and functional competencies, as follows:

Social competencies *(related to the environment, life in society, social activity of a person)*	**Motivational Competencies** *(related to intrinsic personal motivation, interests, individual choices)*	**Functional Competencies** *(related to the sphere of knowledge, ability to operate scientific knowledge and facts)*
▪ ability to co-operate; ▪ problem-solving and ability to cope with problems in different situations; ▪ comprehension skills; ▪ active participation; ▪ social and civic society values and skills (including tolerance, multicultural approach, cultural identity and patriotic values etc.); ▪ communication skills; ▪ mobility (in different social conditions); ▪ identification of personal role in the society, etc.	▪ Ability to learn; ▪ inventiveness; ▪ adaptability and mobility skills; ▪ skills of gaining success in life; ▪ ability to see goals and final results (personal or common); ▪ desire to change own life for the better; ▪ interest, activity motivation; ▪ personal practical abilities; ▪ ability to make own choice and set personal goals, etc.;	▪ linguistic competence, ▪ technical and scientific competence; ▪ ability to use knowledge in life and study; ▪ skills to use information sources for self-development; ▪ ICT skills, etc.

This list was discussed and complemented at a series of regional seminars and round-tables (Cherkasy, Mykolayiv, Ternopil, and Luhansk) held for the pedagogical community. **92% of respondents consider the introduction of a system of key competencies into the content of Ukrainian education to be extremely relevant and appropriate.** This proposal was accepted as a commitment and willingness to start a stage-by-stage discussion process of the lists of key competencies, and also as one of the main strategies to improve the quality of education in Ukraine.

In addition, participants in these events proposed their own versions for categorising competencies: personnel health, professional activity, and social sphere. They also proposed launching extensive discussions on how key competencies could be built into the content of education (See Annex 3).

Stakeholder interviews conducted during the research into the competencies problem within the framework of Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" revealed respondent views on what curriculum component – variable or invariable components – will best facilitate the introduction of said three groups of competencies. Of 72 obtained responses, about half of the respondents believe that said three types of competencies are an invariable part of the curriculum, while others regard them as a variable curriculum component. Only a small part of respondents (about 10%) think that competencies set should be supported both by a variable and an invariable part of school curriculum. Therefore, one can observe a general agreement that the system of key competencies can significantly improve the quality of domestic secondary education; however, teachers hold differing views on ways and means to incorporate these competencies in the teaching and education process. We believe that the Ukrainian educational system and Ukrainian pedagogues are ready to discuss all the aspects concerning the definition and selection of key competencies, their introduction to the content of education. Our further proposals are based on this very assumption.

4. List of Recommendations

The following recommendations on initial steps involved in the introduction of key competencies to the education process in the Ukrainian schools were worked out in the course of the research:

Recommendation A. Involving Ukraine in the discussion of key competencies at all levels and integrating the country into the international Definition and Selection of Competencies (DeSeCo) network.

Recommendation B. Definition and verification of key competencies concept. Integration of key competencies into the curriculum (standards, programs and textbooks), development of innovative pedagogical techniques by way of competencies' introduction.

B.1. Providing information about a competency-based approach via various teacher training and in-service teacher training systems.

B.2. Incorporation of key competencies into the process of student performance assessment.

5. Description of Recommendations

Recommendation A. Involving Ukraine in the discussion of key competencies at all levels and integrating the country into the International Definition and Selection of Competencies (DeSeCo) network.

Today, Ukrainian pedagogues are ready for competence approach introduction into the educational system and the Draft State Standard of Secondary School provides for initial steps by way of implementing this approach. Therefore, we consider it appropriate to propose the development of a strategy for the involvement of pedagogical community in the discussion of key competencies concept and mechanisms for the introduction of competencies to education content. It is practical to start the discussion process in mass media (the pedagogical press), in teacher training and advanced training institutions, higher educational establishments, and at instructional boards of all levels. It is desirable to develop a special strategy (possibly within the framework of a national project) for creating

a process of definition and selection of key competencies in Ukraine. In future, such a strategy could result in Ukraine's joining the "DeSeCo" (Definition and Selection of Competencies) Programme, which currently united 18 countries in a joint discussion of key competencies lists, their renewal and mechanisms of introduction to the education process within the framework of an international network.

It is to be borne in mind that Ukraine's participation in the international network will require certain budget expenditures. Given the budget deficit, the process of competence discussion could be initially realised at the national and local levels. In future, it will allow Ukraine to join the international discussion.

Recommendation B. Definition and verification of key competencies concept. Integration of key competencies into the curriculum (standards, programs and textbooks), development of innovative pedagogical techniques by way of competencies' introduction.

This recommendation provides for the conceptualisation of the competencies notion and of the key competencies. This task should be imposed on such organisations as the Ministry of Education and Science of Ukraine and the Academy of Pedagogical Sciences of Ukraine with participation of other relevant stakeholders. It is within this context that the changes to the approach to curriculum selection in secondary education and orientation towards the competence approach should be declared. The aim of pupils' mastering necessary competencies specifying basic and key competencies should be reflected in the state standard and the basic curriculum.

Competencies may be developed in greater detail by specialised and inter-sectoral working groups and presented in the Basic Learning Plan in the form of study results. Key competencies components, knowledge and skills as well as other aspects should be defined and proposed for implementation according to the scope of proposals across subject areas to enable the creation of an integral system of competencies. It will be useful to use the Council of Europe experience related to the introduction of European Language Portfolio (See Annex 4) and implementation of EURYDICE Network (10).

It is important to remember that the process of competencies introduction to curriculum has to occur gradually, i.e. evolve through the discussion and definition of the concept, discussion of key competencies lists, their generalisation, adoption and inclusion into the standards, development of instructional recommendations, and practical application to the educational process.

To avoid the problem of the lack of textbooks and teaching materials based on the competence oriented principle, we would like to propose the elaboration of instructional recommendations to support some teaching materials.

It is proposed that new programs and plans should be worked out taking into account the student performance in the acquisition of key competencies.

B.1. Providing information about a competency-based approach via various teacher training and in-service teacher training systems.

It is necessary to involve the teacher training and post-diploma training institutions in the efficient information and preparation of pedagogues to the introduction of a new competency approach to development and realisation of school curriculum. Before elaborating and implementing educational lecture courses and trainings for higher educational pedagogical institutions as well as qualification upgrading systems, and

renewing the content of the existing topics with the competence ideas, it is necessary to collect and to generalise upon the existing experience of pilot projects as far as the competencies implementation is concerned. It would be desirable to get acquainted with experimental programs and pedagogical approaches, to continuously follow new trends in this area in foreign educational systems. Moreover, it is important to apply a competency approach to the teacher training process. It would allow higher education institutions pedagogues to test the competence approach teaching by themselves. Creation of a series of training workshops using interactive methods and forms could contribute to successful introduction of competence approach ideas to education.

B.2. Incorporation of key competencies into the process of student performance assessment.

The responsibility for the determination, implementation and control of key competence acquisition is to be imposed on the Ministry of Education and Science of Ukraine. It is necessary to take this aspect into account while elaborating a new system of quality education monitoring. Whenever feasible, the system for performance monitoring should be adapted. Since it is difficult to measure all aspects of key competencies with absolute accuracy, it would be practical to create conditions for measuring certain components responsible for the acquisition of competencies by students. The issue of measuring and assessing different levels of key competencies acquisition is currently being raised by foreign pedagogues, but it will take some time before this issue is resolved (EURYDICE, OECD).

6. Conclusion

Having analysed the problem of the discussion, definition and introduction of the competence-based approach in terms of raising the education content quality in the comparative-didactic aspect, we have revealed and suggested necessary ways if its development, which have been reflected in recommendations. It is obvious that in Ukraine, there is a need to start the process of key competencies introduction to education content as is done at the international level for the education quality improvement. It should be noted that in Ukraine there is groundwork for the implementation of the proposed recommendations, i.e.:

- Draft State Standards of the Basic and Complete Secondary Education as well the Basic Learning Plan are being discussed in Ukraine in the press and during different pedagogical events. These documents dictate the need for the acquisition of key competencies by students;
- There is dissatisfaction with the present content of the curriculum among the pedagogical community. It is proved by the results of the opinion surveys conducted at round-tables, seminars, meetings, etc.
- Survey results testify to the readiness of the pedagogues to start a broad discussion of problems of the competencies introduction to curriculum;
- In Ukraine, there are certain achievements within the competencies area (1,5,7);
- The general strategy of our state is aimed at the integration into the European and world community. This is why the process aiming to introduce the competencies system could contribute to Ukraine's advancement to the international level of educational achievements.

7. References

1. Горностай П. Життєва компетентність в умовах обмеженості життєвого світу. /Кроки до компетентності та інтеграції в суспільство. Науково-методичний збірник. – Київ: Контекст. – 2000. – с. 44-47. (Hornostai P. Life Competence under Life Limitation Conditions. /Steps towards Competence and Integration into the Society. Scientific and Instructional Collection of Papers. – Kyiv: Context. – 2000. – P. 44-47).
2. Державна програма "Вчитель». – К.: Редакції загальнопедагогічних газет. – 2002. – 40 с.(National Program "Teacher". – K.: Editing Boards of the General Pedagogical Newspapers. – 2002. – 40 p).
3. Державний стандарт загальної середньої освіти в Україні. Проект. – К.: Генеза, 1997.— с. 13. (State Standard of General Secondary Education in Ukraine. Draft. – K: Geneza, 1997. – p.13)
4. Законодавство України про освіту. Збірник законів станом на 10 березня 2002 року. – К.: Парламентське видавництво. – 2002. – 159 с. (Legislation of Ukraine on Education. Collection of Laws as of March 10, 2002. – K.: Parliamentary Publishing House. -. 2002. – 159 p).
5. Єрмаков І. Педагогіка життєтворчості: орієнтири для XXI століття. /Кроки до компетентності та інтеграції в суспільство. Науково-методичний збірник. – Київ: Контекст. – 2000. – с. 18-19. (Yermakov I. Pedagogics of Life Creation: Benchmarks for the 21st Century. /Steps towards Competence and Integration into the Society. Scientific and Instructional Collection of Papers. – Kyiv: Context. – 2000. – P. 18-19).
6. Освіта України. Нормативно-правові документи. До II Всеукраїнського з'їзду працівників освіти. – К.: Міленіум. – 2001. – 470 с. (Education of Ukraine. Normative and Legislative Documents. For the Second All-Ukrainian Forum of Pedagogical Workers. – K.: Millennium. – 2001. – 470 p).
7. Циба В. Життєва компетентність у соціальній психології. /Кроки до компетентності та інтеграції в суспільство. Науково-методичний збірник. – Київ: Контекст. – 2000. – с. 87 -93. (Tsyba V. Life Competence in the Social Psychology. /Steps towards Competence and Integration into Society. Scientific and Instructional Collection of Papers. – Kyiv: Context. – 2000. – P. 87-93).
8. Definition and Selection of Competencies. Country Contribution Process: Summary and Country Reports. OECD. – University of Neuchatel. – October 2001. – 279 p.
9. Definition and Selection of Competencies. Theoretical and Conceptual Foundations (DESECO). Strategy Paper on Key Competencies. An Overarching Frame of Reference for an Assessment and Research Program – OECD (Draft).
10. Key Competencies. A developing concept in general compulsory education. Eurydice. The information network on education in Europe. – 2002. – 28 p.
11. The Key Competencies in a Knowledge-Based Economy: a First Step towards Selection, Definition and Description. – March 2002. – 26 p.

12. Laura H. Salganik, Dominique S. Rychen, Urs Moser, John W. Konstant. (1999) Projects on Competencies in the OECD Context: Analysis of Theoretical and Conceptual Foundations, SFSO, OECD, ESSI, Neuchatel.
13. OECD: Program on International Student Assessment, 2000. – 3. New Skills for the Learning Society.
14. Spector J. Michael-de la Teja, Ileana. ERIC Clearinghouse on Information and Technology Syracuse NY. Competencies for Online Teaching. ERIC Digest. Competence, Competencies and Certification. – p.1.
15. 14-19: Extending Opportunities, Raising Standards. Summary. Department for Education and Skills. Creating opportunity, releasing potential, achieving excellence. – www.dfes.gov.uk/14-19greenpaper
16. http://www.uvm.dk/asem/reports/asem_thematic_report_3.pdf
17. http://www.statistik.admin.ch/stat_ch/ber15/deseco/intro.htm
18. http://www.eurydice.org./survey5/en/FrameSet.htm
19. http://www.ed.gov/databases/ERIC_Digest/ed456841.html
20. http://www.eurydice.org./Documents/survey5/en/FrameSet.htm

Normative Documents

21. Order of the Ministry of Education and Science of Ukraine of April 25 2001, No. 342, "On Model Curricula of General Education Secondary Schools for 2001/2002 – 2004/2005 Academic Years".
22. Regulation of the Cabinet of Ministers of Ukraine of November 16 2000, No. 1717 "On Transition of General Secondary Education Establishments to New Content, Structure, and 12-Year Education Term"

8. Annexes

Annex 1.

List of Key Competencies in Foreign Countries (Austria, Belgium, Germany, Finland and the Netherlands)

Today, defining the meaning of key competencies involves not only the question of educational content, because it concerns all social spheres of society, which ensure the formation in young people of definite life and work skills. Competencies, *per se,* solve critical life problems as they promote the acquisition of skills at school and open up an opportunity to apply these competencies throughout the individual life. Countries, which have participated in the international DeSeCo Project designed to define key competencies that are instilled in students of general educational schools, and are relevant to challenges of modern society, have defined the list of essential, key competencies, which are characteristic of a given educational system. Let us give some examples reflecting the experience of some of the participating countries.

Thus, **Austrian** pedagogues define the following key competencies:

- **Subject-Matter Competence** – is possible within the context of delivering knowledge and independent application and critical depiction of knowledge;

- **Personal Competence** – the development of independent skills and talents, recognition of personal strengths and weaknesses, self-analysis ability, dynamic skills;

- **Social Competence** – ability to assume responsibility, co-operation, initiative, active participation, dynamic skills). This idea also includes openness to the world and responsibility for the surrounding environment, ability to work in a team (which includes the traditional understanding of the work ethic) and ability to communicate;
- **Methodological Competence** – is a requirement for the development of subject-matter competence. It means flexibility, self-directed learning, ability to solve problems independently, and self-definition.[16]

Keeping in mind the above-mentioned definitions, a new educational program was drawn up in Austria for secondary schools (1999) and five basic branches were outlined, which are based on an inter-subject approach:

- language and communication;
- mankind and society;
- nature and technology;
- creativity and design;
- health and training.

It is necessary to point out that in order to introduce the idea of competencies and ensure their incorporation into the educational process, it was suggested by pedagogues to build their practice in inter-subject work, orientation on team work, individualisation and project orientated work.

Belgium

In determining the meaning of competencies, Belgium experts begin with the definition of criteria, which characterise the competencies as follows:

- multi-dimensionality (combination of skills, opinions, abilities and relations);
- achievability (various content ranges, formal and informal, conscious and subconscious)
- transparency (adaptability in various contexts and situations);
- multi-functionality (for fulfilling various goals and tasks, and solving various problems).

The categories for dividing competencies are:

Social competence:

- active participation in social life, multi-cultural dimension and

[16] Definition and Selection of Competencies. Country Contribution Process: Summary and Country Report. – Uri Peer Trier, – University of Neushatel, October 2001. – p. 72.

- understanding of equal opportunities; communicative competence (including perseverance, ability to be responsible for oneself and mature decision-making): ability to co-operate.

Positive relations: ability to interact positively, trustworthiness;

Ability to Act and Think Independently:

- competence in mastering data bases, IT and communication skills;
- competence in solving problems;
- self-motivated and self-disciplined (including the sense of responsibility);
- ability to think and act objectively.

Motivational Competencies:

- ability to innovate and study.

Mental mobility:

- creativity and innovation;
- flexibility and adaptability.

Functional Competencies:

- linguistic competence;
- technical competence.

Finland

According to Finnish scholars (Otala, 1996), the basic approaches to outlining key competencies can be categorised as follows:

- cognitive competence (knowledge and skills);
- ability to operate in changing conditions and to be motivated;
- social competence (ability to co-operate, solve problems, mutual understanding);
- personal competencies;
- creative competencies (innovative approach);
- pedagogical and communicative competencies (ability to handle information and study)
- administrative competencies;
- strategic competencies (to be forward looking);
- ability to work simultaneously in different directions.

Germany

As a result of public discussion in connection with the above-mentioned project, German pedagogues have defined six types of fundamental competencies:

- intellectual knowledge. This includes the idea of lifelong education;

- skills which can be applied (situational experience, project training, problem-solving in difficult situations, flexible approach to planning and action, self-control);
- educational competence (educational training);
- methodological or instrumental key competencies (application of multi-varied, flexible, highly developed constructions. This also includes the idea of linguistic competence, media and IT skills;
- social competence (social unity, ability to resolve conflicts, co-operation, teamwork and so forth);
- value orientations (social, democratic and individual values, which are achieved thanks to the ability to live in society and to share democratic values). This category should be ensured through the following components of the education program: literature, art, history, music and physical training.

The Netherlands

Key competencies, which were identified by Dutch pedagogues, are closely linked to the understanding of universal values. The following three goals are defined by the Netherlands:

- development of personality;
- development of a responsible citizen;
- specific training for the labour market.
- Thus, on the basis of the named goals, a list of competencies was discussed in the country, with the following competencies defined as the key ones:
- ability to self-study;
- confidence and ability to choose the direction of development;
- ability to act in different situations, to apply different courses of action and to play different roles;
- ability to solve problems: to apply different possibilities, ability to choose various available options, ability to take into consideration a variety of circumstances;
- attraction: to respect others, to be able to compare and to be loyal;
- participation: ability to co-operate and to find creative solutions.

Moreover, Dutch pedagogues distinguish competencies for different stages of life and different age groups. So in training for a job three key competencies are recognised as being mutually independent:

1. **Content/Subject Competencies:** (which are mainly acquired at school and are aimed at rendering the individual capable of fulfilling various types of work). They are important for job recruitment, etc.;
2. **Competencies which are important for future career-making** (e.g. management skills);
3. **Competencies for effective acquisition of new skills.** These are regarded both as basic academic competencies and analytical skills and habits (creative and critical

thinking, ability to study, ability to concentrate, written and oral skills). Basically, these are the most important competencies for effective study in school and achieving career progress precisely when it is necessary to supplement knowledge with the aim of complying with job requirements, achieving professional growth and rising socially[17].

Since the groundwork for success in a future career and professional growth of an individual is instilled in school, Dutch pedagogues believe that the foundation of adequate/appropriate labour market behaviour should be laid down and developed primarily at elementary and secondary schools. Basic ability, which is related to reading, writing, mathematical skills, joint problem-solving, should be acquired at an elementary school and developed at secondary and trade school. Basic and trade school should develop the same skills in different ways. Pedagogues believe the definition/recognition, application and control of acquisition of key competencies should be assumed by the Ministry of Education, Culture and Science (of the Netherlands).

Defining Competencies in Ukraine

The problem of understanding what is meant by life competencies and a competence in general is not new to Ukraine. During the recent decade, pedagogues and psychologists have been applying these notions, extensive discussions have taken place and attempts were made to agree how they should be interpreted. More often than not we meet the term competence in the context of a child's social integration into society, including children with special needs. In defining the philosophy and technology of a child's social inclusion, I. Yermakov, is talking about the formation of life strategies that are absolutely adequate to new social situations. This brings about the need to design a system for the development of life and social competencies. **In the opinion of the author[18], life competence is knowledge, ability and personal life experience necessary for solving life's problems and the productive fulfilment of life as an individual project.** Life competence enables the fulfilment of various roles in life and society by means of a conscious approach.

Another author, P. Hornostai[19], the psychologist, holds a view that the role competence – is the ability of a personality to master psychological roles, to become the competent subject of these roles, to enact role behaviour during the process of personal life activity and life creativity, which enables the fulfilment of various life needs.

A socially competent human being is able:

[17] Definition and Selection of Competencies. Country Contribution Process: Summary and Country Report.-Uri Peer Trier, – University of Neushatel, October 2001. – p. 255-260.

[18] Yermakov I. Pedagogics of Life Creation: Benchmarks for the 21st Century. /Steps Towards Competence and Integration into the Society. Scientific and Instructional Collection of Papers. – Kyiv: Context. – 2000. – P. 18-19

[19] Hornostai P. Life Competence under Life Limitation Conditions. /Steps Towards Competence and Integration into the Society. Scientific and Instructional Collection of Papers. – Kyiv: Context. – 2000. – P. 44-47

- to make decisions pertaining to oneself and endeavour to understand one's own feelings and demands; to block out unpleasant feelings and personal insecurity;
- to know how to achieve goals in the most effective way possible;
- to understand the wishes, expectations and demands of other people correctly and to take their rights into consideration;
- to understand how to behave by taking into consideration certain situations and occasions, whilst paying attention to the interests of other people and one's own demands;
- to be aware that social competence has nothing to do with aggressiveness and that it makes provision for the rights and obligations of others.

In developing the meaning of life competence, Dr V. Tsyba[20], states that recognition of **one's calling, destiny, life goals, the meaning of life and the organisation of life's path is what constitutes the content of life competence**.

Annex 2.

A wider interpretation of the meaning of competence is related to many educational strategic programs. In many economically developed countries, the main tasks set by these programs, which are designed to develop the principal objectives for lifelong learning, include the idea of **culture competence**, which should include:

- developing acquisition of habits and skills for a productive workforce and competitive world economy;
- promoting the development of creativity, innovative thinking and entrepreneurship;
- increasing and expanding the level of active participation in education;
- creating a society which promotes the inclusion of everyone in life;
- increasing teaching and learning standards;
- promoting the creation of social skills;
- promoting the understanding by all citizens of the importance of lifelong learning in different components;
- creating a data base of strategies and measures to promote access to lifelong learning for all citizens;
- providing and applying strategies, which incorporate educational policy, youth training, job recruitment, social interaction and public information[21].

[20] Tsyba V. Life Competence in the Social Psychology. /Steps Towards Competence and Integration into Society. Scientific and Instructional Collection of Papers. – Kyiv: Context. – 2000. – P. 87-93

[21] http://www.uvm.dk/asem/reports/asem_thematic_report_3.pdf

Annex 3

The results of a regional seminar within the framework of the Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" in Ternopil (13 December 2002) included the following recommendations:

- to launch an extensive discussion about how competencies can be formed within education content;
- to organise a large scale integrated course for the realisation of a competency approach in education content;
- Ministry of Education and Science should give up on its monopoly to choose education content.

Options were also offered for structuring key competencies according to three groups:

- health of the individual (health maintenance and healthy way of life, the family);
- professional activity;
- the social aspect.

It was also suggested (by V. Uruskyy, Deputy Director, Ternopil Institute of In-service Teacher Training) that a list of competencies should be drawn up according to the following structure:

1. Competence in the field of economic activity:
- entrepreneurship;
- responsibility;
- discipline;
- work culture;
- pride for the quality of work produced;
2. Legal competence:
- legal culture;
- awareness of the need to abide by the law;
- recognition of equality;
- respect for freedom;
- openness.
3. Political Competence:
- action and mobility;
- civil action;
- respect for majority decisions;
- concern for civil affairs.
4. Competence in the sphere of communications:
- tolerance;
- promotion of pluralism;

- ability to defend personal convictions in a civilised manner in the face of opposition.

5. Organisational Competence:

- rational management (self-management);
- effective management;
- economical use of time and other resources.

6. Technological competence:

- able use of technology (mass media);
- rational coexistence within the techno-sphere;
- objective attitude regarding the techno-sphere.

7. Environmental competence:

- knowledge of environment law;
- harmonious environmental coexistence;
- biosphere protection.

8. Competence in everyday life:

- respect for others;
- co-existence skills;
- readiness to help;
- concern for the ethics of the surrounding life space.

It was also suggested that the four groups of social competencies should be singled out, which school graduates should possess:

1. Political-Legal:

- knowledge of legislative framework;
- knowledge of the principles of how the political system and state power function;
- formation of democratic civil positions;
- legal responsibility;
- participation in political life.

2. Culturological:

- formation of culture of interpersonal relations;
- proficiency in the national and world culture heritage.

3. Social:

- system of social relations;
- motivation of social behaviour;
- acquisition of social habits.

4. Economic:

- understanding the meaning of market relations;
- understanding basic economic relations;

- understanding the system of social protection;
- system of social well-being;
- formation of professionalism and professional ethics;
- economic habits.

5. Personal Life:

- habits for building strategies and programs for life;
- models of constructive behaviour;
- models for psychologically well-adjusted lifestyles;
- models for dealing with critical situations and overcoming crises in life;
- models for optimal behaviour/socialising/co-existence;
- models for self-improvement.

Annex 4

The activity of the Council of Europe is based on many years of experience of developing and implementing educational projects, which support multicultural traditions. For example, one of the most successful and effective projects turned out to be the development and implementation of the European Language Portfolio designed to promote language study and the introduction of a language policy by EU member countries. The study of European languages has become a strategic aim not only abroad but in Ukraine too as stated today by the National Doctrine for Education Development.

In light of this project and policy of the European Language Portfolio, the Council of Europe declared September 26, 2002 as a European Language Day. Its was aimed at drawing people's attention to the importance of studying different languages, improving everybody's understanding of the value of languages in Europe and promoting the introduction of a policy for lifelong language learning. The theme of the year 2002 was Lifelong Language Learning. Such events encourage tolerance among citizens of Europe where nearly 200 languages are spoken and population consists of people originating from different continents. Essentially, it is the language and culture of an ethnic group that are considered to be of the highest value and the richest resource for respect, understanding and development of any nation. Studying the languages of different nations is a path to support mutual understanding and respect for cultural and ethnic variety.

Since in today's Ukraine, schools, teachers and wide public express their readiness to accept such initiatives, (when acquisition of civil values is the aim of education), proposals for introduction of the positive experience of foreign specialists may become a significant contribution to the educational reform of Ukraine and, which is of particular importance, may promote the integration of Ukraine into the multicultural European and world community.

The introduction of a European Language Portfolio is accompanied by innovative methods for the acquisition of knowledge, skills and values by the contemporary youth and the use of modern pedagogical techniques. The practical experience of European educational circles in terms of the creation of the European Language Portfolio is producing positive results. Testing of proposed techniques at different stages shows today that owing to these proposals it is possible to create the conditions for schoolchildren' acquiring, gradually and by stages, necessary competencies.

The concept of the European Language Portfolio was formulated over the course of the past decade. The Council of Europe experts from the European Language Portfolio Department worked on this since 1998 to 2000. Methods for introducing the European Language Portfolio presuppose:

- increased mutual understanding and tolerance among European citizens;
- support and introduction of linguistic and cultural diversity;
- introduction of linguistic competence and inter-cultural learning for multilingual proficiency through the development of educational responsibility and autonomy;
- clear and accurate introduction of competencies and qualifications for easier language learning and mobility in Europe.

Annex 5.

Involvement of EU member States in Large-Scale International Studies on Educational Attainment since 1994-2002.

Key Competencies. A Developing Concept in General Compulsory Education. (Eurydice. The information network on education in Europe., 2002.- p.27.)

International Assessment survey		Conducted by	Reference Year	Knowledge, skills and competencies surveyed	Age group concerned	Belgium (Fr.)	Belgium (Germ.)	Belgium (Nl)	Denmark	Germany	Israel	Spain	France	Ireland	Italy	Lithuania	Netherlands	Austria	Poland	Finland	Sweden	Great Britain	Scotland
CIVED	Civic education	IEA	1994-2002	Civic education	14, 16-18	•			•	•	•				•		•		•	•	•	•	
IALS	International Adult Literacy Survey	OECD, Statistics Canada	1996-1998	Reading and writing (literacy)	Adults 16-65			•	•	•				•	•		•			•		•	•
TIMSS-R	Third International Mathematics and Science Study Repeat	IEA	1997-2000	Mathematics, Sciences	9,13			•	•		•	•	•	•	•		•	•	•	•		•	
PIRLS	Progress in International Reading Literacy Study 2001	IEA	1999-2003	Reading literacy	910					•	•		•		•		•				•	•	•

PISA	Program for International Student Assessment	OECD	2000	Reading, mathematics, and science literacy **Cross-Curricular Competencies**	15	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
TIMSS	Trends in Mathematics and Science Study	IEA	2000-2004	Mathematics, Sciences	9,13			•	•		•	•			•		•				•	•	•
ALL	Adult Literacy and Life skills Study	OECD Statistics, Canada	2001-2002	Literacy, Numeracy, Analytical Reasoning/ Problem-solving, Teamwork, ICT literacy	Adults 16-65			•							•		•	•					
PISA	Programme for International Student Assessment	OECD	2003	Mathematics, Reading and Science literacy, **Cross-Curricular Competencies**	15	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
PISA	Programme for International Student Assessment	OECD	2006	Science, mathematics and reading literacy **Cross-Curricular Competencies**	15	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		

Pavlo KHOBZEY

Equal Access for Children to Primary Education

1. Executive Summary

The principle of equal access to quality education presumes the provision of equal opportunities for all children to receive education in any state secondary school. Unfortunately, today after giving schools considerable autonomy in the decision- making process cases of a selective approach to school student intake are beginning to emerge. This situation is exacerbated by the fact that parents are expected to pay additional fees for children attending such schools and their remote location from students' homes. This limits the right to education in the best state schools for students from low income families. In particular this concerns specialized educational institutions which have innovative and wide-ranging teaching programmes paid for by the state but at the expense of the right to equal access to a high standard of education for children from low income families.

The problem of equal access to quality education for children from low income families at the primary school level is a result of many factors, including the following:

- early selection of children to primary school, mainly in so called "elite schools"[22], conducted through interview and tests;
- additional fees parents are expected to pay at elite schools;
- the location of elite schools primarily in large cities or central municipal micro-districts; and
- consideration of the parents' social status when children enter school.

The research conducted within the framework of the second stage of the Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction"[23] provided an opportunity to suggest the following policy options for solving the problem:

Policy Option A. Formulation of a municipal-level action plan to support and develop schools with a low standard of education.

[22] The term "elite school" is used in the research. These schools include specialized schools, gymnasia, lyceum and colleges

[23] At the first stage of the project (2001) technical support to develop an educational reform strategy was provided to the Ministry of Education and Science of Ukraine. At the second stage (2002) the project work focused on drawing up recommendations for implementation of actual tasks identified by the National Doctrine for Educational Development

Policy Option B. General secondary school reorganization with the separation of six-year primary schooling (Grades 1-6) from secondary schooling (Grades 7-12) where primary school intake occurs within the school catchment area.

2. Introduction

The idea of equal access to quality education is based on the principles of fairness and the right to make a choice. As Ukraine's Law on Education states "citizens of Ukraine have the right to receive education in state educational institutions free of charge regardless of gender, race, nationality, social and financial status, specialization, philosophy, party membership, religious preferences, state of health, place of residence and other reasons" (3,4).

In practice, in spite of the assurance of equality in state educational funding, talented children and children who live in a good home environment still remain better off. That is why educational administration specialists believe that the state should regulate the processes necessary to compensate for any differences in circumstances of various social groups (9).

In Soviet times every city had several schools to which the Party elite sent its children. As a rule, these schoolchildren were given the opportunity to study certain subjects intensively with emphasis on foreign language study. It should be noted that there was hardly any competition to enter these schools. The lack of competition to enter these schools meant that children living in the same neighborhood or catchment area could also study there.

After Ukraine gained independence, different types of schools began to emerge: gymnasia, lyceums, colleges and different types of private schools. The elimination of the Iron Curtain and the opportunity to communicate with the whole world made foreign language study popular, if not necessary. The network of specialized schools with emphasis on early foreign language study began to grow as a result of this. This process can be seen as a positive phenomenon in education bringing as it has the development and introduction of new curricula, teaching materials and new teaching methods among other things.

It should be noted that local authorities traditionally supported these initiatives and promoted the creation of equal opportunities for all children. In the early 1990s, government officials were concerned not so much about how to find money but how to spend so called "limits" provided by the state.

In the summer of 1996 Government officials began, for the first time, to take a serious look at the process of how to allocate funds for education within local budgets, when on 30 August 1996 instead of the usual doubling of the educational budget, the Cabinet of Ministers issued Resolution No. 1033 ordaining that on-budget expenditures, including those for education, should be cut. The figures for number of students per class were fixed at the same level as the 1990 figures.

However, this did not stop the creation of new types of schools, including specialized schools, since the budget continued to be prepared on the basis of the historical principle of precedent, i.e. depending on the previous year's figures with one school being funded not at the cost of other schools but by increasing educational expenditure. Elite school costs were rising due to the increased number of school hours per week in standard

classes and classes being split into groups. Meanwhile the student numbers per class were limited which meant that funds could be injected into the development of the school and teaching process. Often parents provided additional funds on a private basis. This resulted in an increase in the cost of education in the above-mentioned schools in comparison with ordinary schools.

The difference in the cost of education is determined by the different types of curricula. As a rule, instruction in specialized schools, gymnasia and lyceums is based on a six-day week curricula (in ordinary schools – a five-day week). Additional fees are paid where classes are split into two groups for more intensive study of certain subjects. In addition, these schools tend to have a larger number of staff members with additional deputy principal, laboratory assistant and, in some gymnasia, class counselor/mentor positions.

Aside from the financial aspects, the problem lies in the selective approach adopted by elite schools for enrolling children. As previously noted, the closed entrance examination procedure followed by the majority of elite schools makes it difficult for children from low income families to gain access to education in these schools.

Finding a solution to this problem should contribute, above all, to the consolidation of Ukrainian society and the realization of the key principle of the National Doctrine for Development of Education – equal access to a high standard of education. Equal access to quality education will in turn help the development of Ukraine's human capital.

3. Problem Analysis

3.1. Current Legislation

Ukrainian legislation in force includes a series of regulations that determines the admissions procedure for children to general secondary school. In particular, the Order of the Ministry of Education and Science No. 365 of 6 May 2001 "On the Admission of Children to Grade 1 of General Secondary School", paragraph 2.1, says that "children shall be admitted into Grade 1 of a general secondary school, owned by a municipality, on a noncompetitive basis in accordance with the district it services. Children that are not serviced by the general secondary school territorially may be admitted hereto if vacant places are available in the classes" (4, 145).

Paragraph 2.6 then states that, "in admitting a child to Grade 1, no entrance exams, tests, interviews or examination of the child's knowledge of subjects are allowed." (ibid). This means that all children regardless of their circumstances and social status have the right, according to the Law of Ukraine on General Secondary Education, to be admitted to general secondary school on a non-competitive basis.

It should be mentioned that this Order applies to general secondary schools that service a micro-district or neighbourhood unit in terms of general education. Under item 3, clause 5 of the Guidelines for Registration of Children and School-Age Teenagers, local government bodies "shall designate neighborhood units to be serviced by general educational institutions and assign them to these neighbourhoods by an appropriate decision, except for gymnasia, lyceums, colleges, private schools and specialized schools with emphasis on the study of certain subjects from Grade 1" (6, 98).

Thus, today under the Law of Ukraine on General Secondary Education in Ukraine besides the general secondary school (I-III levels) there are other types of educational institutions. They are the following:

- specialized schools (boarding schools) – these are I-III level educational institutions with intensive instruction in certain subjects and courses;
- gymnasia – these are II-III level educational institutions with intensive instruction in subjects according to profile;
- lyceums – these are III level educational institutions with profile education and professional training (6,106).

Specialized schools, gymnasia, lyceums[24] and colleges have, as a rule, no neighbourhood units assigned to them and may admit children from the entire city. When the number of applicants for places at a specialized school is in excess of its licensed capacity, certain selection is simply unavoidable. Criteria, by which some children are admitted to a given school and others are not, need to be established in order to solve this problem.

It should be noted that the aforementioned law does not allow classes of one general secondary school to be formed on the basis of a child's readiness for study. However, this rule is not complied with in some cities.

An analysis of the situation shows that there is a mismatch between the primary school admission procedure declared by the law and current practice that is applied in schools. This concerns, above all, elite schools – lyceums, gymnasia and colleges.

3.2. Funding Approaches

The effective application of regulations on school student numbers, school administration and organization of teaching procedures depends to a large extent on financial aspects. A study of the approaches used to fund different types of schools that was conducted in Lviv in 2001 within the framework of the LARGIS Project, shows that the cost of training one student in an ordinary general secondary school was 1.4 times lower than in an elite school. In some schools the number was as much as 1.9 lower. (5)

[24] Though in the aforementioned law, the legislator has made no provision for gymnasia and lyceums to have a primary school within their structures. The reason for such mismatch can be explained by the fact that gymnasia and lyceums have been created due to the restructure of general secondary schools that had a primary school within their structure.

Figure 1. Difference in the Cost of Training One Student in Different Types of Schools

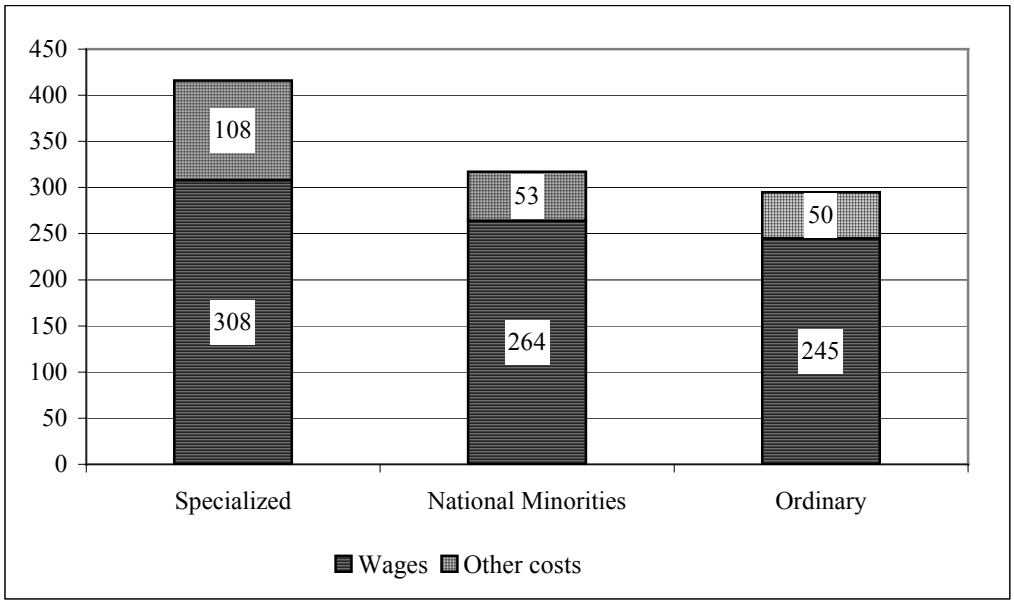
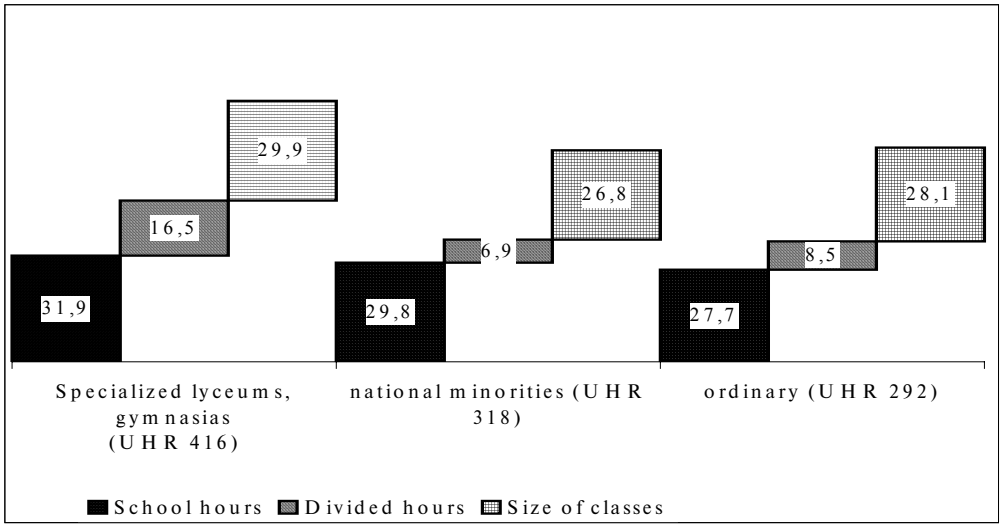


Figure 1 shows that the maintenance and development costs of elite schools are twice that of ordinary ones. What can be inferred from this is that elite schools are financed selectively.

Apart from this the remuneration of labour differs also. Figure 2 shows the three basic components that impact the size of the payrolls fund and thus the cost of training of one student. This includes: the number of students per class; the number of school hours per week according to the curriculum; and the number of hours where a class is split into two or three groups.

Figure 2. Differentials in Remuneration of Labour in Different Types of Schools



As is seen from Figure 2, the number of students per class in elite schools is higher than in ordinary ones owing to greater demand. At the same time, the higher number of school hours is split among classroom groups, and curricula with a higher number of school hours are used. As previously mentioned, elite schools have the right to increase their staff numbers.

Under the Budget Code of Ukraine (1), funds for general secondary schools are to be allocated by administrative units in accordance with student numbers without allowing for the type of school a student is attending and the money spent on education in the previous year. Elite schools, where the cost of education is higher, therefore, will be financed through the re-allocation of funds from general secondary schools or funds for pre-school institutions.

The Budget Code sets forth clear-cut rules for budget development at micro level. Local government bodies or district (*rayon*) councils are empowered to allocate the funds themselves in accordance with their priorities. Insofar as the rules for allocation of funds among educational institutions are not yet in place, most local governments develop school budgets depending on the funds spent in the previous year. In other words, if the cost of education of one student in one of the schools in the previous year was higher, the same will be assumed the next year too.

Under these circumstances, it is necessary for local governments to develop a fair mechanism for budget planning to prevent inequality of funding of different types of schools.

3.3. Existing Practice of Student Admission to Different Types of School[25]

A comparison of the distribution of second graders according to their social status in ordinary secondary schools and elite schools in a district (rayon) of Lviv shows that students from low-income families usually study in ordinary secondary schools.

Table 1. Social status of families with children studying in different types of school in Lviv

Social Status of Parents	Elite Schools	Ordinary Secondary Schools
Labourers	34%	43.2%
Unemployed	18%	35.5%
Educational and cultural workers, engineers	18%	6.4%
Physicians	10%	4.7%
Managers	8%	1.7%
Public officials	7%	4.7%
Business people	5%	4.4%

Table 1 shows that if we put the unemployed, labourers, educational and cultural workers, engineers and physicians in the category of low income families, 80% of pupils in schools that service the neighbourhood unit come from low income families whereas in elite schools the percentage of pupils from such families is much lower.

This difference is even more striking in the city of Kyiv. In one of the best specialized schools in Kyiv Shevchenkivskyy district, the parents of a random selection of second graders were grouped as follows:

- directors – 4;
- public officials – 6;
- managers – 6;
- engineers – 5;
- physicians – 2;
- artists – 1;
- unemployed – 1.

A prestigious school in Kyiv Pecherskyy district, which enrolls some 1,500 students, has a neighborhood assigned to it for general educational purposes. But only 150 of 400 children, who live in this catchment area, attend this school. The remainder goes to an ordinary school. There are two possible explanations: the difficulty of studying here (many

[25] The conclusions in this paragraph are based on data from research done in Lviv, interviews with several principals of elite schools in Kyiv and Lutsk and the results of a survey conducted by the Social Monitoring Centre.

foreign languages are taught here) and high school costs (money is required for textbooks, excursions and various events). The parents of elite school students are mostly public officials and business people.

In Lutsk, the parents of students at specialized schools are mostly physicians, further educational teachers and lawyers.

This picture is to be observed throughout Ukraine. Elite schools are attended predominantly by children coming from wealthier families and families where parents have a better education.

3.4. Reasons for the Problem

The Social Monitoring Centre conducted a survey in all regions (*oblasts*) of Ukraine, the Autonomous Republic of Crimea and the city of Kyiv within the framework of the Human Development Index: Ukraine Project (November 2002). A total of 3,057 respondents were questioned. One of the questions was: "What do you think, above all, can prevent all children in your community from obtaining a high quality secondary education?"

Table 2. Results of the Survey Conducted by the Social Monitoring Centre

Types of Answers	Percentage
In good schools, you have to pay extra for study	34%
Good schools are few and located far away from home	31%
You have to give a bribe to be enrolled in good schools	13%
To enroll in a good school tests have to be taken	5%
Other	17%

The primary reason for unequal access to high quality primary education, as seen from Table 2, lies in additional financial expenditures, distance and entrance examinations.

Thus, the first reason for unequal access to high quality primary education is the need for families to pay extra for an elite school education. The payment depends on the region and school specialization. The cost of education could reach some hundred hryvnias.

The second reason is distance. An elite school is not always situated conveniently near home. More often than not, a poor family can only choose from a small number of schools situated near its home because of the high cost of transport and the inability of parents to accompany a little child on the school journey. That is why such families have to use the available educational services offered by local accessible schools without any guarantee of a high standard of teaching.

The third reason given is related to the need to take preliminary tests prior to admission to Grade 1 of elite schools despite the fact that preliminary tests or exams make no sense from a pedagogical point of view. It is quite obvious that the aim of preliminary tests is to evaluate the influence of the environment in which children were brought up

during the first years of their life. So, in other words, it looks like parents rather than the children are in competition against each other.

The contemporary problem of general secondary school differentiation levels could also be a factor that influences the existing situation. The problem lies in formation of first grade classes that are based on a child's developmental level. In other words, after children have passed entrance examinations, one or two classes for gifted children are created on a parallel basis. Classes like these are called "gymnasia classes" and contravene Ministry of Education and Science of Ukraine regulations. The best teachers provide extracurricular tuition in these classes that require additional funds from the state budget and/or parents.

It must be noted that the situation that has developed reflects the interests of some stakeholders. To begin with this means the parents who quite naturally wish to improve the conditions in which their children study and organize this process in a way most beneficial to the child. They do after all possess the right to choose a school for their children.

Secondly, schools are also interested in admitting and training children with a high level of development, as elite schools do not service neighborhood units for general educational purposes and may transfer weak students to an ordinary school.

Thirdly, many decision-makers reasonably believe that budget funds should be allocated where they will be beneficial, i.e. to help the most advanced and talented students.

3.5. Forecasting Further Development

T. Sergiovanni, a well-known American theorist in the field of educational administration, points out that "supporters of the 'elite approach' to education do not want to give the right of control over their own fate to somebody else. What should be taught, who should be taught and how to finance school education are decisions that they do not want to give up. Then this leaves one of two options: either to leave state school and transfer to a private one, or to convert state schools so that they resemble private schools. In any event, fairness will suffer from negligence in the fight for quality" (8, 25).

As this argument is applied to the situation throughout Ukraine today the existence of certain aspects of state school privatization are becoming more obvious. As previously mentioned, parents pay extra fees for educational services provided in "gymnasia classes" of ordinary schools and elite schools. These services include small student numbers per class and supplementary lessons (in foreign languages, computer sciences, choreography, sport, etc) among other things. In fact it is quite common for private classes (available at extra cost) to be held in state–owned secondary schools, while some state schools de facto are becoming semi-privatized. The worst thing is that within the framework of the same school children are being divided into the privileged (lit. the rich) and unprivileged (lit. the ordinary).

In analyzing the dynamics of the development of the problem it should be noticed that insofar as the number of students from rich families in elite schools is rising every year a situation is developing where these children are beginning to receive bigger financial support for education (budget funds, sponsorship and charity funds, parent fee payments) than those from low-income families.

In the event that current policy remains unchanged, the existing school division in terms of quality of education will become an ever increasing reality. Children from low-income families will not have the opportunity to enter better schools that will become partially or completely privatized, while education provided by them will require additional private funding from parents. Thus the principle of equal access to quality education declared by the National Doctrine for Development of Education will not be fulfilled.

4. List of Policy Options

The research aimed at analyzing the problem of equal access to primary quality education has enabled us to suggest the following policy options:

Policy Option A. Formulation of a municipal-level action plan to support and develop schools with a low standard of education.

Policy Option B. General secondary school reorganization with the separation of six-year primary schooling (Grades 1-6) from secondary schooling (Grades 7-12) where primary school intake occurs within the school catchment area.

5. Description of Policy Options

5.1. Policy Option A

Formulation of a municipal-level action plan to support and develop schools with a low standard of education.

To make this a truly successful and viable plan, it is necessary to interest school faculties, parents and student, to establish links between schools and local communities, to set up school boards and involve local community representatives who are not directly connected with school activities.

Obviously any school development plan requires additional funds for implementation. If the school is unable to obtain the necessary funds, the city or town councils should allocate them. Money should be allocated for additional salaries for teachers that provide training support to those who need it, as well as the salaries of social teachers working with dysfunctional families. Additional funds should also be allocated for teaching aids, equipment and the professional development of teachers. Expenditure for implementing the improvement plan of a selected school, or selected schools, can be calculated when the necessary sum is taken from the budgets of all schools as a single percentage and channeled into a particular selected school or several selected schools.

The quality of education is particularly important at primary school level, when the groundwork for further successful training is provided and the standard of pre-school preparedness of children from different families is set at an appropriate level. As document (3) states “basic education should enjoy a top priority right to receive educational funds for at least two reasons: first, a sound basic education forms the basis for further education, and second, deterioration of education at this level has a strong effect on the level of poverty.”

Thus, primary school curricula need to be unified (art schools and sport schools should be exempted). It should be noted that the Ministry of Education and Science of

Ukraine is working toward this by introducing, for instance, foreign language study in primary school curricula starting from Grade 2.

A second step in this direction needs to be made: to unify primary school curricula within the framework of different types of schools that currently exist; to abolish admission of children to Grade 1 on a competitive basis and to use the capacities of extracurricular institutions to encourage the development of gifted children.

The first stage of this strategy realization is to produce a self-appraisal of the quality of school activity by questioning teachers, students and parents in regard to school problems (2). It is very important that teachers, parents and students themselves are aware of existing problems and the reasons that are preventing them from being dealt with. Many specialists consider self-appraisal a very productive method that makes teaching staff recognize deficiencies in their work rather than governing bodies. During the course of discussing school problems parent-teacher organizations or groups can be formed in order to plan the process of school development. It would also make sense to involve independent representatives from the local community (ex-boys and girls, enterprise heads, local council heads and MPs) in this process who could then in future sit on special school council boards.

5.2. Policy Option B

Fundamental general secondary school reorganization with the separation of six-year primary schooling (grades 1-6) from secondary schooling (grades 7-12) where primary school intake occurs within the school catchment area.

Education at primary school should be directed toward ironing out the disparities that are caused by the social status of children's families. Natural abilities and disposition along with diligence should have an effect on the future career of children and it is the authorities' responsibility to develop conditions necessary for this.

This can be achieved through the separation of primary education from secondary education which provides the opportunity to continue further education or acquire basic professional skills. It is suggested that the primary curriculum be extended for another two years structurally separating it from secondary school.

There are several reasons for extending the primary education period for two years. Firstly, this corresponds to certain stages of a child's mental and physical development. Fifth graders differ little from fourth graders in terms of their development. In fact, changes take place in Grade 7.

Secondly, compulsory educational systems in most European countries include primary (5-6 year curriculum), basic and senior school, which effectively operate as separate institutions. As seen from foreign experience, implementation of the suggested policy option in Ukraine could help in optimizing primary school work.

Thirdly, propaedeutic education takes place in Grades 5 and 6. Instruction in the basics of science begins in Grade 7. The suggested policy option could logically determine the propadeutic stage of education.

Fourthly, seventh graders can make their own way to school as opposed to fifth graders.

All grades of primary school should be formed in parallel without any streaming (for example, alphabetically) and an equal amount of money should be allocated for every child unless a child has special needs. This will provide equal starting opportunities.

The necessary condition is the equal cost of education in all primary schools and assured unification of curricula at primary school level. Students will be able to develop their talents in extracurricular institutions.

Obviously, option B necessitates amendments to the Law of Ukraine on General Secondary Education, which clearly defines the structure of the general secondary school system.

6. Conclusion

The problem of equal access to quality primary education has become a very urgent one especially at the current stage in Ukraine's development. This problem necessitates the search for a variety of possible solutions. "When children from poor families are unable to emulate children from wealthy families, they often suffer from depression and fall under the influence of offenders: alcoholism and unemployment are common for them. Bad conditions and access to a low standard of education stand in the way of fair competition with wealthier children" (2).

The policy options suggested in the given research will promote the creation of special conditions for children from low-income families to obtain education in schools with a high standard of education. Further discussion about the suggested policy options with all stakeholders will help to achieve a reliable evaluation of their positive and negative aspects as well as the best mechanisms for their implementation.

7. References

1. Бюджетний кодекс України від 21 червня 2001 року. – К.: Атіка, 2001. – 80 с. (The Budget Code of Ukraine of 21 June, 2001. – K.: Atika, 2001. – p.80).
2. Вандайк Н. Доступ бідних до освіти в Європі та Центральній Азії.-Технічний документ Світового банку №511.- 36 с. (N. Wandyke. Access of the Poor to Education in Europe and Central Asia. – Technical Document of the World Bank. No 511. – P.36).
3. Законодавство України про освіту. Збірник законів. – К.: Парламентське вид-во. – 2002.- 159 с. (Legislation of Ukraine on Education. Collection of Regulatory Documents. – K.: Parliament, 2002. – 159 p).
4. Збірник нормативних документів загальної середньої та дошкільної освіти. – Міністерство освіти і науки України. – К. – 2002. – 262 с. (Collected Regulatory Documents On General Secondary and Preschool Education. – Ministry of Education and Science of Ukraine. – K., 2002. – p. 262).
5. Левітас Т., Герчинський Я. Освітня політика і фінансування у Львові: стратегічні пропозиції./Програма LARGIS, К. – 2001. – с.166-189. (T. Levitas, Y. Gerchinsky. Education Policies and Financing in Lviv: Policy Proposals. LARGIS Program, K. – 2001, – P.166-189).

6. Освіта України. Нормативно-правові документи. – К.: Міленіум. – 2001. – 472 с. (Education of Ukraine. Regulatory and Legal documents. – K.: Millenium, 2001. – 427 p).
7. Оцінювання якості роботи школи. Порадник. – Львів: ЛМГО "Інститут політичних технологій". – 2001. – 102 с.(Assessment of the Quality of School Activity. Manual. – Lviv: LMGO the Institute of Political Technologies, 2001. – p.102).
8. Серджовані Т., Барілінгейм М., Кумз Ф., Тарстон П. Керування освітою і шкільне врядування. – Львів: Літопис. – 2002. – 440 с. (Serjiovanni T., Barilingeym M., Kumz F., Tarston P. Education Administration and School Self governance. – Lviv: Litopys, 2002. – 440 p).
9. Стігліц Дж. Економіка державного сектора. – К.: Основи. – 1998. – 854 с. (Stiglits D. Economy of Public Sector. – K.: Osnovy, 1998. – 854 p).

Oksana OVCHARUK

Profile Education in Upper Secondary School

1. Executive Summary

The educational reform process in Ukraine, today, goes hand in hand with the modernization of school programmes, governance sector reform and reconstruction of the entire system of education. The organization of secondary school education is currently changing, especially at the upper secondary school level where the question of profiling has become a topical issue.

Problem

The present situation at secondary school level testifies that many school leavers are limited in their choice of a career due to the fact that their qualifications do not correspond to higher educational or labour market requirements. ***The problem is in the lack of opportunities to adapt the secondary educational curriculum to the future demands of students due to the absence of profile education in general secondary school.***

In our opinion, this problem is linked with several factors including an imperfect legislation base, an insufficient number of well-trained teachers and the hesitancy of educational authorities in mechanisms of upper secondary profile school introducing.

At the same time there is a wide network of different types of educational institutions (lyceums, gymnasia, colleges, etc.,) that are in great demand today in the country. These institutions provide the chance to obtain a sound education in different subject areas. The popularity of gymnasia and lyceums is evidence of the need in our society for profile education. Students planning to enter higher educational institutions and those wishing to obtain a high standard of education in comparison with that available in ordinary general secondary schools, choose schools and classes with comprehensive programmes for a variety of subjects. However, access to so-called elite schools and educational institutions is rather limited. To enter these elite schools, for example, a six-year-old child is expected to give an interview on the basis of which his/her level of knowledge is assessed before being admitted. This creates obstacles for equal access for all children to a high standard of education.

Certain changes are currently taking place in Ukraine in terms of creating the conditions necessary for the implementation of the principles of educational differentiation. Stakeholders and the educational community have embarked on the discussion about profile upper secondary school implementation. In order to prepare the grounds for profile upper secondary school in Ukraine it is necessary to compare both our own achievements and the progressive experience of other countries. The world possesses a great deal of experience in organizing profile education in upper secondary school. Today, there are several approaches to the profiling and differentiation of upper secondary school in Europe. Among them: a) different types of schools (France, Italy); b). profile education

(programmes) within the structure of an entire school (Sweden); c) a common curriculum during the first years of education in different types of upper secondary schools that becomes more profiled during the last period of education (the Netherlands).

Possible recommendations:

Recommendation A. Creation of a platform for profile education in Upper Secondary School implementation in Ukraine.

Recommendation B. Implementation of Profile Education in Upper Secondary School (Grades 10-12).

Policy option B1. Profile education organization by means of the development of a network of different types of schools (gymnasia, lyceums, colleges etc.)

Policy option B2. Profile education organization in upper secondary school within a network of different types of general educational institutions.

2. Introduction

Extensive reform is currently underway in the Ukrainian educational system. The search for ways to solve many problems existing within the educational sector – the development of new educational standards, the transition to a twelve-year system of education, the review and elaboration of new educational programmes – is underway. Among the various problems requiring urgent solutions today is the problem of providing education to every child according to his/her abilities, talents and preferences, while taking into consideration future prospects in terms of further education, job opportunities and the chance to lead an active life. Today, at secondary school level young people have unequal access to a high standard of education in different profiles and after leaving school have limited opportunities: often, their choice of profession remains narrow since the level of education received does not always meet to higher educational requirements nor the demands of the labour market. ***It is an obvious fact that the contemporary secondary school curriculum is insufficiently adapted to students' future needs as a result of the lack of a profile educational system in secondary school***.

Often, students of school-leaving age do not attend or do not wish to continue to attend school because of the requirement to work with tutors or to attend preparatory courses in order to enter higher educational institutions. These students, as well as their parents, believe general secondary school to be a waste of time. All of this points to the need to implement an entire system of profile education (upper secondary school differentiation system) in Ukrainian upper secondary schools.

The National Doctrine for Development of Education emphasizes that a variety of different types of educational institutions and programmes, as well as a diverse and individual approach to learning, should be made available. This necessitates the introduction of profile education at upper secondary school level both in general educational institutions and vocational schools. The current situation in the labour market requires new approaches to the organization of education at upper secondary school level and its urgent restructuring – to be precise, the creation of a profile school system that complies with European standards and the demands of society.

Vasyl Kremen, the Minister of Education and Science, in his interview with *Osvita Ukrayiny* newspaper, pointed out that, today, in Ukraine, some steps have already been taken in profiling upper secondary schools, in particular by:

- increasing the number of hours for foreign language lessons in Grade 3 of secondary schools;
- allowing 50 specialized lyceums to function in Ukraine (in 2003); and
- opening lyceum-boarding schools for gifted children from rural areas attached to higher educational institutions in regional centres of Ukraine.

Ii is planned to develop an integrated multi-disciplinary, multi-level system of different types of specialized extra-curricular institutions that could help gifted children and young people to develop their abilities and talents in extra-curricular education.

The National Doctrine for Development of Education also anticipates the provision of diverse and flexible educational programmes for vocational education and training that take into account labour market innovations and the demands for new professions.[26]

It is worth noting that the National Standards of General Secondary Education Draft (approved by the Ministry of Education and Science in October 2003) also foresees certain aspects of the transition of modern secondary school (upper level) to profile education. This document defines several profiles of different education areas.

Results of surveys held during regional seminars within the framework of the UNDP Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" (December 2002) in Mykolayiv, Ternopil, Luhansk and Cherkasy show the importance of upper secondary school profiling discussion. For instance, 85% of the respondents-representatives of the pedagogical community, administrators, and teachers were in favour of the idea of developing profile programmes in upper secondary school. This is particularly important in view of the transition to a twelve-year system of education which started in 2001.

The aim of this research is to analyze the correspondence of the current upper secondary school curriculum to the requirements for introducing profile education; to analyze the foreign experience in approaches to differentiation and to make proposals on possible ways of introducing profile education in Ukraine taking into account possible drawbacks and problems that can be encountered by home experts.

3. Problem Analysis

3.1. The Problem of Profile Education Organization at Upper Secondary School Level in Ukraine

The situation that has developed in Ukraine in recent years with regard to preparing secondary school students for further education and professions shows that opportunities available to school leavers in terms of higher education or job recruitment are limited. It means that on the one hand there is a need for introducing several academic profiles (in

[26] Decree of the President of Ukraine "On the National Doctrine of the Development of Education"/ "National Doctrine of the Development of Education in Ukraine" dated 17/04/2002. No. 347/2002.

Physics, Mathematics, Biology and Humanitarian Sciences) and, on the other hand, for introducing professional profiles for mastering future professions in the fields of accounting, medicine, agriculture, and so on. Despite the fact that there are 1,500 job training specialties available in Ukraine's educational institutions (for example, in Hungary meanwhile, the systematization and aggregation of middle level specialties into 15 groups has taken place) it fails to meet the demands of the present-day labour market. Some of these professions are not popular among young people; others require a great amount of resources and constant curriculum renewal to a high standard. What is more, VET institution graduates, having received a specialization, cannot always find a job that satisfies them.

This situation is caused by an inadequate analysis of the correlation between labour market demands and specializations provided both by educational institutions preparing specialists and general secondary educational institution programmes which should take into account these demands even in school.

The secondary school curriculum is not adapted to the future needs of students because of the lack of a comprehensive system of profile education at upper school level. The possibility of receiving profile education in Ukraine is rather limited for the majority of students, especially in rural areas. However, 70% of citizens aged between 6 and 24 receive education in educational institutions of different types and forms of ownership[27]. There is a network of specialized general secondary institutions in Ukraine including gymnasia, lyceums, collegiums, etc (12). Table 1 shows the dynamics of school network development in Ukraine for different types of schools from 1998 to 2001[28] :

Type of school	**1998**		**1999**		**2000**		**2001**	
	City	**Village**	**City**	**Village**	**City**	**Village**	**City**	**Village**
Gymnasia	222	2	233	3	265	8	298	14
Lyceums	197	9	200	8	224	8	235	20
Collegiums	18	2	22	4	19	6	22	5

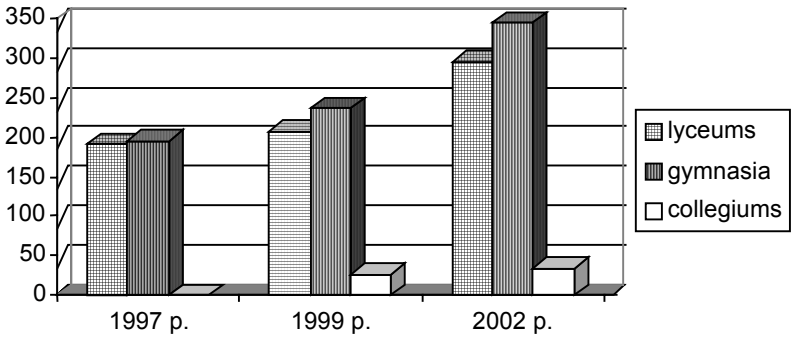
The data in the table show that the network of different types of schools is completely undeveloped in rural areas and the dynamics of their development cannot be predicted for the nearest future.

Figure 1 shows the general dynamics of the development of different types of general secondary institutions. However, as can be seen by the previous table the main growth of the network takes place on account of urban institutions.

[27] Кабінет міністрів України. - Про виконання законодавства щодо розвитку загальної середньої освіти в Україні. - від 1 жовтня 2002.-№28-3565/4.- с. 8. (The Cabinet of Ministers of Ukraine. On the Fulfillment of the Legislation on the General Secondary Education Development in Ukraine of 1 October 2002. – No. 28-3565/4. – p.8).

[28] Statistical Data of the MOES. General School, Preschool and Vocational Educational Institutions (2000-2001 p). K: Kompas. 2002.- p.12-14.

Figure 1. The network of lyceums, gymnasia, collegiums[29]



A number of general secondary schools in cities seek to satisfy the demand in profile or specialized education by teaching certain subjects at advanced level which are particularly essential for entrants to further education including those subjects necessary for a deeper understanding of basic disciplines. It is common for this kind of intensive type of teaching to only be available at some secondary schools at additional cost not included in the school budget. Funds for this purpose are often raised by parents or other sources as donations or as additional financing from local authorities. While in part this may appear to solve the problem of profile education availability, it in fact contributes to the problem in the long term by creating a situation of inequality among children whose parents can afford to pay for this kind of tuition and those whose parents cannot. Moreover, while appearing to introduce advanced level subjects, the schools still continue to limit the choice of subjects available to students insofar as availability ultimately depends on the resources, teaching materials and equipment a school can offer. The absence of a wide choice and differentiation of school curriculum do little to meet the demands and individual needs of students.

The topicality of profile education introduction is confirmed by polls conducted within the framework of the Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" (See table 3). Results received testify to the uncertainty and insufficient information available in the Ukrainian society and to pedagogues, in particular, about the main grounds for profile education. This, in its own turn, shows the need to create a platform for introducing a profile educational system in Ukraine and wide discussion of the problem by pedagogues and the public at large.

The following answers were received by the project experts to the question: "What kind of profiling for upper secondary school do you consider the most appropriate?"

[29] Кабінет Міністрів України. - Про виконання законодавства щодо розвитку загальної середньої освіти в Україні. – від 1 жовтня 2002.- №28-35-65/4. (The Cabinet of Ministers of Ukraine. On the Fulfillment of the Legislation on the General Secondary Education Development in Ukraine of 1 October 2002. – No. 28-35-65/4).

Type of profiling	Answers	Cherkasy	Mykolayiv	Ternopil	Luhansk	Total
Creation of specialized schools	No	0%	7%	0%	13%	5%
	Particularly	38%	47%	25%	63%	45%
	Yes	**63%**	**47%**	**75%**	**25%**	**49%**
Profiling within the framework of one school	No	0%	0%	29%	11%	7%
	Particularly	29%	61%	29%	39%	42%
	Yes	**71%**	**39%**	**43%**	**50%**	**52%**
In one class (according to groups)	No	21%	31%	80%	15%	29%
	Particularly	29%	31%	20%	69%	40%
	Yes	**50%**	**38%**	**0%**	**15%**	**31%**

The participants of the regional seminars (Cherkasy, Ternopil, Mykolayiv, Luhansk) elaborated recommendations for the introduction of profiling in upper secondary schools. The recommendations included: the creation of specialized general secondary schools; the organization of profile classes; the development of a rational network of rural secondary schools with a clearly defined status; the transition of rural vocational schools to a lyceum type of education; the transition of general secondary schools to a profile system of education.

The State Standard of General Secondary Education (approved in October 2003 by the Ministry of Education and Science) is already anticipating the transition of today's upper secondary schools to profile education. Definite steps have already been made in this direction within the basic curriculum.

For example, the content of **Natural Sciences** as a subject in upper secondary schools will be developed on the basis of a profile educational approach with the level and specialization of the content being chosen by the student. The levels available will include a: *General Cultural Programme* that provides the educational minimum required where the subject is taught as a humanitarian specialization; *General Studies Programme* where Natural Sciences will not be taught as an educational course (for example, as a General Biology or Chemistry course); *Profile Preparation Programme* where the given educational profile or specialization is the core subject – (for example, courses in Physics and Mathematics for Physics-and-Mathematics specialization, or in Biology for Biology-and-Chemistry specialization). In addition *General Studies* as a separate specialization could be made available in upper secondary schools programmes.

The **Geography** content will consists of the following basic profiles: Science about Earth; Geology; Cartography; Geography and Economics (Social, Economical and

Commercial Geography, Geography of World Economics, Demo-Geography) and Geography and Ecology (Constructive Geography, Natural Resources, Geo-Ecology).

Profiles are anticipated in **Physics** where it will be available as a core subject. Modules will include: Physics and Mathematics; Physics and Technology; Biophysics; Astrophysics as well as others.

It is also planned to develop specializations in **Chemistry** which will be available depending on the particular profile of schools running the course.

Several differences can be seen in the State Standards as far as the introduction of profile education is concerned, i.e. there is a division between the levels of knowledge for science subjects, while for Geography such division comprises various knowledge directions. In the document there are no references to the Concept for Profile Education in Upper Secondary Schools, the document limits itself only to the above mentioned examples.

It should be mentioned that efforts to propose several approaches and models for profile education exist in Ukraine, in particular, in Cherkasy Region. For instance, profile education models taking into account regional peculiarities and available resources were proposed in the region on the basis of the Cherkasy Region In-service Teacher Training Institute.

The necessity to identify approaches to profiling of the curriculum while creating standards, in our opinion, is very important. The creation of a platform for introducing profile education in upper secondary school should promote the development of a high standard of education in Ukraine in general.

According to the latest Ministry of Education and Science of Ukraine data for the 2002/2003 school year, the following profiles were envisaged to function in Ukrainian schools[30]:

- Philology;
- Physics and Mathematics;
- Social and Humanitarian Studies;
- Biology and Chemistry;
- Medicine;
- Art and Aesthetics;
- Economics;
- Legal Studies;
- Technology and Industry;
- Sport;
- Information Technology.

The Ministry of Education and Science published this list in order to provide information about the number of students already engaged in studying the above mentioned specializations in educational institutions offering intensive courses in certain subjects. However, all measures undertaken by the state towards upper secondary school profiling are only initial steps and are in strict line of the discussed and adopted concept.

In summarizing the above it can be emphasized that the problem of upper secondary school profiling in Ukraine is characterized by the following aspects:

[30] Summarized table No. D-5. Knowledge on the profound education and learning for the beginning of 2002/2003

- the existence of different types of schools can solve the problem of profiling only partially, making it more difficult to a certain extent for children to have equal access to a high standard of education;
- the State Standard of General Secondary Education Draft being today a key document for curriculum structuring in education insufficiently reflects the main approaches to upper secondary school profiling in Ukraine;
- the system of teacher training and teacher qualification upgrading, current didactical literature and the system for assessing the quality of student knowledge insufficiently take into account the problems of upper secondary school profiling;
- successful realization of the Concept for Profile Education in Upper Secondary School envisages the development of efficient mechanisms for its implementation as well as the wide participation of the public in their discussion.

3.2. Approaches to Differentiation of Upper Secondary School Abroad

In order to carry out an extensive analysis of the concept of upper secondary school profiling and to compare it with other educational systems it is important to address foreign experience. The world has accumulated many years of experience in the organization of profiling in upper secondary school. There are three approaches to the structural organization of upper secondary school in the countries of Western Europe and the USA:

a) existence of different types of schools (upper secondary school level) (France, Italy, Greece).

In these countries two levels of general secondary education is presented by different types of schools. At the first level (basic school) all students study according to a common curriculum. These types of school are represented by: gymnasia in Greece, colleges in France and secondary schools in Italy. At this school level (upper secondary school) which ensures external differentiation, students receive different types of education.

In **Italy** the following types of school are available for children aged fourteen: classical lyceum, gymnasia scientific lyceum, art institute, primary school teacher training school, vocational and technical schools (See Annex 1).

In **France,** upper secondary education is available at certain lyceums with educational differentiation according to various profiles. These are general educational lyceums and technical lyceums (three years of study) where students can obtain three types of diploma (Academic, Baccalaureate in Technology and Technical Diploma). After finishing Grade 2 of general and technical lyceums students continue their education in so-called "series" according to their own choice: Literary, Economical and Social, Scientific (general series); in four technical "series": Technologies, Economic Sciences, Laboratory Sciences and Technologies, Medico and Social Sciences; Hotel Business, Music and Dance, Technical Specialty. A technical diploma gives a student the chance to get a job in a specialist field or to continue higher education. Another type of senior school is vocational school which provides two years of education – first and final years and offers up to 40 specialist subjects in different areas.

b) Profile education (differentiate programmes) within the structure of general school.

In Denmark, Portugal, Finland, Sweden, Iceland and Norway secondary education is not divided into general secondary and upper secondary schools. In these countries

secondary education is provided through one structure – a single school that differentiates education from within.

Having examined the organization of the **Danish** secondary school education in detail (See Annex 1) where secondary and upper secondary school function as a united structure, we can see that the approach to profiling is grounded on the idea of receiving knowledge through basic subjects in the 1st and 2nd years of upper secondary school (gymnasia) and the opportunity to choose subjects in two directions – languages and sciences, but in accordance with a selected profile (from the list of subjects). Every year, upper secondary school students who study according to a certain profile must choose profile subjects that are compulsory and additional to core subjects. Thus, the basic parameters of education remain unchanged with only profile subjects changing. A gymnasium enrolls students aged 16 –19 and provides them with an opportunity to enter university. The number of hours in a week does not exceed 32 and in the third year of study the time devoted to compulsory subject study is decreased to 17 hours.

In Sweden, upper secondary school comprises of 16-19 year-olds. There are 17 national programmes in this country, 15 of which are professionally-oriented and two academically-oriented (for university study preparation) (See Annex 1).

In the **USA** profile education is realized during the last two or three years of high school. The students can choose one from three options, i.e. academic, general and professional. The variability within the profiles is ensured at the expense of the wide spectrum of various selective courses which take into account the wishes of parents and students.

Russia also has begun the process of profile introduction at upper secondary school level. The Russian Federation Government jointly with the Ministry of Education and the Russian Academy of Education elaborated the Concept of Profile Education at Upper Level of Secondary School which was approved on 29 December 2001 (10). The concept envisaged the introduction of profile upper secondary school in stages up to 2010 as well as of two models of profile education organization, i.e. a model of internal school profiling according to one or several profiles and a model of a network organization foreseeing the consolidation of several educational institutions around the "resource centre". The concept also proposes the correlation of the basic/profiled general education/elective courses in the following proportions: 50:30:20 (10). A gradual decrease of the volume of basic subjects (invariant) is also envisaged in favour of the variable part of the curriculum within the three year time period of study in upper secondary school.

c) general curriculum for the first stage of education in different types of upper secondary school and intensive profile education during the last stages of education.

In the third group of countries (Germany, Austria and the Netherlands) students obtain a general education at basic school level. During the first years of studying in upper secondary school (which consists of different types) students study the common curriculum and programmes. They can select profile education only at the last stage of their studying in upper secondary school.

4. List of Recommendations

Recommendation A. Creation of a platform for profile education in Upper Secondary School implementation in Ukraine.

Recommendation B. Implementation of Profile Education in Upper Secondary School (Grades 10-12).

Policy option B1. Profile education organization by means of the development of a network of different types of schools (gymnasia, lyceums, colleges, etc.)

Policy option B2. Profile education organization in upper secondary school within a network of different types of general educational institutions.

5. Description of Recommendations

Recommendation A. Creation of a platform for profile education in Upper Secondary School implementation in Ukraine.

The creation of a platform for implementing secondary school profile education should include:

a) **a review of the main approaches to organizing study in upper secondary school, grounding the definition of profile education, clearing its main aim and objectives.** As the experience of many foreign countries testifies profile education should aim at ensuring the interests, capabilities and individual potential of students according to the their future life plans by means of differentiation and individualization of education, ensuring equal opportunities;

b) **it is necessary also to elaborate a model and structure of profiled courses, to define the frameworks of basic and profiled subjects, state the correlation between the variable and core components in their dynamics in upper secondary school, and correlate these positions with the State Standard.**

The experience of many countries testifies to the fact the profile organization of education leads to the gradual decrease of the core component. It should be stressed that the introduction of profile education in upper secondary school can be realized only if less time is devoted to un-profiled subjects. If this is not done the learning load on students will increase. This situation is proved by an experiment that was conducted in Russia (in Moscow) where profile study in senior classes was introduced in nearly 200 schools (2002)[31] The Government of Russia, having approved the Concept of Profile Education in Upper Secondary School, has defined a model for general secondary school which foresees the possibility of providing different combinations of subjects which will ensure the flexibility of profile education by taking into account educational subjects characterized as basic (general education), profiled and elective (10). Structural changes will be necessary in case of profile education implementation. It means that the implementation will requires time and funds;

c) **The Ministry of Education and Science of Ukraine should not only determine the list of the profile subjects and their correlation but also the mechanisms for their implementation.**

[31] Kuznetsov A.A., Ryzakov M.V. Several aspects of elaboration of curriculum at the upper secondary school stage // Standards and Monitoring in Education. – 2003. – No. 1, – P.40-46.

This recommendation assumes the creation of lists of profile areas drawn up on the basis of research of labour market requirements. These lists should be flexible and available for amendment. In order to prevent the chaotic differentiation of education it is necessary to settle the issue with profile areas.

It is also necessary to define the list of basic general education subjects compulsory for all students. For instance, Russia plans to introduce the following subjects: Mathematics, History, Russian and Foreign Languages, Physical Culture and integrated courses in the field of Social Studies (for science and mathematical, technological and other profiles), Science (for humanitarian, social and economic and other profiles).

Introduction of profile education is to be accompanied with the creation of a new generation of quality textbooks taking into consideration a competence approach to the curriculum;

d) Profiling of upper secondary school should be done on a voluntary basis

The structural changes of upper secondary school organization are necessary for the efficient introduction of profile education. It is practically impossible to achieve this immediately in distant regions (*oblasts*) and rural schools however the transition to profile education is achievable if it takes place gradually and under conditions where complete provision of an appropriate base and teacher resources is available. These first steps to educational profiling should not be artificially accelerated by the administrative authorities. It is necessary also to develop the legislative base for profile education. The procedures of profile education implementation should be long-term and foresee the possibility of this type of introduction immediately in all general secondary education institutions of Ukraine.

Recommendation B. Implementation of the Profile Education in Upper Secondary School (Grades 10-12).

The introduction of profile education will require the restructuring of upper secondary schools. According to the World Bank research it is necessary to elaborate attractive programmes corresponding to the new structure of labour market demands and which will give a high standard of basic knowledge, ensure skills mastering and the development of creative thinking, create opportunities to enter higher educational institutions and guarantee the chance to move from one programme to another (9, 49). It is necessary also to invite additional resources for the creation of a generation of didactic materials to satisfy the demands of profile schools.

Policy option B1. Profile education organization by means of the development of a network of different types of schools (gymnasia, lyceums, colleges, etc.)

This proposal deals with the development of the present network of general secondary schools (gymnasia, lyceums and colleges) in Ukraine. As has been mentioned in the Ministry of Education and Science Instruction "On the Application of the Law of Ukraine 'On General Secondary Education regarding Widening the Network and Organization of the Educational process in Gymnasia, Lyceums and Colleges" of 28 October 2002 No. 1/9-472 under conditions of transition into profile education it is necessary to stimulate the process of the creation of the above mentioned educational institutions and profiled grades in every district (*rayon)* or region (*oblast*). It is necessary to remember that the access of children to such schools is limited because admission is on a competitive basis. Selection of

competitive basis. Selection of students into gymnasia grades already starts in primary school. Besides, the organization of the above mentioned institutions in rural areas could be realized only in so-called "basic" general educational schools with boarding premises or using different forms of distance learning in co-operation with pedagogues from higher educational institutions (12).

It is also necessary to include other aspects of pedagogical activity into statutes of educational institutions. This will ensure the realization of individual and creative abilities of students. In this case the limited load should not be higher than the norms established by the Ministry of Education and Science of Ukraine.

As enrolment in such institutions envisages competition and selection it is necessary to elaborate competitive tasks which should be in line with existing programmes. Competition conditions should envisage transparency by being made public through the mass media or other easy accessible sources of information.

Possible flaws:

Elaboration of such a strategy could result in deepening the division between students who should pay for study in the best lyceums and gymnasia and those who have to be satisfied with studying in general secondary school.

There is also a danger of un-transparent enrollment procedures in private educational institutions of different types.

It is also possible that educational institutions of different types will not take into account labour market demands and offer so-called "popular" profiles orientated at professions which are already in abundance on the labour market.

Policy option B2. Profile education organization in upper secondary school within a network of general educational institutions of different types.

This proposal foresees the introduction of profile education with the preservation of the present general secondary educational institutions of different types (gymnasia, lyceums, colleges) as well as the VET system. As the network of general educational institutions partially satisfies the need for profile education, having a tradition of intensive learning, and possesses necessary experts and resources, it seems appropriate to preserve and to develop the network of such institutions. At the same time, it is necessary to continue the development of profile education in general secondary educational institutions (upper school). This will create equal opportunities for receiving education with consideration of individual interests and abilities.

In the event that this proposal is implemented it is necessary to take into account the following aspects:

A. The profile education organization model in upper secondary school

The profile education organization models may be based on the introduction of one profile (for instance a humanitarian, mathematical, technical, etc) or the existence of several profiles in a school (depending on the availability of necessary pedagogical staff, resources, etc.). In addition, profile education can be organized on the basis of "basic" schools. The latter have more resources and staff as well as the possibility to use resources of other schools for profile education in the network of several schools.

Distance forms of learning, co-operation of many educational institutions of various types and levels (for instance, engagement of necessary experts from universities, colleges, etc.) should be widely used. It is necessary to take into consideration various levels of profile education which may envisage stages of profound learning of different subjects as well as to elaborate a system of pre-profile orientation of students according of their abilities.

B. Types of training courses (basic, profiled courses based on choice, optional), their correlation.

Basic training course should be compulsory for every pupil. The proportion of training courses should be reduced in favour of profiled one. Basic training courses should comprise the variable part of the basic curriculum.

Subjects available on basic training courses include: Mother Tongue and Foreign Languages and Literature, Mathematics, Computer Knowledge, History, Social Sciences, Physical Culture, Science about Nature.

Profiled training courses should provide profound education based on basic courses, such as Mathematics, Physics, Foreign Languages, Law and Economics. These profiled courses can cover the following profile areas: mathematical, philological, economical, biological, etc.

The implementation of profiled training courses requires additional teaching hours for profound education. Profiled courses should also provide a wide range of practical training, laboratory and creative work.

Courses based on choice should meet student demands. This type of training course should cover the compulsory part of the curriculum. Courses that are based on choice can be selected not only in accordance with the student's profile but according to his/her own desire to improve knowledge in specific disciplines. For example, a student who chooses a profound humanitarian profile can select a course in economics or IT technologies according to his/her own desire.

It is necessary to consider the possibility of students changing course according to their own choice. In such a case these courses could be suggested as training modules and integrated courses.

Optional courses do not belong to the main framework of teaching hours and can be chosen or not by students. But these courses can be directed towards additional and profound education. Schools should provide the right for every student to select an optional course. Extensive education, professional orientation and equality should be the aims of optional courses.

C. Correlations between the system of education quality monitoring and State Education Standards.

The idea of profile education in upper secondary school should be reflected in the State Education Standards. Education Standards should include and mirror the main profile trends. Profile education should be taken into account while creating a system for student assessment.

One of the effective mechanisms for profile education implementation in upper secondary school should be discussions and the drawing up of **lists of life and professional competencies** that should become the basis of school achievement assessment according to chosen subjects. It is important to determine a list of competencies that could be assessed

at different stages of profile education. The Ministry of Education and Science of Ukraine should be responsible for the determination, implementation and control of key competencies acquirement. This should be taken into consideration when designing a monitoring system for student achievement.

D. Teacher training for profile upper secondary school organization and advanced teacher training.

It is impossible to create profile upper secondary school without relevant teacher training. The system of in-service teacher training should be provided with all the necessary programmes, training materials and other resources to respond to the requirements of the educational sector in qualified professionals. Also it is necessary to offer the chance for teachers to teach subjects according to different profiles or one profile that are quite important for rural areas. Teachers should be familiar with modern pedagogical technologies: integrative courses and innovative teaching forms and methods, contemporary teaching aids, and so on.

It is necessary to organize teacher training and upgrading teacher qualification training to satisfy the needs of profile upper secondary school.

6. Conclusion

Recommendations presented in the research were elaborated within the framework of the UNDP Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction". It must be stated that the suggested options are a result of discussions held by the project. In addition, stakeholders' faith has been restored that positive changes are taking place in the educational sector of Ukraine with the creation and approval of the Concept for Profile Upper Secondary School by the Scientific Board of the Academy of Pedagogical Science of Ukraine and the Board of the Ministry of Education and Science of Ukraine. These events afford ground for further qualitative changes in educational reform and the development of profile upper secondary school in Ukraine. We consider that recommendations based at the Concept for Profile Upper Secondary School presented in the given research could be a subject for further wide public discussions.

7. References

1. Державна програма "Вчитель". – К.: Редакції загальнопедагогічних газет. – 2002. – 40 с. (National Program "Teacher". – K.: Editing Boards of the General Pedagogical Newspapers. 2002. – 40 p).
2. Державні стандарти базової і повної середньої освіти (Проект). – МОН. – 2003. (State Standards of Basic and Full Secondary Education. (Draft) – Ministry of Education and Science of Ukraine. – 2003).
3. Законодавство України про освіту. Збірник законів за станом на 10 березня 2002 р. – К.: Парламентське видавництво. – 2002. – 159 с. (Legislation of Ukraine on Education. Collection of Laws on the period until 10 March 2002. – K.: Parliamentary Publishing House. -. 2002. – 159 p).
4. Зведена таблиця № Д-5. Відомості про поглиблене навчання і поглиблене вивчення предметів на початок 2002/2003 навчального року. (Table No. D-5. Data on profound learning and mastering of subjects at the beginning of 2002/2003 school year).

5. Жовта І. Старша школа повинна перейти на профільне навчання. За матеріалами прес-конференції міністра освіти і науки В.Кременя. – Освіта України. – № 102-103. – с. 2 (Zhovta I. Senior School Should Transform on Profile Education. Materials of the press-conference of V.Kremen, Minister of Education and Science of Ukraine. – Education of Ukraine. – No. 102-103. – p. 2).
6. Постанова Кабінету Міністрів України "Про виконання законодавства щодо розвитку загальної середньої освіти в Україні" від 1 жовтня 2002 р., № 28-3565/4. – 44 с. (Order of the Cabinet of Ministries of Ukraine "On the Fulfillment of the Legislation on the General Secondary Education Development in Ukraine" of 1 October 2002, No. 28-3565/4. – 44 p).
7. Кузнецов А.А., Рыжаков М.В. Некоторые аспекты разработки содержания образования на старшей ступени школы // Стандарты и мониторинг в образовании. – 2003. – № 1. – С.40-46. (Kuznetsov A.A., Ryzakov M.V. Several aspects of curriculum elaboration at the upper school stage // Standards and Monitoring in Education. – 2003. – No. 1. – P.40-46.
8. Лернер П.С. Профильное образование: взимодействие противоположностей// Народное образование. – № 2 – 2002. — С.75-81. (Profile Education: Interaction of Oppositions // Narodnoje obrazovanie. – No. 2. – 2002. – P. 75-81).
9. Образование в странах с переходной экономикой. Всемирный банк, 2000.— Вашингтон. – 183 с. (Education in Countries with Economies in Transition. World Bank, 2000. – Washington. – 183 p.).
10. Об утверждении Концепции профильного обучения на старшей ступени общего образования // Народное образование. — № 9. — 2002.— С. 29-40. (On the Approval of the Profile Education at Upper Stage of General Education Level Concept // Narodnoje obrazovanie. – No. 9. – 2002. – P. 20-40).
11. Освіта України. Нормативно-правові документи. До ІІ Всеукраїнського з'їзду працівників освіти. – К.: Міленіум. – 2001. – 470 с. (Education of Ukraine. Normative and Legislative Documents. For the II All-Ukrainian Forum of the Pedagogical Workers. – K.: Millennium. – 2001. – 470 p).
12. Про застосування Закону України "Про загальну середню освіту" щодо розширення мережі та організації навчально-виховного процесу у гімназіях, ліцеях, колегіумах/ Лист МОН від 28.10.2002. №1/9-472.(On the Application of the Law of Ukraine "On the General Secondary Education" on the Widening the Network and Organization of the Education Process in Gymnasia, Lyceums, Collegiums/ MOES Letter of 28 October 2002 No. 1/9-472).
13. Статистичний збірник МОН. Загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (1996-2001). – К.: Компас. – 2001. – с.14-16. (Statistical Digest of MOES. General, Preschool and Vocational Schools (1996-2001). K: Compass 2001. – P.14-16)
14. Статистичний збірник МОН. Загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (2000-2001). – К.: Компас. – 2002. – с.12-14. (Statistical Digest of MOES. General, Preschool and Vocational Schools (2000-2001). K: Compass 2002. – P.12-14).
15. Указ Президента України "Про Національну доктрину розвитку освіти"/ Національна доктрина розвитку освіти. 17/04/2002 р., № 347, 2002. (Presidential

Law "On Development of the National Doctrine of Education"/"National Doctrine on the Development of Education" 17 April 2002. No. 347/2002).

16. http://www.eurydice.org. The Information Network on Education in Europe.

6. Annexes

Annex 1.

Upper Secondary School Organization in Denmark

Secondary (after compulsory) education in Denmark is divided into:

1. General secondary education:
   - Gymnasia
   - Higher examinational courses (*Hujere Forberedelseseksamen – HF*)
2. Vocational secondary education:
   - Primary vocational training – higher commercial courses (*HCC*)
   - Higher technical courses (*HTC*).

1. Gymnasia

Gymnasia provide academic education and prepare students for further learning at universities. These are special institutions that suggest post compulsory secondary education during the three-year period and address students of 16-19 years old. After finishing students have to pass a final examination (*Studentereksamen*) the result of which allows them to enter university. Students who succeeded to Grade 9 can attend a gymnasium.

The alternatives to the gymnasium are two-year training courses (*Studenterkurser)* for those after Grade 10. There are full-time and part-time forms of education.

Classes are formed according to a students' age and subjects selected. Separate teachers teach different subjects.

Content of Education. Differentiation.

In gymnasiums students can choose different lines (directions). Each direction comprises following levels: higher and intermediate.

Two educational directions are suggested in gymnasiums: languages and sciences.

Both directions contain identical subjects: Mother Tongue, History, Biology, Music (1st year of study); Geography (2nd year of study), Art, Religion, Classical Education (3rd year of study) and Physical Culture.

In addition upper secondary school provides:

- compulsory subjects in the 1st and 2nd years of study;
- 4 "blocs" of subjects for choice at the senior and intermediate levels (in the 2nd year of study – 1 (one) block and in the 3rd year – 3 (three) blocks).

Compulsory subjects in a languages direction:

- English Language;
- German or French;
- Third Foreign Language (French, German, Italian, Japanese, Spanish, Russian);
- Science (integrated course that includes knowledge of Physics, Chemistry, Biology)
- Latin (only in the 1st year of study).

Compulsory subjects in a science direction:

- Physics;
- English;
- Second Foreign Language (French, German, Italian, Japanese, Spanish, Russian) and;
- Chemistry (1st year).

Subjects for choice at senior level in both directions:

- Music and Social Science (additionally in the 3rd year of study);
- English, German and Third Foreign Language.

Language direction proposes to choose Greek and Latin.

Science option: Biology and Chemistry (at the 2nd year of study), Mathematics and Physics (at the 3rd year of study).

Intermediate level option: Art, Biology, Computer Studies, Drama, Economics, Cinema Studies, Music, Philosophy, and Physical Culture, Social Sciences, Technology and Geography (at the 3rd year of study) for both directions.

Language option: Latin and additionally Chemistry, Mathematics and Physics (in the 3rd year of study).

Sciences: – Chemistry and Latin.

All students have to follow certain criteria while choosing subjects:

- all four blocks have to be selected but every subject has to be chosen only at one of the levels;
- two subjects have to be chosen at the senior level;
- students who study in a languages direction should choose one foreign language at the senior level;
- students who study Sciences have to choose the upper level for study of the following subjects: Biology, Chemistry, Mathematics, Music, Physics or Social Sciences;
- Courses in Music and Social Sciences at senior level should be supplemented by Biology, Chemistry or Geography at the intermediate level, and Mathematics or Physics at the senior level.

Quantity of hours in a week (one hour – 45minutes)

- 1st year of study – 32 hours (all the hours assigned for compulsory subjects);
- 2nd year of study – 31-32 hours (27 for compulsory subjects);
- 3rd year of study – 31 -32 hours (17 for compulsory subjects)

Annex 2.

Upper Secondary School Organization in Sweden

At the upper secondary school (16-19 year-olds) there are 17 National educational programmes, 15 of which are professionally oriented, and two are academically oriented programmes that prepare for University.

The first stage professionally oriented national programmes suggest the following profiles:

- Art;
- Business and Administration;
- Building Construction;
- Child Recreation;
- Electrical Engineering;
- Energetic;
- Food Industry;
- Handcraft;
- Health and Care;
- Hotel and Restaurant Business;
- Industry;
- Mass-Media;
- Environment Resources Elaboration;
- Transport;
- Technologies

Academician national programmes offer two profiles:

- Natural Sciences including Sciences, Mathematics, Computer Science, Ecology and others;
- Social Science course that includes Economics, Culture, Social Sciences, Languages etc.

Annex 3.

Organization of Upper Secondary Education in Italy

Upper secondary school comprises students aged fourteen. Curricula of different types of schools include compulsory subjects and subjects for choice**.** Italian teachers pay special attention to the learning of modern foreign languages at different types of schools.

The following table shows the distribution of subjects (compulsory or by choice) in different types of schools.

Type of the School	Learning period	Compulsory subjects	Selected subjects
Classical lyceum	Years of study 1-2 (Gymna-sia)	Italian Language and Literature; Latin; Greek; Modern Foreign Language and Literature; History; Geography; Mathematics; Physical Culture	Religion
Classical lyceum	Years of study 3-5 (Lyceum)	Italian Language and Literature; Latin Language and Literature; Greek and Literature; History; Philosophy; Science; Chemistry and Geography; Mathematics and Physics; Art History or Music; Physical Culture	Religion
Scientific lyceum		Italian Language and Literature; Latin Language and Literature; Foreign Language and Literature; History; Philosophy; Geography (in 1st and 2nd year of study); Chemistry and Geography; Science; Mathematics and Physics; Drawing; Physical Culture	Religion

Art Institute		Compulsory Subjects: Italian Language and Literature and History; Art History or Music; Mathematics and Physics; Science; Chemistry and Geography; Physical Culture. Artistic Subjects: Drawing; Still Life Figure Modeling; Ornament Modeling; Geometric Drawing; Perspective; Architectural Component; Anatomy for Artists	Religion
Primary school teacher training school		Italian Language and Literature; Latin Language and Literature (1-2 years of study); Philosophy; Pedagogic; Psychology; History; Civics and Geography; Science; Chemistry and Geography; Mathematics and Physics; Drawing and History of Arts; Choral Singing; Physical Culture	Religion; Training in playing different musical instruments
Educators training school		Italian Language and Literature; Pedagogics; History and Geography; Mathematics; Accountancy and Science; Hygiene and Child Care; Music and Chorus Singing; Domestic Economy; Theory and Physical culture; Handicraft and Drawing; Pedagogical Practice	Religion

Technical schools	First cycle (1-2 year of study)	Italian Language and Literature; History and Civics; Geography; Foreign Languages; Mathematics; Physics; Science and History; Drawing (apart from commercial direction); Physical Culture; Practice Differentiation	Religion
Technical schools	Second cycle (3-5 years of study)	Italian Language, History, Civics and Physical Culture are compulsory subjects for all; Selection of other subjects depends on faculty and specialization, most of the teaching hours devoted to practical lessons.	Religion
Professional schools	1st and 2nd year of study	22 hours a week devoted to a subject area the same for everyone: Italian, History, Foreign Language, Jurisprudence and Economics, Mathematics and Computer Studies, Environmental Studies, Biology and Physical Culture. Zone of special education includes: technological and professional subjects – 14 hours per weak. Profound level – 4 hours per weak	Religion
	3rd (last) year of study	12-15 hours per week assigned for one subject zone the same for everyone: Italian, History, Foreign Language, Jurisprudence and Economics, Mathematics and Computer Studies, Environmental Studies, Biology and Physical Culture. Zone of the special education includes: technological and professional subjects – 21-24 hours per weak	Intensive learning of some subjects offered by school.

France

Upper Secondary School (Lyceum) – children 15-18 years old

Upper secondary school is offered by a few types of lyceum with differentiated education*:*

I. Lyceum of general and technological education

This is a general secondary institution that after three years of study offers the following qualifications to students:

1. General Level Baccalaureate;
2. Baccalaureate in Technology;
3. Technical Diploma.

Preparatory classes for entering higher schools and technical departments of higher education institutions are part of these lyceums at the post-baccalaureate stage. As a rule, children from colleges go to lyceums that are situated in the region where they live apart from those who choose private school.

In 1992 the lyceum system was reorganized in order to:

- Reorganize and balance the types of baccalaureates in terms of their number;
- To stimulate motivational development in profile selection.

The learning process in these lyceums is organized according to two cycles:

1. Determination cycle that happens in the second year general and technical classes
2. Final cycle that occurs in the 1st final class that prepare students to take the baccalaureate.

1). Determination cycle (Grade 2). At this stage students are allowed to be prepared and oriented for certain series and types of baccalaureate.

Education in Grade 2 includes learning of general subjects that are compulsory for everyone:

French Language and Literature	4 hours
Mathematics	3.5 hours
Physics and Chemistry	3.5 hours
Science on Life and on Earth or	2 hours
Technology of Automatic Systems	3 hours
Foreign Language (one)	2.5 hours
History and Geography	3 hours
Physical Culture and Sport	2 hours
Total time	**23 hours 30 minutes**

Besides, students receive 3 hours per week for module education, work in groups that are supplemented according to the timetable in the following disciplines: French

Language, Mathematics, History and Geography, Foreign Language (45 minutes per every subject per week).This new approach allows the promotion of pupil heterogeneity by means of a variety of pedagogical activities and group work diversifying traditional forms of education.

Moreover, every pupil on a compulsory basis selects two directions for further education that help him/her to clarify the series of baccalaureates received at the first and final stages. Also there are classes of special education, after finishing those students receive a special diploma (for example, "Technique of Music and Dance" or a master diploma.

Teaching hours are distributed according to the scale – 29.5 to 32.5 hours and depend on the direction chosen.

Grade 2 of tertiary school is very important for a pupil's professional orientation**.** At the beginning of the second year of study an assessment of the pupil's achievements is conducted in the three main subjects: French Language, Mathematics and Foreign Language.

During the second quarter students and their parents determine further orientation of education. During the third quarter the families in written form explain which classes they desire their children to attend in the Grade 1. Lessons should be classified in desirable order. Starting from this School Counsels compose their proposals into an educational series based on results of assessment and their own thoughts.

2) Grade 1 and senior grade.

Having finished Grade 2 of general and technical lyceum students have an opportunity to continue education in the following series:

General series:

- L (Literary);
- ES (Economic and Social);
- S (Scientific).

Four technological series:

- Tertiary science and technologies;
- Industrial science and technologies;
- Laboratory science and technologies;
- Medical and social science;

Training for specific baccalaureate: "Hotel Business" and "Technique of Music and Dance";

Training for obtaining a master diploma that justifies qualification in special fields and includes general education, specialized education and professional technologies' study.

Having received a master diploma students can obtain corresponding work; continue higher education

The total teaching time is 26 – 35 per weak.

II. Vocational lyceum

Vocational lyceum provides students with the following qualifications:

1. Certificate of Professional Skills;
2. Certificate of Specialized Education;
3. Baccalaureate Certificate in Vocational Education (Professional Baccalaureate)

Certificate of Professional Skills

This training aims to provide students with a qualification in a corresponding specialty. The training includes:

- General Education (near 14.5 – 16 hours per week): French Language, Mathematics, History, Geography, Economics, Physical Culture. The target of this education is to assure students basic knowledge about contemporary life and adaptation to professional requirements;
- Technical and vocational education (12-17 hours per week) that provide knowledge and skills according to the selected specialization. They are divided according to the form of theoretical course, practical course and job practice.
- Period of industrial practice.

If students have such a certificate, they can continue education and training to obtain a Certificate in Specialized Education.

Certificate of Specialized Education justifies specialization of the employee. Education in this direction provides more intensive specialized training than is usually available. A specialized lyceum offers a two year course instead of three years at college.

Education consists of the following:

- The total time for general education is 14-22 hours per weak. Educational course is provides the majority of subjects taught at college. But they are more specialty-oriented. General education plays a very important role in the preparation to exams in terms of specialty and provides the possibility to continue education to achieve a Professional Baccalaureate or Baccalaureate in Technology;
- The total time devoted to technological education is 16-20 hours per week. It is divided among specialties and organized on the basis of general education according to adjacent specialties or to those of the same professional sector, and specialized education connected with the practical side of a future specialty.
- Teaching hours in this sector are characterized by intensive theoretical and practical approaches (33-36 hours on a specialty).
- Period of professional practice. Since its inception in 1992 the practical course has been concluded with a final exam mainly in the following specialties: Building, Hotel Business, Engineering and Construction Specialties.

Students who receive a certificate can start professional activity or continue two year education to achieve a professional baccalaureate degree or baccalaureate in technologies studying.

III. Vocational lyceum comprises of two years of study. Unlike technological and professional baccalaureate courses it allows the continuation of education at university. There are 40 specialties in this direction with 30 teaching hours per week:

- Professional, technological and scientific training (16-18 hours);

- General education: French Language (3-4 hours); Foreign Language (2-3 hours); Contemporary Studies, History, Geography, Civics (2 hours), Physical Culture and Sport (3 hours), Art (2 hours), Handicraft (3-6 hours).
- Work Practice: conducted in an enterprise for 16-20 weeks during the two year period of study.

Olena LOKSHYNA

External Assessment of Student Achievements

1. Executive Summary

The question of education standards has become an important issue throughout the world today. Societies are fully aware of the important role education has to play in the development of a country. Unfortunately, the **external assessment of secondary school student achievements** as one of main constituents for ensuring the provision of education quality **does not exist** in Ukraine at present.

The absence of external assessment of secondary school student achievements and the demand for its introduction[32] makes its necessary to seek effective assessment models and the best ways for their implementation. Development of this problem within the framework of the second stage[33] of the Project: "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" has become a logical response to our society's demand for a high standard of education on an international level.

During the course of this work analysis of world expertise, positive characteristics of national assessment models of other countries and the Ukrainian achievements in this field have been examined together with a look at the difficulties which might be encountered in this type of assessment. The research fulfilled has enabled us to suggest the following policy options for the introduction of external secondary school student assessment in Ukraine:

Policy Option A. Sample external testing of basic school student achievements.

Policy Option B. Participation of Ukraine in the international comparative studies (TIMSS, PISA).

Policy Option C. Introduction of external assessment for all the students at different stages of education (primary, basic and upper secondary school).

Policy Option D. Introduction of external assessment at upper secondary school graduation level.

The first two options could be realistically implemented in the short term and the last two in the long-term

[32] The importance of ensuring a high quality education has been determined at legislative level in Ukraine. See. National Doctrine of the Development of Education; outcomes of the sociological polls (cited in the work) testify to the necessity to introduce external assessment.

[33] The first stage of the Project (2001) presented a program of support for development of the strategy of the educational reform in Ukraine, i.e. the National Doctrine of the Development of Education. The second one (2002) is aimed at the elaboration of recommendations for the Ukrainian Government on implementation of the most topical tasks defined in the National Doctrine.

2. Introduction

In view of the current trend towards democratization of the general education system to meet the new demands of society, Ukraine has started to improve its assessment system of secondary school student performance, which is considered to be one of the principal means of ensuring a high quality of education.

Since the 2000/2001 school year the Ministry of Education and Science of Ukraine has introduced a new assessment model which moves the emphasis from measuring a student's range of knowledge to assessing the competency skills acquired by a student; from concentrating upon the level of student failure to assessing the level of his/her accomplishment.

However, today, for all the positive changes in this sphere, Ukraine does not yet possess the means to diagnose objectively the results produced by its system of education. What is at issue here is **the absence of external student achievements assessment in Ukraine**[34] which, in contrast to internal assessment (conducted by subject-teachers or by a group of subject-teachers of an individual school at the level of a group, a class or the school on the basis of tasks compiled by these teachers themselves), provides an assessment of the level of student progress:

- with standardized tasks (tests) compiled by individual institutions;
- at national (regional) level;
- on the territory (usually) of an independent institution with its employees involved;
- by unified procedures of assessment results processing.

The absence of external assessment in Ukraine generates a whole series of other problems arising one from another in succession. The absence of external assessment makes it impossible to assess objectively the results of the educational level of students, which, in turn, makes it impossible to compare these results at local, regional and national levels. As a result it is difficult to develop compensatory programs which provide students from different regions and social groups with equal opportunities to access high quality education. Finally, it is impossible to compare the results of student educational levels with international ones, to evaluate the national educational standards as well as to develop an education improvement policy.

This problem infringes on the interests of both students and society generally. At student level it becomes apparent that internal assessment (which is based upon subjective judgments of teachers) without external assessment creates difficulties:

- firstly, in the objective measurement of student development during study for the purpose of timely diagnosis and for taking measures to overcome existing problems;

[34] An attempt of 1993 to introduce the standardized assessment of secondary school pupil progress turned out to be unsuccessful. The main reasons for the failure were imperfect test texts (for lack of time and finance), absence of an independent institution to run the testing as well as general non-readiness of the society for introduction of the assessment type.

- secondly, in objective certification that could provide a real picture of student performance, make school-leaving certificates relevant giving students equal opportunities for lifelong learning.

The absence of external assessment at national level makes it impossible:

- to receive information about the correlation of educational results with resources input, i.e. about the efficiency of educational system functioning in general;
- to produce appropriate educational policies, in particular, to give assistance to problem zones (as in many countries, for instance, Educational Priority Zones in Great Britain or Zones d'Education Prioritaires in France, etc.).

Ukrainian society is fully aware of the problems generated by the absence of an external assessment system. Results of a poll of participants of December 2002 regional seminars (Cherkasy, Mykolayiv, Ternopil, Luhansk) organized within the framework of the Project: "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" are proof of this. In answer to the question "Do you consider it expedient to preserve the existing system of assessment (without introduction of external assessment)?" the following responses were given:

Table 1. Attitude of the representatives of the Ukrainian education to the problem of external assessment of student achievements

	Cherkasy	Mykolaiyv	Ternopil	Luhansk	Total
No	68%	31%	75%	58%	55%
Partly	21%	44%	0%	37%	31%
Yes	11%	25%	25%	5%	14%

Although the limited number of respondents and orientation at only a small number of target groups (secondary education employees) is not representative of society as a whole, the obtained data could serve as evidence of our understanding of the unsuitability of the existing system of student assessment as well as necessity to introduce objective control of student achievements in Ukraine.

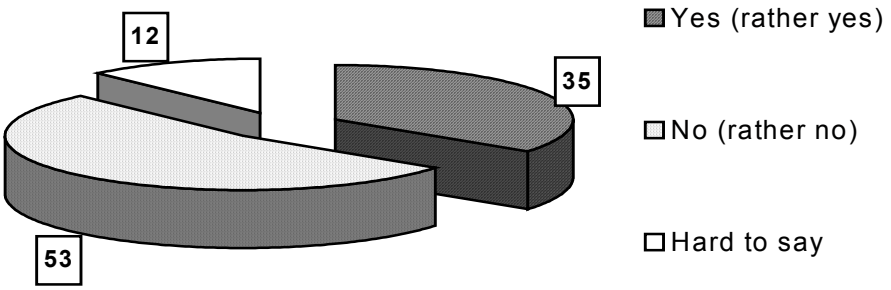
A survey carried out to highlight the attitude of another target group – young people – to the existing system of leaving (school) – entrance (Higher Education) exams shows that a considerable number of young people are aware of the unsuitability of the current assessment system and the need to introduce mechanisms for objective assessment.[35]. This survey was initiated by The Testing Technologies Center Project of the International Renaissance Foundation and conducted by the Social Monitoring Center jointly with the Ukrainian Institute of Social Studies in 10 oblasts of Ukraine representing its main regions as well in the Autonomous Republic of Crimea and in Kyiv[36]. A total of 2,007 respondents

[35] The results of this poll were put at our disposal by L.Hrynevych, the Head of The Testing Technologies Center Project of the International Renaissance Foundation/

[36] Балакірєва О.М., Міщенко М.Д., Яременко О.О. Аналітичний звіт "Ставлення молоді до впровадження системи єдиного тестування випускників середніх закладів освіти". - Центр "Соціальний моніторинг" спільно з Українським інститутом соціальних досліджень, 2002.

aged from 14-28 years were questioned. The following answers were given in reply to the question "Do you consider that the exit exams in secondary educational institutions fulfill the function of objective monitoring of school graduate knowledge?" (%)

Diagram 1. Secondary school exit exams evaluation by the Ukrainian youth



As can be seen from the diagram, more than half of the Ukrainian youngsters consider the leaving exam system in secondary schools imperfect. Neither does it fulfill the function of objective monitoring of pupil achievements.

3. Analysis of Foreign Experience of External Assessment of Student Achievements

In view of the current demand and readiness to introduce an effective external assessment system in Ukraine this problem requires a detailed analysis and examination of all the possible pros and cons. This can be done by taking into consideration the expertise of other countries since this problem is not new to the world.

The procedure for determining the level and quality of student achievements by means of standardized testing at federal or national levels is common practice in Austria, Great Britain, Ireland, Italy, Lithuania, the Netherlands, Germany, Portugal, Romania, Slovenia, the USA, Finland, France and in many other countries.

Standardized assessment at international level (based on representative sample testing of students) is used today in the framework of international comparative studies (AEP-II-1991, TIMSS-95, TIMSS-R-99, CIVIC-99, CIVIC-2000, PISA-2000) for measurement and comparison of the quality of the national system of education as well the development of adequate trends in educational policy.

(O.Balakireva, M.Mischenko, O.Yaremenko. Analytical Report "Attitude of Youth towards Introduction of the System of Unified Testing of Secondary School Graduates". – Social Monitoring Centre jointly with the Ukrainian Institute of Social Studies, 2002).

3.1. Forms of Student External Assessment

In view of the two main functions which external assessment performs – one diagnostic and one certifying – it can assume one of the following forms:

- assessment at definite stages of child studying at school in the form of monitoring testing for diagnostic purposes;
- assessment at the end of a definite period of study in the form of state/national/final examinations for the purpose of certification/selection.

Having much in common (they measure identical curriculum areas[37] and apply the same methods) assessment at different stages of studying (diagnostic tests) is applied to monitor student performance level while assessment at the end of studying (exams) is aimed, first of all, at certification and selection.

The difference refers also to the level of data aggregation, i.e. state exams provide information about each individual while testing is intended, first of all, to provide information about the educational system as a whole.

It should be mentioned that diagnostic external assessment could be in the form of sample testing (on the basis of representative sample testing of students, results of testing later are distributed as a representative sample of the entire student body) as well as compulsory for all students diagnostic testing.

Aspects of a standardized assessment system should be defined by law before its introduction and should establish:

- the stages at which external assessment shall be conducted (in Great Britain the law envisages three key stages for diagnostic assessment; the fourth one is for external examination for certification purposes);
- subjects in which students are assessed or rules for combining subjects;
- the assessment procedures (in Slovenia the law requires the application of a double system of examination tasks assessment);
- an institution to conduct the assessment (it can be either a part of the national ministry of education (Ireland) or an independent private institution (Great Britain, USA) or a part of the regional department of education).

3.1.1. External Assessment of Student Achievements for Diagnostic Purposes

Great Britain is a classical example of standardized assessment application for diagnostic purposes. Its main aim is to monitor the level at which knowledge and skills laid down by the state educational standard (National Curriculum) are acquired by students. That is why it is compulsory. It is characterized by:

- the definition of assessment procedures at legislative level (1988 Law on Education Reform for England and Wales);
- the definition of the compulsory character of assessment;

[37] The most common subjects in which students are tested are: mother tongue, mathematics, first foreign language, science and history.

- the fact that it is conducted at different stages of school education;
- legislative definition of the subjects (English, Mathematics, Science) which are subject to standardized testing;
- the fixing of compulsory testing dates for everybody:

Table 2. Britain's model of external assessment of student achievements

Student's Age / Key Stage (KS)	Subjects in which students are assessed	Duration of a test	Date of testing
7 years, Primary School, end of KS 1	English (Writing, Reading, Spelling, Calligraphy) and Mathematics	Up to 3 hours	During several days in summer terms
11 years, Primary School, end of KS 2	English (Writing, Reading, Spelling), Mathematics and Science	5-5.5 hours	On definite days in the middle of May
14 years, Basic School end of KS 3	English (Reading, Writing, W. Shakespeare plays), Mathematics and Science	7-8 hours	On definite days in the middle of May

The law-based assessment scheme defines eight levels of accomplishments in each subject. It is expected that pupils will achieve each level in two years. Thus, 7-year old pupils should achieve the 2nd level, 11- year olds – the 4th and 14-year olds – the 5th or 6th levels.

The British option of external assessment is aimed at diagnosing the level of acquiring knowledge, skills and competencies minimum which is compulsory for all students. It is quite effective functionally. However, it will require considerable financial investment from Ukraine as well as adjustment of aspects of assessment in current legislation.

The French external assessment model has some differences. The main peculiarity of external diagnostic assessment in France (which is also compulsory) is its organization at the beginning of the school year:

Table 3. French model of external assessment of student achievements

Time	Subjects
The beginning of the 3rd year of studying in primary school at the age of 8.	Tests in the French and Mathematics.
The beginning of the 1st year of studying in basic school (college) at the age of 11.	Tests in the French and Mathematics.
The beginning of the 1st year of studying in high school (lyceum) at the age of 16.	Tests in the French, Mathematics, History or Geography, in the First Foreign Language.

External assessment at the beginning of the school year on school premises by subject-teachers in addition to obtaining information about the real level of student development:

- leaves time for French teachers to use appropriate measures (in case of necessity) to improve the situation regarding student educational achievements;
- makes it impossible to use this type of assessment for selection purposes;
- greatly reduces the cost of the procedure which is important and relevant for Ukraine now.

Since 2002 Poland has introduced a system of compulsory external assessment achievements of 14 to 16-year old students[38]. Tests developed by an independent body (Central Examination Commission) are aimed at measuring the level at which skills are mastered by students and not subject knowledge.

Voluntariness is the peculiarity of the Dutch approach to standardized assessment at the end of primary school in Grade 8 at the age of 12. The system of tests elaborated by The Central Institute for Test Development (CITD) measures literacy as well as the level of student achievements in Mathematics and World Studies (an integrated course which includes knowledge of Geography and Biology). Despite the fact that the testing is optional more than 80% of all the Dutch schools apply it actively. The principle of voluntariness in external assessment does not permit this assessment to be used for selection. The assessment results serve to obtain a picture of the level of student achievements as well as to forecast direction of study.

The general secondary education monitoring that has started in Russia is an example of sample pupil educational level assessment by means of standardized testing. Its first stage was conducted in the 1999/2000 school year. The assessment of Russian basic school graduate level in the Russian language and Mathematics was aimed at measuring the real level of mastering the curriculum set forth at state level. Sample testing of Grade 9 students from different regions of Russia was conducted for this purpose and the results received were means distributed.

Beside obtaining general data about the level of national education (27 schools in both low-level and well-to-do regions of the country were picked out for testing), one of the sample testings of basic school pupils in Poland (in 1999) was aimed at revealing testing difficulties as well as at preparing all stakeholders for future compulsory external assessment[39].

Ukraine also possesses some positive experience of sample standardized testing. In particular, the sample (1,695 students) testing of 8^{th-} and 10^{th}-grade pupil achievements (in the Ukrainian Language, in Foreign Literature, Mathematics, History, Physics, Chemistry, Biology and Geography) in the Lviv oblast (December 2000) organized by the Education and Science Department of the Lviv Oblast State Administration jointly with the Lviv Oblast Institute of In-Service Teachers' Training (M.Barna, O.Hirniy and others)

[38] Results of the external assessment of Polish students in 2002 are given in the book: Herczynski Jan, Herbst Mikolai. Pierwsza odslona. Proleczne i terytorialne zroznicowanie wynikov sprawdzianu szostoklasistow i egzaminu gimzazjalnego przeprowadzonych wiosna 2002 roku. – Warszawa: Fundacja Klub Obywatelski, 2002. – 72 p.

[39] The Program Miedzynarodowej Oceny Umiejetnosci Uczniow OECD/PISA. Wyniki Polskie – report z badan. – str1/PISA_Raport_polski.doc. – 32 p.

was aimed at measuring the level of effectiveness of the new 12th-grade assessment system. The results obtained testified to the existence of typical subjective mistakes in pedagogue assessment. Thus, the first steps in this direction showed the advantages of standardized testing in comparison with teacher testing as far as objectivity is concerned.

Hence, the main positive feature of external assessment (in the form of national testing) conducted for diagnostic purposes is to provide stakeholders (central, regional and local educational authorities) with objective information about the level and quality of student achievements in order to compare the data pertaining to all educational levels and to elaborate appropriate educational policies.

3.1.2. External Assessment of Student Achievements For Certification Purposes

The majority of European countries apply external assessment in the form of state/national/final exams at the end of a study period for certification purposes. Alongside developed Western countries (which need objective certificates in order to give equal opportunities to all pupils as well as to prepare their competitiveness in common labor markets) the countries of the former socialist camp (Slovenia, Romania, Hungary) and the post-Soviet states (Lithuania, Moldova, Russia) are working actively in this direction.

According to the data of the European Union (*Key Data on Education in Europe. – European Commission, 2000*) the frequency of use of external assessment in the form of state exams for certification purposes increases in EU countries as students approach the end of school study. While external exams at the end of basic school are conducted only in Great Britain, Ireland, Iceland, the Netherlands, Norway and France (in the latter they are not compulsory) external assessment at the end of upper secondary school in the form of final examinations is applied practically by all Western European countries. Only Belgium, Iceland, Spain, Greece, Portugal and Sweden are the exceptions.

In the world there are a great number of forms of external leaving exams, i.e. from a single subject exam (Great Britain) to an exam comprising of three (Germany) to twelve (Denmark) subjects; from the introduction of only written external exams (Finland, Bulgaria, Cyprus, Lithuania) to passing such exams in two forms – written and oral (the majority of European countries).

In the Netherlands the leaving exam includes an internal exam (it can be oral and/or written; it is designed by a subject-teacher) and the external one (it is in written form; is designed by an independent institution; the results are processed by school teachers according to standards developed by the mentioned institution).

The main problem on the path to external assessment introduction at national level is its high cost. External assessment requires great financial and human investments, for instance, establishment of independent testing centres, elaboration of tests and results processing as well as qualified experts training. However, practically all developed European countries have either introduced external examinations or are actively preparing for their introduction.

The main positive of external assessment at secondary school graduation stage is the granting of certificates which give a real picture of student knowledge and competencies; they are competitive and give equal opportunities to quality education.

3.1.2.1. Matriculation Examinations

In some countries (Liechtenstein, Italy, Germany, Slovenia, Finland, France) standardized assessment at the end of secondary school is the matriculation examination (MATURA). The aim of matriculation exams is the measurement of the level of secondary school graduates mastering knowledge and skills defined by state standards; achievement of a definite level of maturity which corresponds to the objectives of secondary education. The matriculation exam is passed with the intention of continuing studying at university level. Such an approach raises the prestige of school education, enables a rating approach to pupil certificates and decreases the educational load on students, and so on.

Different countries apply their own approach to the organization of matriculation exams. In some countries the matriculation exams automatically open the doors of higher educational institutions; in others universities require from entrants additional entrance exams to be passed.

In several countries the matriculation exams are compulsory for all secondary school-leavers, in others MATURA is one of the two exams which a school-leaver may pass. Differences also concern the place where such exams are conducted, i.e. it can be the premises of a school or of an examination center:

Table 4. Approaches to MATURA organization in the countries of the world

Country	Description of the Matriculation Exam
Switzerland	MATURA includes exams in 9 subjects (besides Languages, Maths, History and Science students can pass Economics, Law, Psychology, Pedagogy, Philosophy, etc) and a comprehensive interdisciplinary paper (matriculation dissertation). At present, about 20% of the corresponding age-group of 19 year olds of the population (age of finishing secondary school) obtain a matriculation diploma. The Swiss matriculation diploma is officially recognized by universities in this country, they do not use additional entrance exams for entrants.
Finland	The Matriculation Examination Board in Finland allows candidates to pass exams (of several levels of difficulty) in four compulsory subjects (mother tongue, second official language, foreign language. Also a candidate chooses either Mathematics or General Studies (a subject which includes knowledge of history, religion, social studies, ethics, psychology, philosophy, physics, chemistry, biology and geography) for obtaining a matriculation diploma. Besides, the candidate must pass additionally one or more tests. Exams are held on the school premises.

France	Students pass a Baccalaureate in the subjects of the course they have chosen in high school (lyceum). The exam consists of written and oral work, some of them are compulsory, others are by student choice. The Baccalaureate is regarded as a key to university study because it is the equivalent to the first year of study at university. However, some universities use their own additional selection system based on the number of scores obtained in the Baccalaureate.
Lithuania	The aim of MATURA exams is to confirm the educational maturity achieved by school graduates. MATURA also fulfils the function of educational monitoring and provides information for the centralized recruitment of students for institutions of higher education. Exams may be of two types, i.e. level A (national MATURA) and level B (school MATURA). Results of the national MATURA are a criterion for admission of school-leavers into higher educational institutions. Higher educational institutions regard national MATURA diplomas differently. Some of them give preference to these diplomas while others do not take them into consideration. National MATURA requires exams to be passed in the Lithuanian Language, Mathematics, History, Foreign Language (English, German, French or Russian), Chemistry, Biology and Physics. Such exams are carried out in local examination centers; results are assessed centrally.

3.1.3. International Comparative Studies

Participation of countries in international comparative studies (supported by the International Association for Evaluation of Educational Achievement (IEA) and the Organization for Economic Co-operation and Development (OECD) is an important instrument for education quality monitoring within the context of external assessment application.

The main aim of international testing (which is based up on a representative sample testing of students) is to diagnose the educational level of secondary school pupils. It allows a comparison and evaluation of the quality of education in a country. For example, the TIMSS (The Third International Mathematics and Science Study) is aimed at measuring the level of science and mathematics achievements of students at different school levels (students of five parallels, i.e. of 3rd and 4th primary school grades, the seven and eight basic school grades and the final high school grade are tested). The PISA (The Program for International Student Assessment) is to determine whether pupils who received compulsory education (at the age of 15) possess knowledge and skills needed to live a full life in society.

Data received as a result of a country's participation in international comparative studies allows the evaluation of the quality level of national education. In particular, participation of Russia in the TIMSS in 1995 and 1999 revealed that despite the fact that Russian pupils possess a high level of subject knowledge and skills (in 1995 the Russians showed outputs that were higher than the average international ones for all participants),

their application of knowledge in real everyday situations was much worse in comparison to the average international results.

Analysis of the PISA outcomes (2000) also testified that Russian pupils had difficulties with fulfilling untraditional tasks requiring analytical skills and creative application of knowledge.

Thus, participation of a country in international comparative studies and obtained results (in particular, for Russia – a rather low level of Russian pupil competencies which are necessary for life in the modern society) is an instrument for the elaboration of appropriate educational policies (in Russia, for example, the correction of the curriculum towards introduction of key competencies) for enhancing a country's competitiveness in the world market.

4. List of Policy Options

In view of the analysis of modern foreign expertise in external assessment as well as the existing situation in Ukraine within the context of available financial and human resources and global tendencies it seems to be appropriate to suggest the following policy options:

Policy Option A. Sample external testing of basic school student achievements.

Policy Option B. Participation of Ukraine in international comparative studies (TIMSS, PISA).

Policy Option C. Introduction of external assessment for all students at different stages of education (primary, basic and high school).

Policy Option D. Introduction of external assessment at high school graduation level.

5. Description of Policy Options

Given the difficulties with educational funding it is obvious that to introduce a comprehensive external assessment system in Ukraine today in one single step is quite impossible. Implementation of separate policy alternatives seems to be the best way of dealing with this problem under these conditions. In this context the first two proposed options could be regarded as quite realistic in the short term and the last two – in the long term:

Policy Option A. Sample external testing of basic school student achievements

Sample external testing of student achievements for diagnostic purposes (i.e. for obtaining data about the level and quality of student performance) seems to be the most appropriate first step towards the introduction of a comprehensive system of external assessment.

The expediency of such a step can be confirmed on the basis of the experience of several post-socialist (in particular, Poland) and former Soviet countries (first of all, Russia) which have begun the process of quality monitoring system implementation from the sample external student assessment only.

Given that sample testing could be aimed at examination of different aspects every time it takes place (for example, the level of the Ukrainian language acquirement or difference of mathematical knowledge and skills level between students from urban and

rural areas) the following table could serve only as an example of such type of assessment organization:

Table 5. Suggested model of sample diagnostic external assessment of student achievements

Educational level	Basic school
Age of pupil	15 years
Time	Second half of the second term
Level of coverage	Individual schools located in 4 regions of Ukraine (in the North, South, East and West)
Content areas	Core curriculum subjects, to begin with: Mathematics, the Ukrainian language or History
Place	Schools (however, in case of availability of independent regional quality monitoring centers the assessment could be run on their premises)
Performers	School teachers (however, in the case of independent regional quality monitoring centers function the assessment could be conducted by center representatives)

The results of the sample assessment could be means distributed and will render it possible:

- to reveal general tendencies of the development of secondary school student preparation in basic core curriculum subjects as well as factors affecting the quality of student progress level;
- to obtain comparative data about the level of education development in individual regions of the country for working out appropriate support programs for territories which have problems;
- to reveal difficulties which could confront students, teachers, school heads and educational authorities during testing;
- to prepare the pedagogical community to standardized assessment within the framework of international comparative studies (TIMSS, PISA, etc.).

Financial problems as well as the absence of ready test materials and the lack of testing experience of Ukrainian pedagogues are the main difficulties for the implementation of this step. However, today a standardized testing model for the school leaving and university entrance stage is elaborated within the framework of "The Testing Technologies Center" Project of the International Renaissance Foundation which is supported by the Ministry of Education and Science of Ukraine. The model presupposes establishment of regional quality monitoring centers (Kyiv, Kharkiv, Lviv, Odesa) which would have all the necessary technologies for standardized testing. The pilot sample external testing in these very regions would greatly simplify the procedure and reduce its cost.

Sample external assessment would require neither amendments of the current legislation nor long preparation (Polish or Russian expertise as well as developments by Ukrainian university scholars involved in the elaboration of tests by the aforementioned project can be used). The whole process (preparation, testing and processing of the results) could last for not more than 4-6 months.

The Ministry of Education and Science of Ukraine seems to be the most appropriate co-coordinator of sample external testing because the obtained data would serve for the development of educational policies which is the prerogative of top level educational authorities.

Policy Option B. Participation of Ukraine in International Comparative Studies (TIMSS, PISA)

Participation of Ukraine in international comparative studies (TIMSS, PISA)[40] is an important step towards external assessment introduction. Such participation would give an opportunity to:

- measure the quality level of the national system of education;
- reveal weak elements (participation of Russia in such type of studies revealed the insufficient orientation of the existing curriculum at key competencies formation);
- adjust the educational policies for resolving existing problems.

Financial difficulties can be regarded as the main problem on the path to this educational policy implementation. The participation fee usually includes the national cost and the international overhead. However, the World Bank sometimes supports financially some OECD non-member countries.

Given the fact that Ukraine is not ready to participate in the next comparative TIMSS studies (2004) a pilot assessment (independent sample testing based upon TIMSS tests samples after receiving permission for their usage from relevant organizations) could be a solution in this case for starting the process in Ukraine.

Policy Option C. Introduction of external assessment for all students at different stages of education (primary, basic and high school)

The main aim for introducing compulsory external assessment for all pupils at different educational stages[41] (primary, basic and high schools) would be, as in the case of sample assessment, to diagnose the level and quality of student educational level. The difference will consist in the coverage of different levels of education, in timing of the testing and in the possibility to get more accurate and regular data:

[40] In 1995 Ukraine made an unsuccessful attempt to participate in the TIMSS comparative studies. Its failure could be explained by the impossibility to find necessary financial means for accomplishing this action preparation.

[41] The question on levels coverage (how many educational levels should be covered? – 1, 2,3?) requires further discussion.

Table 6. Suggested model of compulsory diagnostic external assessment of student achievements

Education stage	Primary, basic and high school (the issue of coverage of stages of education requires further discussion)
Time	The second month of the first term
Level of coverage	All schools
Content areas	Core curriculum subjects: Mathematics, the Ukrainian language (probably Science)
Place	Schools
Performers	School teachers (in the case of independent regional quality monitoring centers function, the assessment could be conducted by center representatives)

A compulsory precondition of assessment should be that it is conducted at the beginning of a school year and at primary, basic and high school levels which would eliminate the possibility of standardized tests application for selection purposes.

Testing within the limits of school premises will reduce the cost and simplify the procedure of external assessment introduction.

Introduction of external assessment in Ukraine will require amendment of current legislation because today Ministry of Education and Science normative documents only legislate for internal assessment (thematic control and state attestation).

The preparation and running of assessments will be simplified by applying the experience of sample testing introduction and the country's participation in international comparative studies. The preparation process for the first round of this assessment could take more time since it will be necessary to prepare testing materials for all secondary schools (there are about 22,000 of them at present in Ukraine). After the procedure becomes regular the preparation period will shorten greatly.

The Ministry of Education and Science of Ukraine seems to be the most appropriate co-coordinator of compulsory external testing because (as in the case of sample assessment) the obtained data would serve for the development of educational policies which is the prerogative of top level educational authorities.

Policy Option D. Introduction of external assessment at high school graduation level

Unlike diagnostics testing which is run at different stages of secondary education and intended to provide objective data about a system of education, external assessment at the end of secondary schooling is to satisfy each personality as far as objective certification is concerned. It would give a real picture of each secondary school graduate's educational level providing equal opportunities for lifelong learning:

Table 7. Suggested model of external assessment of secondary school graduates with certification purpose

Educational stage	High school
Time	The end of the second term
Level of coverage	All schools
Curriculum areas	2 obligatory subjects (the Ukrainian language and Mathematics) and three subjects of choice (a foreign languageë a science, a social science subject)
Place	Testing centers
Performers	Representatives of testing centers

In the case of this option implementation it would be necessary to anticipate the different methods for the introduction of such assessment which could be compulsory for all school-leavers as well as for only those planning to continue education.

Standardized testing introduction at the end of secondary school study could be a step towards the MATURA system implementation, i.e. the school finals could be regarded as university entrance exams.

The main problematic groups in case of the MATURA introduction might be universities, school teachers, pupils and the public.

a) Universities

The situation is that today universities do not trust the quality of secondary school examinations. Moreover, they possess control and (in some cases) obtain "earnings" during entrance examinations.

However, if universities get actively involved in test developing procedures (defining subjects, etc.) and if they are confident about the possibility of developing a reliable assessment model they could become then (in view of the experience of many countries) the main stakeholders (since they would get an effective selection model).

b) Schools

Theoretically teachers support MATURA implementation in Ukraine. This is evidenced by the results of questioning participants of December 2002 regional seminars (Cherkasy, Mykolayiv, Ternopil, Luhansk) organized within the framework of the UNDP Project: "Education Innovation and Renewal for Improved Well-being and Poverty Reduction". The following answers were received to the question "Do you consider it expedient to introduce MATURA at the end of the high school?":

Table 8. Attitude of the representatives of the Ukrainian education to the problem of MATURA introduction for school graduates

	Cherkasy	Mykolayiv	Ternopil	Luhansk	Total
No	10%	22%	0%	6%	12%
Partly	0%	0%	0%	11%	3%
Yes	90%	78%	100%	83%	85%

However, in view of foreign experience, in practice this group of stakeholders is usually the most problematical one. Non-acceptance of MATURA by teachers could be explained, first of all, by their unwillingness to have external "standards" for measuring the results of their work as well as with their fear that such results will be compared and made public.

c) Pupils

This group of stakeholders is the most open (according to the polls) to introduction of this type of examination. Efforts should be concentrated here on technical preparation of students for MATURA as well as on providing them with real equal rights for continuation of their education.

d) Public

Total public support could be raised in the event of a targeted PR-campaign to explain the future advantages (transparency of school leaving and university entrance examinations, equal opportunities, etc.) of this step.

The MATURA can be implemented in two ways:

1) Voluntary MATURA.

MATURA can be offered only to those who intend to continue university education. Those intending to acquire a vocational profession (or already got it during high school study) could pass the state final attestation (for measuring the level of state standard mastering). Secondary education certificates based upon the state final attestation should provide an opportunity to enter the labor market or (as in Slovenia) to get technical training in relevant higher educational institutions.

2) MATURA for all the graduates.

MATURA introduction for all graduates requires a differentiated approach. For this purpose external examinations of two difficulty levels could be introduced. The first (advanced) level would be for students intending to receive higher education. The second one (ordinary) is for the rest to measure and certify the level of state standard mastering.

Compulsory external assessment will require amendment in the current normative base because today normative documents of the Ministry of Education and Science stipulate only for internal assessment in the form of state final attestation. In addition, an appropriate location, as well as rights and functions of bodies responsible for independent assessment should be defined by law.

General Recommendations[42]

1) Creation of an independent institution responsible for tests design, testing technologies development, testing results processing, and so on is an important condition for the formation of an external assessment system in Ukraine.
2) Training of experts in this sphere is not less important. It could be realized on the base of high education institutions or institutes of in-service teacher training.
3) Items for external testing should be of different types and measure all aspects of student performance.
4) Introduction of an external assessment system in Ukraine (irrespective of policy options implemented and in which order) should be based on the adherence of basic principle of assessment organization taking into consideration the interests of students, parents, teachers, educational authorities, policy makers, and so forth:

A) Assessment standards, tasks and procedures should be fair to all students.

Because individual assessment results often affect the future of a student, the assessment system should measure the level of student achievements equally. Assessment tasks and procedures must take into consideration cultural and national differences and problems of students with disabilities. No student's fate should depend upon a single test score.

Besides, assessment information should also be used fairly. It should be accompanied with information about access to curriculum and opportunities to meet the standards created for students.

B) The assessment items should measure the level of student mastering of educational standards established legislatively.

The assessment system should measure all aspects of student achievement. That is why besides multiple choice tests (which are limited to measuring the entire range of student development levels) other types of measurement should be used, i.e. open ended questions, written essays, etc.

Moreover, external assessment aiming at the measurement of the level of student mastering of state standards will prevent the practice of teachers coaching students to pass external exams.

C) Assessment procedures and results should be understandable for everybody.

Assessment materials and results should be in a form that is understandable for students, teachers, parents, employers and other stakeholders.

D) Assessment results should be open for everybody.

Openness of the results of any type of assessment (of students, schools, and teachers) is an important condition for democratization of the education system in Ukraine.

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[42] Elaboration of **General Recommendations** and **Annexes 2 and 3** became possible thanks to the research conducted at the University of Pittsburgh (PA, U.S.A., 2003) within the Regional Scholar Exchange Program administered by IREX (International Research and Exchange Board) and sponsored by Bureau of Educational and Cultural Affairs (ECA), US Department of State. ECA, IREX and University of Pittsburgh are not responsible for the views expressed herein.

Moreover, this information should form part of the information about the quality of national education which usually includes the following:

- context indicators (social and economical status of students; school climate);
- resource input into education (expenditure per student, teachers salaries, material and methodological base);
- educational process (number of teaching hours, number of students in a class);
- educational outcomes (students performance, dropout rates, employment, further education).

E) The assessment system should be subject to continuous improvement.

Even a well-designed assessment model is never an ideal one. That is why introduction of external assessment in Ukraine should anticipate continuous improvement in assessment procedures in response to the new demands of society.

6. Conclusion

The proposed policy options worked out in the process of researching problems within the Project: "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" unambiguously testify to the importance of external assessment of student performance both for obtaining objective information about the quality of the national education system and for certification of the real level of student development.

Standardized assessment organized at a high level is a cost procedure which includes such constituents as: design, printing, dissemination, collection, processing, reporting and analysis. It requires a high level of professional personnel, safety of premises and transport and corresponding electronic equipment.

Foreign expertise testifies to the fact that external assessment could be implemented gradually and in a great variety of possible ways.

The policy options proposed in the work require further extensive discussion with governmental and scientific structures in Ukraine for the purpose of finding the best ways to implement them.

7. References

1. Аналитический отчет о результатах мониторинга общего среднего образования в 2000 г. – Москва: Российская академия образования, Институт общего среднего образования, Центр оценки качества образования, 2001. – 20 с. (Analytical Report on the Results of General Secondary Education Monitoring in 2000. – Moscow: Russian Academy of Education, Quality Education Evaluation Centre, 2001. – 20 p.).
2. Балакірєва О.М., Міщенко М.Д., Яременко О.О. Аналітичний звіт "Ставлення молоді до впровадження системи єдиного тестування випускників середніх закладів освіти". – Центр "Соціальний моніторинг" спільно з Українським інститутом соціальних досліджень, 2002. (O.Balakireva, M.Mischenko, O.Yaremenko. Analytical Report "Attitude of Youth towards Introduction of the System of Unified Testing of Secondary School Graduates". – Social Monitoring Centre jointly with the Ukrainian Institute of Social Studies, 2002).

3. Критерії оцінювання навчальних досягнень учнів у системі загальної освіти /МОН України, Ін-т педагогіки АПН України. – К.: Перше вересня; Шкільний світ; Харків: Фоліо, 2000. – 126 с. (Criteria for Student Achievements Assessment in the General Education System / MOES of Ukraine, Institute of Pedagogics of the APS of Ukraine. – K.: Pershe Veresnya, Shkilniy Svit, Kharkiv: Pholio, 2000. – 126 p.).
4. Локшина О.І. Контроль та оцінка успішності учнів у школах Західної Європи. – К.: КМІУВ імені Б.Грінченка, 2002. – 52 с.(Lokshyna O. Control and Assessment of Student Performance in Schools of the Western Europe. – K.: B.Hrinchenko KCITTI, 2002. – 52 p.).
5. Моніторинг якості навчання – необхідна умова становлення творчої особистості й розвитку освітньої інституції (за результатами контрольних замірів навчальних досягнень учнів у школах області) Част. 3. – Львів: Управління освіти і науки Львівської обласної державної адміністрації, Львівський обласний інститут післядипломної педагогічної освіти, 2001. – 47 с. (Quality Learning Monitoring is a Necessary Condition for Creative Personality Coming-to-be and an Educational Institution Development (based on the results of the control measurement of student achievements in school of oblast). Part 3. – Lviv: Education and Science Department of Lviv Oblast State Administration, Lviv Oblast In-service Teachers' Training Institute, 2001. – 47 p.).
6. Evaluating and Reforming Education Systems. – Organisation for Economic Co-operation and Development (OECD), 1996. – 83 p.
7. The Governance for Quality of Education. Budapest, 6-9 April, 2000. Conference Proceedings. – Open Society Institute, 2001. – 159 p.
8. Herczynski Jan, Herbst Mikolai. Pierwsza odslona. Proleczne i terytorialne zroznicowanie wynikov sprawdzianu szostoklasistow i egzaminu gimzazjalnego przeprowadzonych wiosna 2002 roku. – Warszawa: Fundacja Klub Obywatelski, 2002. – 72 p.
9. Izard John. Assessing Learning Achievement. – Paris: UNESCO, 1992. – 47 p.
10. Keeves P. John. National Examinations: Design, Procedures and Reporting. – Paris: UNESCO, 1994. – 108 p.
11. The Key Data on Education in Europe. – European Commission, Education and Culture, Eurydice, Eurostat. 1999/2000. – www.eurydice.org/Documents/Key_Data/En/FrameSet.htm
12. McMillan H. James. Classroom Assessment. Principles and Practice for Effective Instruction. – USA: Allyn and Bacon, 2001. – 401 p.
13. The Matura Examinations in Slovenia. Case Study of the Introduction of an External Examinations System for Schools. – Liubljana, Slovenia, National Examinations Centre, 1996. – 62 p.
14. The Monitor "95. National Assessment of Student Achievement. – Budapest: national Institute of Public Education, 1997. – 95 p.
15. Monitoring the Standards of Education. – Ed. By A.C.Tuijman, 1994. – 266 p.
16. Nitko Anthony J. Educational Assessment of Students. – USA: Prentice-Hall, 2001. – 514 p.
17. The Program Miedzynarodowej Oceny Umiejetnosci Uczniow OECD/PISA. Wyniki Polskie – report z badan. – str1/PISA_Raport_polski.doc. – 32 p.

18. Pupil Assessment and the Role of Final Examinations in Secondary Education. Report of the Educational Research Workshop held in Jyvaskyla (Finland) on 15-18 June 1993. – Strasbourg: Council of Europe, 1994. – 168 p.
19. The OECD Programme for International Students Assessment. – http://www.pisa.oecd.org
20. Reforming Educational Assessment in Romania. Project story. National Assessment and Examinations Service, Bucharest, 2001. – 61 p.
21. The Secondary Education in the European Union: Structures, Organization and Administration. Organization of Education. Assessment and Certification. – http://www.eurydice.org.
22. TIMSS 1999. International Science Report. Findings from IEA's Repeat of the International Mathematics and Science Study at the Eighth Grade. – The International Study center, The International Association for the Evaluation of Educational Achievement, December 2000. – 397 p.
23. TIMSS 1999. International Mathematics Report. Findings from IEA's Repeat of the International Mathematics and Science Study at the Eighth Grade. – The International Study center, The International Association for the Evaluation of Educational Achievement, December 2000. – 365 p.

8. Annexes

Annex 1

Table 9. Types of External Assessment at Secondary School Level of the Western European States

Country	Types of external assessment and time when it is carried out		
	Primary School	**Basic School**	**Upper Secondary School**
Austria	-	-	At the age of 18-19 – a final exam which is a university entrance one at the same time.
United Kingdom (England, Wales, Northern Ireland	At the Key Stage (KS) 1 at the end of the school year at the age of 7 – national testing in 2 subjects, and at the KS 2 at the age of 11 – in 3 subjects.	- At the KS 3 at the end of the school year at the age of 14 – national testing in 3 subjects; – At the end of school at the age of 16 – national exam.	At the age of 18 – an external standardized exam in 1 subject.

United Kingdom (Scotland)	-	At the end of school at the age of 16 – national exam.	At the end of school at the age of 18-19 – standardized exam in 6 subjects.
Denmark	-	At the end of Grade 9 at the age of 16-17 (at a pupil's request) – standardized exam in subjects selected by a pupil.	At the end of school at the age of 19 – final exam (written and oral tests) in 10-12 subjects.
Ireland	-	At the end of the junior cycle of secondary school at the age of 15 – national exam of 2 levels of difficulty (written tests and project-work).	At the end of the senior cycle of secondary school at the age of 18 – national written exam of 2 levels of difficulty, and in Mathematics and the Irish language it has 3 levels of difficulty.
Iceland	-	At the end of Grade 10 at the age of 16 – national written exam in 4 subjects.	-
Italy	-		At the end of school at the age of 19 – national exam (written and oral tests) which at the same time is a matriculation one.
Luxembourg	-	-	At the end of school at the age of 19 – national (written and oral tests) exam in subjects which pupils studied during the last year of school.
Netherlands	At the end of Grade 8 at the age of 12 – national testing (on a voluntary basis) in 3 subjects.	At the age of 15 – written national exam for 2 types of schools (14 subjects of the core curriculum).	At the end of school at the age of 17-18 – a final exam, one part of which is conducted at the national level in 6-7 subjects.

Germany	-	-	At the end of school – a school leaving exam in 3 subjects (written and oral tests) which at the same time is the matriculation one.
Norway	-	At the end of Grade 9 at the age of 16 – written exam at least in 1 subject.	At the end of the school at the age of 19 – an exit written exam (in 1 + additionally 2 subjects).
Portugal	-	-	At the end of the school at the age of 18 – the national written exam in subjects studied in school.
Finland	-	-	At the end of school at the age of 19 – national exam (in 4 subjects) which is at the same time the matriculation one.
France	At the beginning of the 3rd year of studying in primary school at the age of 8 – national testing in 2 subjects.	At the beginning of the 1st year of studying in a college at the age of 11 – national testing (in 2 subjects); -at the end of studying in college – national exam (in 3 subjects) which is not a compulsory one.	At the end of the 1st year of studying in a lyceum at the age of 16 – national testing; At the end of studying in a lyceum – an exam (Baccalaureate) which at the same time is the matriculation exam.
Sweden	At the end of Grade 2 – national testing (in 2 subjects).	At the end of Grade 5 – national testing (in 3 subjects).	At the end of Grade 9 – national testing (in 3 subjects).

Annex 2

Table 10. Mini-Glossary: Terms Used in the Sphere of Student Assessment

Term in English	Term in Ukrainian	Definition
Achievement test	Тест досягнень	Measures what a person knows or can do after some instructional activity.
Aptitude test	Тест на перевірку розумових здібностей	Intends to measure innate ability, intelligence or potential.
Assessment	Оцінювання	A process for obtaining information that is used for making decisions about students.
Completion item	Завдання, що потребує завершення	Presents an incomplete sentence. A student is required to supply a word or a short phrase that best completes the sentence.
Criterion-referenced test	Критеріальний тест	Measures how well a student measures up to a certain criterion or standard.
Essay test	Ессе-тест	In an essay test students write sentences and/or paragraphs in response to questions.
Evaluation	Оцінювання	Process of making value judgment about the worth of a student's product or performance.
Item	Завдання	Questions, exercises and tasks used for assessment procedure
Measurement	Вимірювання	Procedure for assigning numbers (usually called scores) to a specified attribute or characteristic of a person in such a way that the numbers describe the degree to which the person possesses the attribute.
Monitoring	Моніторинг	Systematic procedures of collection of data on important aspects of education at national, regional and local levels.
Multiple-choice item	Завдання, що потребує вибору з багатьох запропонованих	Consists of one or more introductory sentences followed by a list of two or more suggested responses. The student must choose the correct answer from among the responses.
Norm-reference test	Нормативний тест	Scores of the test are compared to the scores of a group that has been adminis-

		tered the assessment.
Performance test	Тест успішності	Measures student's ability to apply and use knowledge from several areas to make something, produce a report or give a demonstration.
Portfolio assessment	Портфолійне оцінювання	A purposeful, systematic process of collecting and evaluating student's products to document progress towards the attainment of learning targets.
Reliability of a test	Достовірність	Ability to produce the same results across time.
Response-choice items	Завдання вибору правильної відповіді	Require a student to choose the answer from among two or more alternatives. They include true-false items and multiple-choice items.
Standardized tests	Стандартизований тест	On which the same or similar tasks are given under the same conditions to all students and scored the same way.
Short-answer item	Завдання, що потребує короткої відповіді	Requires a student to respond to each item with a word, short phrase, number or symbol.
Test	Тест	An instrument or systematic procedure for observing and describing one or more characteristics of a student using either a numerical scale or a classification scheme.
True-false item	Завдання з вірними-невірними відповідями	Consists of a statement that a student must judge and mark as either true or false.
Validity of a test	Валідність тесту	Degree to which it measures what it was meant to measure

Annex 3

Code of Fair Testing Practices in Education[43]

Developed by the Joint Committee on Testing Practices by the American Educational Research Association, the American Psychological Association and the National Council on Measurement in Education.

Test-takers' rights

Test-takers have the right:

1. To be treated with respect in the testing process;
2. To be tested by a qualified person;
3. To be notified about testing schedules and fees;
4. To be tested with appropriate accommodations;
5. To be informed about the purpose of testing;
6. To be informed about how the results will be used;
7. To be informed about the quality of the information obtained from the test (its level of reliability and validity);
8. To be given the right to refuse to be tested if legally applicable;
9. To be give an understandable explanation of the consequences of the tests results;
10. To be afforded privacy and confidentiality;
11. To be given the opportunity to review records and appeal interpretations and findings.

[43] Nitko Anthony J. Educational Assessment of Students. – USA: Prentice-Hall, 2001. – 514 p.

Pavlo KHOBZEY

Vocational Education and Training in the Ukrainian System of Education

1. Executive Summary

The multi-departmental subordination of aspects of secondary education at senior school level makes the Ukrainian educational system fragmentary, i.e. vocational education and training (VET) institutions are managed and financed by the Ministry of Education and Science of Ukraine, while general secondary schools are run by local authorities and financed on the basis of the Budget Code of Ukraine. **The divide between general secondary education and vocational education is a problem for senior secondary school students insofar as the situation has resulted in**:

- lack of coordination between VET and general secondary schools;
- local authorities incapable of catering for VET interests in their areas (since without their support it is difficult to establish a social partnership between private employers and educational institutions); and
- VET institutions unable to implement programmes suited to the needs of local labour markets.

Meanwhile, one of the main strategic tasks of educational reform in Ukraine is to establish an integrated system for lifelong education. The transition to a twelve-year secondary school envisages a close interrelationship between profile upper secondary school programmes and the VET system, as well as the creation of opportunities for graduates to continue education in higher educational institutions or to enter the job market.

The research carried out within the framework of the second stage of the Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction"[44] has made it possible to suggest policy options for performing the tasks facing general and professional systems of education in Ukraine.

Policy Option A. To change the VET system of jurisdiction by transferring VET institutions from the central level of government to the regional (*oblast*) level of government.

[44] At the first stage of the project (2001) the technical support on elaboration of the strategy of educational reform was provided to the Ministry of Education and Science of Ukraine. At the second stage (2002) the work of the project was focused on working out of the recommendations for the implementation of the actual tasks determined by the National Doctrine for Educational Development.

Policy Option B. To incorporate VET modules into an integrated profile upper secondary school system.

2. Introduction

One of the goals of the Ukrainian educational system is to lay the foundations for lifelong learning. The transition to a twelve-year system of secondary education will necessitate a close relationship between profile upper secondary school programmes and the VET system. The introduction of "profile education in upper secondary school on a large scale is necessary and can be made available shortly, not when current second graders studying within the twelve-year school framework reach Grade 10. An important step in this direction is the establishment of vocational lyceums on the basis of VET institutions as one of the profiles available in senior school," Vasyl Kremin, the Minister of Education and Science of Ukraine, announced (3, 2).

The fact that VET institutions and general secondary schools are run by separate bodies means that a close check should be kept on ensuring that the work of the two branches of education is properly coordinated and interrelated. This is currently taking place:

- during the switch from basic to complete secondary education in VET institutions through educational content; and
- through opportunities for VET students to receive a complete secondary education at night-schools operating within the general secondary system of education.

However, other aspects of the problem remain unsolved insofar as only a certain amount of coordination activity takes place at the local level of government: this mainly concerns measures undertaken to prevent offences by VET students and by local public institutions.

In addition, regional educational administrations nominate VET directors while the Ministry of Education and Science of Ukraine actually appoints them.

The existing problem of **the divide between general secondary schools and vocational schools for senior student** has many negative effects.

Firstly, it is common today for VET institution premises that are used by students in the second part of the day to be leased to organizations that have absolutely nothing to do with education.

Secondly, schools are unable to provide work training owing to lack of resources.

Apart from this, the question remains as to how expedient interschool educational and vocational complexes are that provide pre-vocational and vocational training given that there already exists a VET school network with available resources and staff.

Since VET institutions are not run by local authorities, the problems of vocational education and training frequently evade the attention of this level of government. Without their support it is difficult to establish a social partnership between private employers and educational institutions. There is also the long-standing practice of VET specialists being trained without taking into account the needs of the local labour market.

Historically, VET institutions have acquired a reputation for enrolling less motivated students with lower educational attainments[45]. This has led to some students who could have gained a trade on a VET programme attempting to stay on at upper secondary school in spite of their poor academic progress. Typically, this group of secondary school leavers cannot continue higher education (HE) study nor find a job in the labour market, because they lack basic vocational training and a relevant vocational qualification. As a result many of them end up unemployed.

Statistical data shows that young people are more likely to be unemployed than older age groups (in spite of the fact that many young men are called up for military service in Ukraine). The most striking fact is that 40% of the unemployed among 15-19 year olds live in cities bearing in mind that unemployment is linked directly with delinquency. The unemployment level of the population according to gender, age and place of permanent residence in 2001 is shown in Table 1 (15,369).

Table 1. Level of unemployment of population according to sex, age and place of residence

	Total	Aged 15-19	Aged 20-29	Aged 30-39	Aged 40-49	Aged 50-59	Aged 60-70
All population	11.1	34.4	15.4	11.1	9.3	7.2	1.1
Women	11.0	36.0	15.0	11.0	9.7	6.7	0.9
Men	11.2	32.9	15.8	11.2	8.8	7.7	1.0
Urban population	12.6	40.1	17.1	12.7	10.7	8.4	1.7
Rural population	7.1	25.2	11.1	7.1	5.2	4.1	0.1

3. Problem Analysis

3.1. State and Trends of VET Development in Ukraine

The VET system is governed by the Law on Education dated 23 May 1991 and the Law on Vocational Education and Training dated 10 February 1998 (9).

The Cabinet of Ministers of Ukraine Decree dated 3 June 1999 approved the Regulation on multi-graded vocational education and training which establishes the following three attestation levels for VET institutions:

Level I: job training workshop courses;

Level II: vocational institutions;

Level III: higher vocational schools and centres for vocational education and training.

Thus, Ukrainian legislation has made provisions for the vocational training of the country's workforce.

[45] Notably, in the years of Ukraine's independence the best VET institutions changed their status and became higher educational (HE) institutions with I-II accreditation levels thus improving the quality of education.

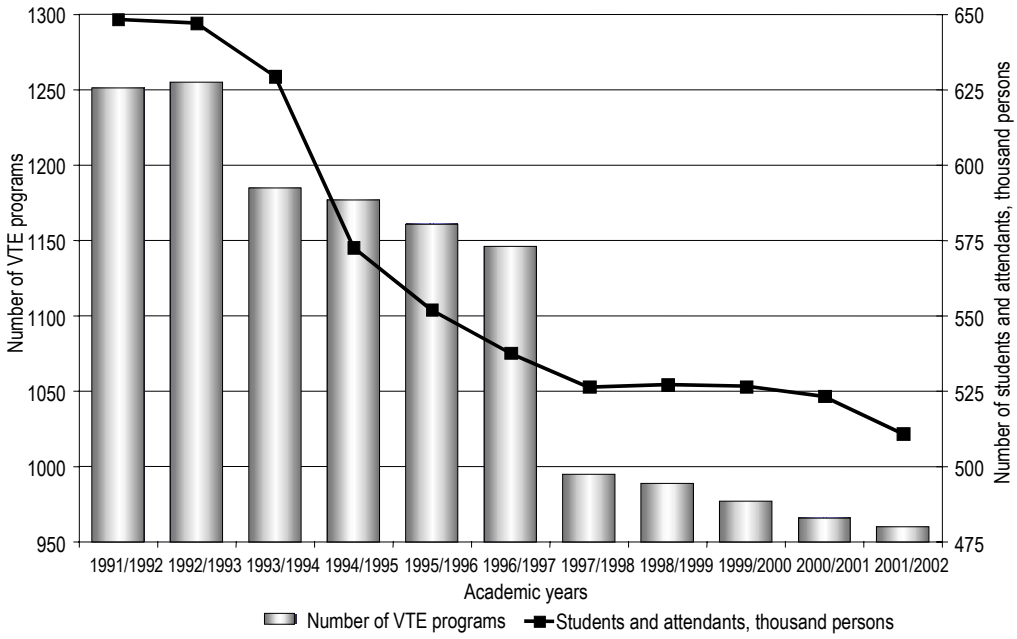
On 1 January 2003 VET institutions run by the Ministry of Education and Science of Ukraine totalled 957 VET with an additional three institutions for children with special needs run by the Ministry of Labour and Social Policy.

There are already 248 new types of VET institutions in Ukraine which included 135 higher vocational schools, 11 VET centres, 6 vocational art schools, 2 agri-business schools and 94 vocational lyceums. There are also 70 job training manufacturing complexes that incorporate VET programmes (5).

It should be noted that the quantitative indicators of the VET network for the years of Ukrainian independence show a significant downward trend (8).

Figure 1 shows that since 1997, enrollment to VET programmes has sharply decreased (by more than 10%).

Figure 1. Dynamics of VET Institutions under the jurisdiction of the Ministry of Education and Science of Ukraine



Today VET institutions provide education for about 478,000 secondary school leavers, 18,000 persons sent by the employment services and 5,000 workers upgrading their qualifications. Two-thirds of students are getting a complete general secondary education at the same time as learning a trade. Every second student acquires two or more professions (5).

The number of VET students per 10,000 of the population in the 2000/2001 academic year was 106 as compared to 125 in the 1991/1992 academic year (7, 11).

During recent years the VET system has provided training for 342 professions comprising 492 specialties (ibid). It should be mentioned that worldwide trends in the development of VET system point to a decrease in number of available specialties. In Ukraine about 1,000 students are trained in the same specialty. In the 2001/2002 academic

year VET institutions provided training in 990 professional specialties where 652 of them were combined. This is 5% higher than in the previous academic year (2).

Every year the number of ninth graders who continues to study in general secondary schools increases. Table 2 shows the dynamics of this situation in percentage terms as well as enrollment numbers to VET programmes following general secondary education (14, 4).

Table 2. Distribution of ninth graders (percentage) in different specializations following secondary education

Percentage of children:	1998	1999	2000	2001	2002
Continuing to study in Grade 10	66.1	67.4	67.5	68.5	68.9
Studying on VET programmes following general secondary school	17.6	17.9	18.7	20.0	22.2

It is worth noting that the number of places available on the VET programme network is unevenly distributed among regions (*oblasts*) of Ukraine. (Annex 1 gives details of the percentage of ninth graders continuing VET education throughout the regions.) Plainly the figures fluctuate from 28.4% in Luhansk Region to 13.6% in Rivne Region, i.e. by more than half.

The distribution of students with general secondary education in the 2001/2002 academic year is presented in Table 3 below (10).

Table 3. Distribution of students into specializations (in general secondary schools and higher education institutions with I-II accreditation levels)

	Grade 10	Grade 10 of night school	HE Institution, I-II accreditation levels	VET Institution	School leavers
1 January 2000	67%	4%	10%	17%	2%
1 January 2002	68.5%	3.8%	11.1%	15.8%	0.8%

The percentage of students who continue studying at general secondary schools and I-II accreditation level higher educational institutions increases while the percentage of students who continue to study at VET institutions decreases. In addition, for the last two years student dropout numbers have fallen sharply. This is explained by the introduction of a new grading system which practically eliminates the possibility of students remaining in the same grade for a second year.

The forecast, if the current situation continues with the VET system remaining separate against the backdrop of the demographic decline which started in 1986 (the number of ninth grade school leavers is already falling) and increasing number of available places in I-II level accredited higher educational institutions, is that there will be a sharp decrease in number of students wishing to study in VET institutions.

The VET system fulfills an important function in terms of protecting teenagers in social terms. Table 4 demonstrates the social status of VET students (8, 82; 14, 91-92).

Table 4. Indicators of social status of VET students

Students	1991/1992		2001/2002	
	Per thousand	%	Per thousand	%
Total	648.4	100.0	511.0	100.0
Including:				
Orphans without parental care	5.4	0.8	9.6	1.9
Single parent children	63.9	9.9	70.2	13.7
Children from problem families	No data	No data	21.6	4.2
Low-income	123.5	19.0	147.7	28.9
Handicapped	2.6	0.4	3.2	0.6
Total in indicated groups	195.4	30.1	252.3	49.4

The given data shows that in comparison with 1991, the proportion of children in need of social assistance was less than a third (30.1%), while in 2000 the percentage had grown to almost half the total (46.9%). Such a dramatic situation is mainly related to the deep economic crisis that prevails in Ukraine.

In this context what is positive is the fact that the state assures social protection within the VET system for orphans and children left without parental care as well as for other categories of youth. According to Cabinet of Ministry of Ukraine decrees these children are fully provided for by the state, i.e. they are given a grant totaling UAH 34 as well as free meals. Of all the funds allocated for VET by the state budget 18% are for student social welfare (11, 21). That is why studying at VET institutions is especially attractive for children from socially unprotected strata of society.

Despite the fact that "Ukraine's VET system is called upon to ensure the exercise of its citizens' right to vocational education and training and to meet the country's economic demands in skilled and competitive workers in the labour market" (2, 267) the Law on Vocational Education and Training stipulates that the state is the only "consumer" of trained workers and their distribution and employment is taken care of exclusively by representatives of state bodies or enterprises (ibid). Moreover, the law actually denies private employers any influence in the formation of specialization lists and the setting of standards for training new workers. This is also true for the public at large, the students' parents and the VET students themselves. "The emergence and intensive development of different forms of ownership resulted in a considerable slackening and, in the majority of cases, ruination of the links between the VET system and the sectoral bodies of economic administration, VET programmes and enterprises. Today new mechanisms are lacking for the participation of employers and social partners in the training of the labour force," the Ministry of Education of Ukraine has pointed out (5).

In spite of this it is not uncommon today for private enterprises to allocate jobs to the greater percentage of qualified workers.

3.2. Main Problems of the VET System

According to the opinion of Ukrainian experts the main problem of the VET system in Ukraine today includes the following (5):

- unsatisfactory resources and financial support for VET reform;
- disparity between the vocational competence of VET managers and instructors and the growing requirements of a well-trained workforce;
- incompatibility of old-fashioned and worn resource equipment of VET programmes with IT development requirements;
- absence of forecasting requirements for training specialists in different trades;
- inefficient administration of the VET system at the national and regional levels.

World Bank experts studying VET problems in Eastern Europe pointed out the following three aspects (1):

- High cost (specialized education of one student costs two-four times more than general education);
- Low efficiency (early specialization, especially in a narrowly defined area, is incompatible with the flexibility of training required by the market);
- Encouragement of unequal opportunities (early and narrow specialization divides students on the basis of their parents' income and education).

European Education Fund experts point out the large dropout rate among VET students as compared with their secondary school counterparts (12, 20). It is mentioned that the large level of dropout (a difference of more than three times) could be caused by:

1. Yhe low quality of instruction (VET instructors on average are not as highly qualified as those engaged in general secondary schools and HE programmes and frequently they also lack training in teaching and didactics).

Given the economic crisis of the previous years and low pay, highly skilled and experienced teachers are leaving VET programmes. The vacancy rate for instructors is now 10% and for industrial training instructors 15%. VET teaching staffs are getting noticeably older and this problem is bound to become acute in the future (2).

2. Another reason for the high dropout rate is low student motivation and also inadequate VET equipment.

The extremely restricted sectoral orientation of workers is another problem of the VET system. Today there is a large number of restricted qualifications and students are expected to choose what area they wish to qualify in relatively early in their studies. In Soviet times such an approach was dictated by the laws of the planned economy. Throughout the past few years the labour market has changed markedly and continues to develop along the standards of the market economy. Among the main changes is the emergence of private employers, great reduction in traditional forms of employment following the restructuring of the military-industrial complex and a part of the traditional manufacturing sectors, expansion of the services sector and the rather high rate of job rotation.

In view of the foregoing, it would be worthwhile to replace an expensive extremely specialized education with vocational education and training on a broad basis, thus reducing the number of specializations. Training in practical skills should be retained in school programmes and general secondary education should be encouraged. This will result in better chances of future employment (increasing the opportunities to change trades, as the labour market requires) and reduce allocations to the payroll fund of instructors, i.e., raise the efficiency of training.

4. General Recommendations for VET Quality Improvement in Ukraine

In generalizing the main development trends and problems characterizing the VET system today, we think it reasonable to suggest the following principal changes:

1. restructuring the narrowly specialized list of trades and introducing new and broader specializations in the job training process;
2. making the substance of training more competence-oriented;
3. reforming training methods and techniques, preparing students for possible organizational and technological in the workplace;
4. changing the VET system of jurisdiction by transferring VET institutions from the central level of government to the regional (*oblast*) level of government;
5. incorporating VET modules into an integrated profile upper secondary school system;
6. establishing a social partnership between VET programmes and employers, VET programmes and HE programmes, specifically at the local level.

A number of European Education Fund and International Labour Organization projects are dealing with the problems of VET system reform in Ukraine, namely the problems listed above as 1), 2), 3) and 6).

In the given research we offer policy options for changing the administration of the VET system referred to in 4), 5) and 6).

5. List of Policy Options

During the course of our research the following policy options were drawn up for the purpose of finding a solution to the problem of the divide between general secondary education and vocational education for senior school students:

Policy Option A. To change the VET system of jurisdiction by transferring VET institutions from the central level of government to the regional (*oblast*) level of government.

Policy Option B. To incorporate VET modules into an integrated profile senior school system.

6. Description of Policy Options

6.1. Description of Policy Option A

To change the VET system of jurisdiction by transferring VET institutions from the central level of government to the regional (*oblast*) level of government in order to bring VET closer to local labour markets and to establish a close interrelationship with senior schools

In the Ministry of Education and Science study "On the Status and Prospects of Development of Vocational Education and Training in Ukraine" in the section entitled "Improvement of the VET Management System" it is pointed out that "... improvement of the management of VET development can be realized by means of the redistribution of the functions of central and local levels of government in favor of regions and their autonomous management of VET institutions" (5). Given that the Ukrainian government is already considering the possibility of this transfer of power we propose an option (based upon the results of our research) whereby the VET system is in fact put under direct control of educational departments of regional (oblast) state administrations (OSAs).

A possible option would be to leave some VET programme areas with regional status under the direct control of the Ministry of Education and Science (such as, printing, communication, art, and railroad schools). In the future some of these schools might change their status and become higher education (HE) institutions with I-II accreditation levels.

As mentioned earlier, there is a growing proportion of ninth graders who continue to study in Grade 10 and at HE institutions with I-II accreditation levels while at the same time student numbers on VET programmes after Grade 9 are falling. Given the steady trend of fall in population it is possible to forecast a situation where there will be a sharp reduction in VET students. That is why, with the support of the OSAs and in cooperation with the employment services it would be appropriate to organize vocational training for the unemployed on the basis of VET institutions.

In addition by putting OSAs in charge of VET programmes there is more likelihood that the social partnership between VET administrations, private employers and HE institutions will be stronger thanks to local government mediation. OSAs could promote on-the-job training at enterprises and, possibly, introduce module credits for VET programmes which will be recognized by HE institutions under respective agreements.

Another positive aspect of this switch of power is the help that can be expected from local government to supply VET premises with heating and electricity. It would be advisable at this stage to pass a law explaining VET institutions rights over their property and which protects them from being sold without agreement by the Cabinet of Ministers.

Change of jurisdiction does have several drawbacks caused by regional (*oblast*) differences in social and economic development, availability of finances and uncertain future demands for a qualified workforce. That is why it is necessary to apply a flexible approach to the proposed policy option in order to prevent the ruination of the existing VET system in separate regions (*oblasts*) and in the state in general.

6.2. Policy Option B

To incorporate VET modules into an integrated profile senior school system in order to use more efficiently the material and personnel potential of VET institutions when introducing multi-profile courses in senior school

Option B involves transferring control of some VET programmes (I-II attestation level VET programmes) to local governments or district (*rayon*) administrations. In this case control of higher vocational schools and VET centres, i.e. III-level attestation VET programmes would not be transferred to the local level of government.

During the move to a new twelve-year school and introduction of profile education at upper secondary school level the question regarding its structural separation will arise. It will be difficult within the framework of available resources to ensure the introduction of specialized courses in one or more classes concurrently, especially in small rural schools. It will be necessary to introduce district schools in the rural areas, possibly with boarding house facilities, offering a wide range of profiles. Alternatively students could be bused to schools offering several classes in specialized subjects. This would allow teaching resources and staff to be pooled more efficiently.

Vocational lyceums will mainly be attended by students without a propensity to high academic achievement. The opportunity to pass from a vocational lyceum to an academic one (humanitarian, natural history, or economic) will make vocational lyceums attractive for a lot of students who currently continue to study in Grade 10 of general secondary schools without any motivation whatsoever. The establishment of vocational lyceums on the basis of VET institutions as an available senior school profile will be an important step in reforming the Ukrainian system of education.

The transfer of control of some VET programmes to the local level of government or district (*rayon*) administrations will allow resources (premises, equipment, teaching staffs) to be used more efficiently, strengthen social partnership and increase the local government answerability for VET institution activity.

Another positive aspect of this option is the savings that will be made. The education of one student in secondary school is two to four times less costly than that of a student in a specialized vocational school. Within the framework of a single system the local authorities will try to use funds and available resources more efficiently for education in lyceums offering different specializations.

For the successful implementation of this option it is necessary to assume that the local level of government will provide additional funds for the maintenance of VET institutions. The extra expenditure involved will have to be calculated when introducing respective amendments to the Budget Code of Ukraine.

It would be appropriate (given the existing situation of mixed groups of students: those with a general secondary education and those with a complete secondary education) to divide them structurally. These groups should be structurally divided in the following manner. Insofar as under the Ukrainian legislation upper secondary school should consist of academic lyceums and trade lyceums of different profiles, vocational lyceums could admit school leavers who failed to obtain secondary school diplomas.

Students with a complete secondary school education can continue studying at higher vocational schools. In this case a secondary school leaver will have either a skill or will be able to continue studying.

7. Conclusion

This analysis has made it possible to draw up and suggest policy options for dealing with the problem of the divide between general secondary education and vocational education at senior school level. The question remains open as to who should be the agent for these changes. Should it be the Ministry of Education and Science of Ukraine, OSAs or regionally controlled cities or districts?

It is clear that this is an extremely complex issue and requires amendments in current legislation. However, in our opinion, this is the most efficient way of solving the problem.

The proposed recommendations require further discussion among all stakeholders. Such an approach will encourage efficient ways to be found to incorporate them into the Ukrainian educational system as well as improve the quality of senior school education in particular.

8. References

1. Вандайк Н. Доступ бідних до освіти в Європі та Центральній Азії. – Технічний документ Світового банку. – № 511.- 36 с. (N.Wandyke. Access of the Poor to Education in Europe and Central Asia. Technical Document of the World Bank. No.511. – 36 p).
2. Засідання Верховної Ради України від 11.03.03. (Session of Supreme Rada (Parliament) of Ukraine of March 11, 2003). – http:// www.rada.gov.ua
3. Газета "Освіта", № 58, 18-25 грудня 2002р. (Newspaper Osvita (Education), No.58, December 18-25, 2002).
4. Газета "Освіта України", № 101, 20 грудня 2002 р. (Newspaper Osvita (Education), No.101, December 20, 2002).
5. Інформаційно-аналітичні та довідкові матеріали МОН України "Про стан і перспективи розвитку професійно-технічної освіти України. (Information-Analytical and Reference Materials of the Ministry of Education and Science of Ukraine. "On the Status and Prospects of Development of Ukraine's Vocational Education and Training". – http://www.mon.gov.ua
6. Корсак К.В. Стан освітньої системи України. Біла книга. – Київський інститут освітньої політики. – К. – 1999. – с. 37-39. (K.Korsak. The State of Ukraine's Education System. White Book. Kyiv Institute of Education Policy. Kyiv, 1999, p.37-39).
7. Національна безпека і оборона. / Український Центр Економічних і Політичних Досліджень ім. Олександра Разумкова, № 4, 2002, с.3-33. (National Security and Defense./A.Razumkov Ecomonical and Political Studies Centre, No.4, 2002, p.3-33).
8. Освіта України. Інформаційно-аналітичний огляд. / Під загальною редакцією В.Г. Кременя. – К.: ЗАТ "НІЧЛАВА". – 2001. – 224 с. (Ukraine's Education. Information-Analytical Review. Kyiv: Nichlava Publishers. – 2001. – 224 p).

9. Освіта України. Нормативно-правові документи. – К.: Міленіум. – 2001. – 472 с. (Ukraine's Education. Laws and Regulations, Kyiv, Millenium Publishers, 2001, 472 p).
10. Показники розвитку загальної середньої, дошкільної, позашкільної та професійно-технічної освіти (за підсумками 2001/2002 навчального року) / Міністерство освіти і науки України. – К. – 2002. – 72 с. (Development Indicators of General Secondary, Preschool, Extra-School, and Vocational Education and Training Establishments (Summary of the 2001/2002 Academic Year). Ministry of Education and Science of Ukraine. – Kyiv. – 2002. – 72 p).
11. Профессиональное образование и обучение в Украине. МОН Украины, Национальный наблюдательный центр Украины.- Киев. – 2001. – 40 с. (Vocational Education and Training in Ukraine. MES, National Monitoring Center of Ukraine. – Kyiv.- 2001. – 40 p).
12. Профессиональное образование и профподготовка в новых независимых государствах (бывшего Советского Союза) и Монголии. Доклад. Ключевые индикаторы. Европейский Фонд Образования. – 2000 г. – 63 с. (Vocational Education and Training in the New Independent States (former Soviet Union) and Mongolia. Report. Key Indicators. European Education Fund. – 2000. – 63 p.).
13. Статистичний збірник: загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (1996-2000 рр.) / Міністерство освіти і науки України. – К.: ВВП "Компас". – 2001. – 136 с. (Statistical Collection: General Education, Extra-School, Preschool, and Vocational education and training Establishments (1996-2000). Ministry of Education and Science of Ukraine. – Kyiv: Compass Publishers. – 2001. – 136 p).
14. Статистичний збірник: Загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (2000-2001 р.р.) / Міністерство освіти і науки України. – К.: ВВП "КОМПАС". – 2002. – 112 с. (Statistical Collection: General Education, Extra-School, Preschool, and Vocational Education and Training Establishments (2000-2001). Ministry of Education and Science of Ukraine. Kyiv: Compass Publishers. – 2002. – 112 p).
15. Статистичний щорічник України за 2001 рік. / За редакцією Осауленка О. Г. – Державний комітет статистики України. – К.: "Техніка". – 2002. – 647 с. (Statistical Yearbook of Ukraine for 2001. Under the general editorship of O.Osaulenko. State Committee of Ukraine for Statistics.- Kyiv: Tekhnika Publishers. – 2002. – 647 p).

9. Annexes

Annex 1

Grade 9 graduation structure in 2001

Region (Oblast)	Students continuing education in Grade 10 of daytime general secondary schools	Students continuing education in I-II level accredited higher educational institutions	Students not continuing education	Other categories (VET institutions + night-schools)
Autonomous Republic of Crimea	73.1%	4.5%	4.6%	17.8%
Cherkasy	75.0%	9.6%	1.4%	14.0%
Chernihiv	76.0%	7.1%	2.7%	14.2%
Chernivtsi	61.5%	14.2%	3.9%	20.4%
Dnipropetrovsk	65.8%	8.9%	3.4%	21.9%
Donetsk	61.2%	12.5%	2.9%	23.4%
Ivano-Frankivsk	62.6%	14.4%	2.2%	20.8%
Kharkiv	73.0%	10.3%	0.5%	16.2%
Kherson	64.7%	11.1%	4.0%	20.2%
Khmelnitskyy	70.3%	10.4%	0.3%	19.0%
Kirovohrad	68.9%	11.2%	3.3%	16.6%
Kyiv	69.6%	10.4%	2.4%	17.6%
Kyiv City	77.5%	10.0%	0.1%	12.4%
Luhansk	57.6%	13.9%	0.1%	28.4%
Lviv	70.7%	10.2%	0.1%	19.0%
Mykolayiv	64.2%	10.5%	2.9%	22.4%
Odessa	67.2%	11.0%	1.8%	20.0%
Poltava	67.9%	11.8%	0.6%	19.7%
Rivne	71.7%	10.5%	4.2%	13.6%
Sevastopol City	73.9%	7.1%	0.9%	18.1%
Sumy	63.0%	13.7%	0.1%	23.2%
Ternopil	59.5%	17.0%	0.2%	23.3%

Transcarpathia(n)	64.1%	12.0%	3.5%	20.4%
Vinnitsya	64.5%	16.0%	1.5%	18.0%
Volyn	68.8%	11.3%	1.0%	18.9%
Zaporizhzhya	65.0%	11.3%	0.2%	23.5%
Zhytomyr	69.4%	12.1%	1.3%	17.2%
Total in Ukraine:	**67.3%**	**11.1%**	**1.9%**	**19.6%**

Статистичний збірник: Загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (2000-2001 рр.) /Міністерство освіти і науки України. – К: ВВП "КОМПАС". – 2002. – 112 с. (Statistical Collection: General Education, Extra-School, Preschool, and Vocational Education and Training Establishments (2000-2001). Ministry of Education and Science of Ukraine. – Kyiv: Compass Publishers. – 2002. – 112 p).

Olena LOKSHYNA

School Work Efficiency Evaluation

1. Executive Summary

The process of decentralization of education which is taking place in Ukraine today raises the problem of answerability before society for the results of aspects of a school's activity and how its work can be best evaluated. The present system for monitoring the work of the educational establishment is currently undergoing reform and is characterized by the replacement of old evaluation methods with a new model. The problems connected with a period of transition and economic crisis with corresponding difficulties in the field of education funding have rendered the **system of state control and evaluation of school work in Ukraine ineffective today**. It is unable to perform the functions of objective evaluation of school work for the purpose of increasing its efficiency and improving the quality of educational services provided.

The ineffective system of state control and school work evaluation makes it necessary to look for ways to improve the existing situation. Development of this problem within the framework of the second stage of the Project: "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" [46] has proved to be a logical answer to the demands of Ukrainian society to ensure a high standard of education on an international level.

The work analyzes the international experience, expounds positive characteristics of school inspection systems abroad, and makes a comparative analysis of the main approaches adopted in other countries for the purpose of inspection and monitoring of school work.

The research carried out has made it possible to propose the following recommendations for improving the efficiency of the Ukrainian school evaluation system:

Recommendation A. Creation of an institution responsible for school monitoring with controlling, supervising and counseling functions;

Recommendation B. Introduction of a system of regular school inspections between the 10-year state attestation periods;

Recommendation C. Introduction of support mechanisms for weak schools;

Recommendation D. Publicizing the results of school evaluation.

[46] The first stage of the Project (2001) realized the Program of support for development of the strategy of education reforming in Ukraine – National Doctrine of Education Development. The second one (2002) is aimed at the elaboration of the recommendations for the Ukrainian Government on implementation of the most topical problems defined in the National Doctrine.

2. Introduction

The announcement at national level of the priority of a high standard of education presupposes the active transformation of all constituents of the education system[47]. School efficiency is one of the main ways of achieving quality assurance in education.

The present state of state control of school activity is characterized by the:

- announcement of a new control model which has only just been introduced;
- delegation of authority to control from top to lower level authorities (from the MOES to regional and city departments of education); and
- abolition of old inspection systems;

The normative base for control of the educational establishment is set out in the Constitution of Ukraine, Laws of Ukraine "On Education" (with changes and amendments introduced by the Cabinet of Ministries of Ukraine of 7 December, 2000, No.2120-III); "On General Secondary Education" (No.651-XIV, 1999); the Presidential Decree "On Measures for Improvement of Educational Institutions Activities" (with changes and amendments introduced by the Cabinet of Ministries of Ukraine of 6 April, 2000, No. 1642-III and of 7 December, 2000, No. 2120-III); the Resolution of the Cabinet of Ministries of Ukraine "On Licensing, Attestation and Accreditation of Educational Institutions" (of 12 February, 1996, No. 2000); Order No.66 of the Ministry of Education and Science of Ukraine of 5 March, 1996 "Model Provision on Attestation of General Secondary, Out-of-School, Pre-school Educational Institutions and Institutions for Citizens who Require Special Social Assistance and Rehabilitation"; Order No.553 of the Ministry Education and Science of Ukraine of 24 July, 2001 "On the Procedure for State Attestation of General Secondary, Pre-school and Out-of-School Educational Institutions".

It is defined on a legislative level that the main form of state control of activities of all forms and types of general secondary educational institutions is state attestation which should be conducted not less that once every 10 years in accordance with the Ministry of Education and Science of Ukraine.

Between attestations an evaluation (inspection) of general secondary educational institutions will evaluate aspects of their educational activity.

Thus, the new model of control of the education establishment can be set out as follows:

Table 1. New Model of the Education Establishments Control

Type of the control	Content of the control	Frequency of the control
State attestation	Complex control of the activity of an educational institution	Once every 10 years

[47]See.: Decree of the President of Ukraine "On National Doctrine of Development of Education"/ "National Doctrine of Development of Education" / 17/04/2002. №347/2002; Законодавство України про освіту. Збірник законів. – К.: Парламентське видавництво. (Legislation of Ukraine on Education. - Collection of Laws. - K.: Parliamentske Vydavnytstvo). - 2002. – 159 p.

Inspection	Control of an educational institution in terms of its educational activity	Several times between state attestation (according to plans of local education authorities) and not more than 1-2 times per year.

This approach differs from the previous one in that inspection is the main form of school evaluation. Formerly the inspecting bodies carried out continual and cumulative inspections under the governing education authorities:

Table 2. Forms of School Activities Evaluation

Type of the control	Content of the control	Frequency of the control
Cumulative inspection	Included frontal examinations of every school	Once in 5 years
Continuous inspection	Included thematic inspection and plans examinations	Several times between the cumulative inspections

The process of introducing a new model is faced by several of the following problems:

- announcement of a new state control model has not been accompanied with the creation of an independent institution responsible for school evaluation. This will make it impossible to introduce unified approaches to school control as well as to compare objectively institutions from different districts, oblasts and regions of the country;
- normative declaration of attestation as the main form of control is not fully supported scientifically, methodically and technologically, i.e.education evaluation criteria, school self-evaluation procedures, mechanisms for publicizing school evaluation results as well as for assisting weak schools are still under elaboration..
- establishing state attestation as the main form of control will diminish the role of inspection within the state control system. It will acquire a fragmentary character with fewer inspector-methodologists in employment. This will result in the overloading of regional and city educational department employees, in their full dependence from local authorities and correspondingly, in the impossibility of ensuring a high standard of state control of school work.

The mentioned problems make **the system of state control and school work evaluation in Ukraine ineffective** today. In other words it is unable to fulfill the functions of objective evaluation of aspects of school activity for the purpose of increasing efficiency.

Results of polls of different categories of stakeholders provide evidence for this. For example, the poll organized within the framework of the pre-project research work “State Control of Governance and Educational Quality in Secondary Education Institutions in Ukraine (September 1997-March 1998) indicated a low level of school evaluation by different sections of the population (2).

A poll of participants of the December 2002 regional seminars (Cherkasy, Mykolayiv, Ternopil and Luhansk) organized within the framework of the Project:

"Education Innovation and Renewal for Improved Well-being and Poverty Reduction" reflected critical aspects of the problem of education evaluation in Ukraine. The main ones named by the participants are:

- Badly functioning Regional Expert Councils (their establishment was declared at legislative level);
- Absence of evaluation criteria (their elaboration is in progress now);
- Absence of relevant scientific and methodological support for school evaluation procedures;
- Absence of information about influence of evaluation results on teachers' salaries.

Although the limited number of respondents and orientation at limited target groups (secondary education employees only) means that the results received cannot be interpreted as widely representative of society, the data does testify to a general trend in our understanding of the existing problem as well as its causes.

3. Analysis of the problem of evaluating school efficiency

Objectively, the formation of a new school evaluation model in Ukraine is bound to create a situation characterized by the creation of impractical approaches and mechanisms as well as the inexperience of innovation. Under these circumstances it seems most appropriate and expedient to analyze Ukrainian school efficiency by applying the expertise of other countries and an evaluation model used internationally which is based on three main components:

1. Evaluation Agency;
2. Evaluation Process;
3. Evaluation Results.

3.1. Evaluation Agency

In the absence of an independent institution (an inspectorate) for appropriate control of the work of the educational establishment in Ukraine and the setting up, by law, of regional expert councils, a redistribution of power is currently taking place between these councils and local educational departments at a regional level.

In compliance with the Ministry of Education and Science Order No. 553 of 24 July, 2001, organizational maintenance and educational institutions attestation is entrusted to regional expert councils attached to the Ministry of Education and Science of the Autonomous Republic of Crimea, oblast education and science directorates and Kyiv and Sevastopol city state administrations. But (as poll results testify) these councils do not practically function in many regions of the country.

Regional and city education departments are responsible for the inspection during the period between 10-year attestations. In practice, however, with the cut-back of inspector-methodologist positions these departments are extremely overloaded and can hardly organize an efficient examination process (school inspection is the responsibility of education department employees who fulfill many other duties in addition to this one).

The absence of a centralized approach (absence of unified criteria, evaluation instruments and result processing) to control school activity is another serious problem. It

leads to an increase in subjectivity within the control process and dependence upon local conditions[48].

The problems mentioned above are dealt with abroad by the establishment of appropriate institutions or inspectorates for monitoring school efficiency. In many countries this institution is independent of a ministerial education body (Great Britain) or is an independent sub-division of a ministry (Czech Republic, Flemish part of Belgium, France and the Netherlands). Modern foreign inspectorates perform control, evaluation, advising, monitoring and forecasting functions.

Usually these inspectorates employ inspectors who are qualified employees with relevant training and who possess civil servant status (the main staff of the inspectorate). Besides permanent inspectors many countries recruit additional inspectors on a contract basis and who make up teams or brigades.

The number of inspectors per school varies in different countries (11):

Table 3. Number of Inspectors per School, Students and Teachers in the European Countries

Country	Number of inspectors	Number of schools	Number of students	Number of teachers
The Czech Republic	205	7923	1 714 974	119 006
France	3 390	42 172	9 612 000	690 271
England	1 940 registered inspectors + 8 517 team inspectors = 10 457	21 950	6 293 280	364 000
Netherlands	121 + 9 main inspector-coordinators	7 886	2 358 600	141 700

The existence of permanent qualified inspector staff and the hire of additional employees (who usually receive special training) substantially lowers the number of institutions per one inspector:

Country	Inspector/schools ratio	Inspector/students ratio	Inspector/teachers
The Czech Republic	39	8 366	581
France	12	2 835	204
England	11	3 244	188
Netherlands	61	18 143	1090

[48] Experiments taking place in Ukraine on monitoring the quality of school education (Kherson, Lviv, Poltava and Kharkiv oblasts, Vinnytsya oblast, Zaporizjya, etc.) testify to the necessity to improve the existing situation regarding school evaluation, to search for ways to overcome the drawbacks and to master new mechanisms.

On the basis of the fact that today Ukraine has 22,200 schools with 6, 601,000 students (9) and taking into consideration the mean correlation "inspector/schools/ students/teachers" in the countries mentioned above Ukraine may need approximately 1,500 – 2,500 inspectors for conducting school inspection.

The duration of inspector training depends upon the position to be filled in the inspectorate system. For example, in Great Britain H.M. inspectors are civil servants; registered inspectors receive long-term training and sign a contract to conduct inspections; professional members of inspector teams get 5-days training and pass a 1-day evaluation in 5 types of competences mastering.

It should be mentioned that besides fulfilling its main function, i.e. the function of control, an accentuation of the supervising and counseling functions of inspectorates is a significant trend in the development of the inspectorate systems in many foreign countries today. That is along with the responsibilities of control and evaluation of educational institutions the role of the inspectorate also involves the elaboration of mechanisms to improve their work and to counsel them[49].

Common methods used by inspectorates abroad to overcome drawbacks revealed during inspection include:

- Designing and applying improvement plans for school work (practically the majority of Western European countries);
- Re-evaluation of educational institutions (at the beginning of the next school year in the Czech Republic; in 45 calendar days in the Flemish part of Belgium; in 1-2 years in Scotland; in 6-7 years in Ireland);
- Fining School Heads (Czech Republic);
- Teacher dismissal (France);
- School Head dismissal;
- Annulment of school accreditation certificate (USA).

Monitoring and forecasting are other important functions performed by modern foreign inspectorates. In many countries the inspection reports are a constituent part of the annual reports to ministries of education. Based on the collected statistical data on student performance, number and qualification of teachers, number of schools, inspectorates monitor educational systems, analyze trends for educational development and evaluate the efficiency of educational policy for making forecast (OFSTED in England and Wales).

3.2. Evaluation Process

The main task for inspectorates abroad today is to examine the level of educational standards achieved by students. In addition, emphasis is placed on the quality of instruction, financial and human provision and staff management.

[49] In Ukraine the mechanisms for giving advice as well as post-inspection or post-attestation examinations are not worked out enough. The usual options for evaluation results analysis are their discussion with school heads at meetings in regional departments of education as well as posting up the results in tabulated form in these departments.

In Ukraine the Ministry of Education and Science Order No. 553 stipulates that the main task of attestation is to evaluate:

1. the real state of organization of the educational process, off-hour, correction, rehabilitation and medicinal work taking into consideration the declared status and the specific character of an educational institution;
2. correspondence of the educational achievements of students to the requirements of educational programs; guaranteeing of students' education and development, preparation for continuation of education or their future labor activity;
3. conditions of work of an educational institution, its material, technical, scientific, methods, production, cultural, sportive, correctional, medicinal base; health norms, potential to provide secondary, pre-school or out-of-school education; realization of educational programs of an institution and prospects of its development;
4. insurance of studying in and usage of the Ukrainian language, satisfaction of needs of the Ukrainian national minorities in studying Russian or other languages of national minorities;
5. quality composition and professional mastery of a head and pedagogues;
6. efficiency of educational institution management.

The Order mentioned above stipulates examination of the same aspects of school work as in the majority of foreign countries. The difference is in the absence of correspondence with educational standards because these had still not been laid down at the time the document was adopted in Ukraine. Today given the already passed State Standard (September, 2003) it is necessary to correlate existing legislation with new improvements in Ukraine and as well as with the main trends emerging in the world.

Special flexibility in the application of types of inspection (extended/full/complex, standard, orientation, short, departmental and others) is a widespread characteristic of many school evaluation models abroad.

Ukraine (since Soviet times) has experience of different types (frontal and thematic) of inspection too. The difference, however, lies in the excessively long period (10 years) between complex evaluations (in the form of state attestation) envisaged by the Order.

Self-evaluation procedures by law now constitute the main introductory part of state attestation which testifies to the fact that international trends and the work of Ukrainian pedagogues[50] have been taken into consideration. It should be mentioned, however, that the successful implementation of self-evaluation procedures is regarded by many foreign countries as a remote prospect in their school evaluation activity. It can only really be contemplated after the introduction and successful operation of state forms of school evaluation. Besides, self-evaluation procedures require a team of competent school managers (school heads and assistants) who possess sound management skills and can evaluate adequately and objectively the activity of their organization.

[50] See, for example, Оцінювання якості роботи школи. Порадник. – Львів: ЛМГО "Інститут політичних технологій". – 2001. – 102 с. (School Work Quality Evaluation. Manual. – Lviv: LMGO: Political Technologies Institute. – 2001. – 102 p.).

Today in Ukraine the criteria for school evaluation are being elaborated (representatives of the Ministry of Education and Science, the Central Institute of In-Service Teachers' Training and other research institutions of the Academy of Pedagogical Science of Ukraine are participating in this work). It is intended to include the following elements as indicators of educational activity:

- Efficiency of the educational process (level of the performance of students and graduates of an institution; effectiveness of the system of national upbringing; insurance of health and physical development of students; social prestige of educational institutions);
- Level of organization of educational activity (organization of the educational process; state of material, technical, educational and instructional base, availability of staff,; social protection; preservation of health of students and employees; the management system);
- Additional trends and indicators of educational activity which characterize this institution.

As seen from the above mentioned the inclusion of indicators of educational activity of the educational establishment is an innovative move. It corresponds to the latest, value-added approach being adopted internationally in the evaluation of school activity. The importance of introduction of this kind of approach was stressed more than once in December 2002 regional seminars (Cherkasy, Mykolayiv, Ternopil and Luhansk). However, (as foreign expertise testifies) the successful implementation of this idea could be considered as a long-term strategy because of the great difficulties in defining, elaborating and implementing value added criteria.

3.3. Evaluation Results

Making the results of school work evaluation public is evidence of the openness of an educational system and fulfills the principle of equal access to quality education.

Item No. 26 of the Ministry of Education and Science Order No. 553 stipulates making the results of educational institution attestation public through the mass media. Although this reflects the approaches adopted by other countries Ukraine still lacks the experience and developed mechanisms for such a procedure.

The publicizing of school evaluation results abroad takes into account the interests of all the main consumers of this information, i.e. teachers, school heads, parents, students and the general public.

The following are the main variations for making the results public (which could be done separately or as a complex):

1. Sending an inspection report to a school;
2. Giving parents the chance to see the report;
3. Giving everybody who is interested the chance to see the report;
4. Publication of inspection results in the mass media.

The procedures for publicizing school inspection results in some European countries include:

Table 5. Procedures for Publicizing School Inspection Results in Some European Countries

The Czech Republic	Denmark	Netherlands
▪ the Inspectorate sends a report to a school, members of the school board, local educational authorities; ▪ a regional department of the Inspectorate gives everybody the chance to see the results of the inspection during the 10- years period from the date of the inspection.	▪ the Inspectorate publishes a report of the school inspection results; ▪ the Inspectorate sends the published reports to all schools; ▪ the Inspectorate gives parents the chance to see the school report; ▪ the Inspectorate gives the public the chance to see the results.	▪ the Inspectorate sends the report to a school and to all educational authorities; ▪ a school has the right to make the inspection results public by publishing them.

In view of the usually long length of an inspection report the preparation of two versions of the report (a full and shorter version) as in Denmark (100 and 10 pages) seems to be the most appropriate. The first one is for office use and the second one is for publication.

4. List of Recommendations

The formation of a new model for monitoring the education process requires detailed mechanisms to be developed for its successful implementation and correlation. In this context the following recommendations for the main areas of the school monitoring process seem to be the most appropriate ones:

Recommendation A. Creation of an institution responsible for school monitoring with controlling, supervisory and counseling functions;

Recommendation B. Introduction of a system of regular school inspections between 10-year state attestation periods;

Recommendation C. Introduction of improvement mechanisms for weak schools;

Recommendation D. Publicizing school evaluation results.

5. Description of Recommendations

Recommendation A. Creation of an institution responsible for school monitoring with controlling, supervisory and counseling functions

Creation of an independent institution/center/agency responsible for school work monitoring is one of the aspects which would help promote the implementation of a coordinated monitoring system in Ukraine. Creation of an institution (1) with legal authority (2) which will have the right to elaborate and implement unified criteria and standards for school work evaluation as well as (3) filling vacancies with qualified employees with appropriate training will make it possible to receive objective information

on the level of educational performance in all regions of Ukraine for its comparison and the elaboration of recommendations for developing educational policy.

Such institution should have the following authority:

- to carry out all types of examination of the activity of an educational institution (state attestation, different types of inspection) with the help of qualified inspectors;
- to process the results of examinations, to make and to send reports to the Ministry of Education and Science of Ukraine;
- to develop and to implement the mechanisms for supporting weak schools;
- to develop and improve the criteria and principles for state control organization;
- to engage, train and re-train qualified inspectors;
- to make a comparative analysis of the efficiency of school work in different regions of the country as well as to make forecasts and to develop directions of the educational policy (jointly with the Ministry of Education and Science).

The creation of such a body will require changes in current legislation and additional financial resources.

A qualified staff is one of the main conditions necessary for the successful work of this body. In the event of employees of such an institution being awarded special status (for example, civil servant status) it will be necessary to develop a stringent recruitment mechanism. Education and work experience requirements as well as types of penalties for inappropriate job fulfillment should be envisaged.

This creates the necessity to train and retrain (at pedagogical universities and institutes of in-service teachers' training) qualified experts as well as appropriate scientific and methodological support staff for such training. The training courses should be aimed at the formation of pedagogical competencies and the acquirement of psychological and pedagogical skills.

Recommendation B. Introduction of a system of regular school inspections between 10-year state attestation periods

The problem of increasing the efficiency of education monitoring could be solved by introducing a system of regular school inspections between 10-year state attestation periods. It can be introduced effectively only in the event of fulfilling Recommendation A: i.e. creation of an independent institution responsible for monitoring school efficiency.

The introduction of a system of regular school inspection should aim, first of all, to expose existing drawbacks, to give advice and relevant support (introduction of improvement mechanisms for weak schools – Recommendation C) to improve the quality of education. Taking into consideration the fact that state attestation envisages detailed analysis of all aspects of school activity regular inspections could deal with separate problems relating to an educational institution's work.

An evaluation model for an educational institution's activity in Ukraine could be the following:

Table 6. Education Institutions Work Control Model

Type of the control	Control Content	Frequency of the control
State attestation	Complex control of the activity of an educational institution (in compliance with the MES of Ukraine Order No. 553 regulations	Once every 10 years
Inspection	Control of student achievement compliance with requirements of State Standards	Several times during the period between state attestation but not more than once every 2 years
Examination	Control by the state of separate problems	On the basis of educational body plans regarding the study of certain aspects of the national curriculum

Examination will be a means of receiving information about the entire nature of a separate problem on a national level. Its results can be used by the Ministry of Education and Science for correlation of aspects of the education policy.

Recommendation C. Introduction of improvement mechanisms for weak schools

The leveling mechanisms for weak schools could include:

- designing plans for improving the school process;
- co-operation with institutes of in-service teachers' training;
- co-operation with good schools;
- replacement of school heads;
- provision of additional financial resources;
- provision of additional human resources.

There is no doubt about the need to design plans to improve the school process. These should include a comprehensive list of measures that take into account the following:

- level of educational achievements of students, the correspondence of these achievements to the State Standards;
- state of the material and technical base;
- availability of staff;
- management system.

In addition, the plan should include special recommendations and their implementation as far as aspects (which received the lowest evaluation during the control process and are the main obstacles for a school's normal functioning) of the education process are concerned.

Co-operation with institutes of in-service teacher training would seem to be very useful in terms of getting methodological assistance from pedagogues of the educational institution. This option could be successfully implemented due to the fact that a network of such institutes already exists in Ukraine and also due to the feasibility of co-operation between them and many schools (discounting remote areas however).

For the latter co-operation with schools providing a high level of education is a more realistic option. However, mechanisms to stimulate school-patronage (financial and otherwise) should be proposed so that teachers and school-patrons can see the advantages of supporting weak schools.

The problem of locating additional financial resources requires detailed analysis. The fact that so many schools today are in a poor material and financial state points to a need for additional school funding. However this could develop into a new problem whereby motivation levels to improve educational service provision falls in the absence of financial support

As far as school head replacement is concerned it should be stressed that such an approach is not a very popular tool abroad. The main emphasis here should be that it is for the good of the education process and envisages an increase in school efficiency, first of all, by eliminating drawbacks and tracing the results of plans that have been seen through. However, given the genuine possibility that school heads perform unprofessionally, provision should be made for the development of an effective recruitment, evaluation and qualification upgrading system for school managers. It could be implemented by central and regional institutes of in-service teachers' training jointly with the Ukrainian Association of School Heads.

The education market and general public are two factors that greatly influence the quality of education service provision in developed countries. If it performs badly a school will lose its students, which is the main incentive for its own self-improvement. Given that in Ukraine such an instrument still works very slowly (especially in remote areas where choice is absent) the following leveling mechanisms for weak schools should be highlighted:

- designing improvement plans for school work;
- provision of additional human resources;
- co-operation with institutes of in-service teacher training;
- co-operation with good schools.

Recommendation D. Publicizing school evaluation results

The requirement by law now to publicize school evaluation results supports the idea already discussed by stakeholders during numerous meetings throughout Ukraine in the course of project realization.

However, the procedure for ensuring that the idea commonly held throughout the world that "evaluation results constitute a public document and should be open to everybody", does require detailed development of mechanisms for its implementation.

Item 25 of the Ministry of Education and Science Order No. 553 stipulates the only way of making results public is through the mass media. Taking into consideration the

experience of other countries Item 25 of the Ministry of Education and Science Order No. 553 could be implemented using the following steps:

1. discussing the evaluation results with school teachers;
2. allowing parents to see the results of evaluation;
3. allowing everybody who is interested the chance to see the inspection results;
4. producing a short version of the evaluation report for:
   a) press publication;
   b) Internet publication.

Public discussion of the examination results with school teachers and parents (with an analysis of positive and negative aspects of educational institution activity) is a precondition for making the results public. Given the poor participation of parents today in Ukraine (in particular, the small percentage of parents attending parents meetings) sending examination results by mail to the homes of students or giving results together with school progress records at the end of term or school year seems to be the most appropriate option.

In view of the lack of experience in publicizing school evaluation results it is expedient to entrust this responsibility with local education authorities (not schools). They are not interested in hiding the results and can make them public for everybody and, in the first place, for parents.

The proposal to prepare two types of inspection report is based upon the experience of countries which usually prepare two reports. A full report (up to 100 pages and more) is usually used by inspectorates for preparation of annual reports, development of trends analysis, and so forth. A full report on separate school activity should be included in the annual report of the inspectorate which is sent to the Ministry of Education and Science and other institutions in accordance with the law.

The short version of the report (not more than 10 pages) prepared for the general public is the best version for publication in the press and Internet.

Given that all regions of Ukraine are not on-line it seems sensible to pilot the introduction of an on-line report version at a few local sites (already on-line) only in order to gain some experience and to iron out any possible problems before implementing this scheme on a large scale.

6. Conclusion

There is no doubt that the problem of increasing the efficiency of the education process is very difficult and requires investment of substantial financial and human resources. This problem could not be examined without taking into consideration other important constituents that influence the level of national education, i.e. the student performance appraisal system, evaluation of teachers' work, and so on.

The proposed recommendations arising from research work on the Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" are possible ways of improving the efficiency of the system for monitoring and controlling educational performance. They require extensive discussion with governmental and scientific structures in the country for the purpose of drawing up further problem-solving measures.

7. References

1. Державна національна програма “Освіта” (“Україна XXI ст.”) // Освіта. – 1993. – Грудень – № 44-45-46. (State National Programme "Education" (Ukraine 21-st century) // Osvita (Education). – No. 44-45-46).
2. Державний контроль за управлінням та якістю навчання в середніх закладах освіти в Україні. Передпроектне базове дослідження. Вересень 1997 – березень 1998. За науковою редакцією Д.І.Дейкуна. – Київ: МОН, Британська Рада в Україні, 1998. – 65 с. (State Control of Governance and Educational Quality in Secondary Education Institutions in Ukraine. Pre-project Research Work. September 1997-March 1998. Under the Scientific Editorship of D.Deikun. – Kyiv: MOES, British Council in Ukraine, 1998. – 65 p.).
3. Законодавство України про освіту. Збірник законів. – К.: Парламентське видавництво. 2002. – 159 с. (Legislation of Ukraine on Education. – Collection of Laws. – K.: Parliamentske Vydavnytstvo. – 2002. – 159 p.
4. Конституція України: Прийнята на 5-ій сесії Верховної Ради України 28 червня 1996 р. – К.: Преса України, 1997. – 80 с. (Constitution of Ukraine passed at the 5-th Session of the Supreme Rada (Parliament) of Ukraine on 28 June 1996. – K.: Pressa Ukrayiny, 1997. – 80 p.).
5. Матеріали експериментальної атестації шкіл України (для працівників органів управління освітою, керівників шкіл). Під загальною редакцією ОЛ. Сидоренка, Б.В. Чичкало, АМ Бурлакова. – Харків-Полтава, 1994 р. – 224 с. (Materials of the Experimental Attestation of Schools of Ukraine (for workers of education governance, school heads) Under the General Editorship of O.Sydorenko, B.Chychkalo, A.Burlakov. – Kharkiv-Poltava, 1994. – 224 p.).
6. Моніторинг якості освіти: методи, форми, організаційне забезпечення (посібник для методистів, директорів, заступників директорів загальноосвітніх закладів). – Херсон: Південноукраїнський регіональний інститут післядипломної освіти педагогічних кадрів, 2001. – 50 с. (Education Quality Monitoring: Methods, Forms, Organizational Provision (Manual for Methods Workers, Heads and Deputy Heads of General Education Institutions). – Kherson: South Ukrainian Regional In-Service Teachers' Training Institute. – 2001. – 50 p.).
7. Оцінювання якості роботи школи. Порадник. – Львів: ЛМГО “Інститут політичних технологій”, 2001. – 102 с. (School Work Quality Evaluation. Manual. – Lviv: LMGO: Political Technologies Institute. – 2001. – 102 p.).
8. Типове положення про атестацію середніх загальноосвітніх, позашкільних, дошкільних закладів освіти і закладів освіти для громадян, які потребують соціальної допомоги та реабілітації: Затверджено наказом Міносвіти України від 5 березня 1996 року № 66. (Model Provision on Attestation of General Secondary, Out-of-School, Pre-school Educational Institutions and Institutions for Citizens who Require Special Social Assistance and Rehabilitation. Approved by the MOES Law on 5 March 1966, No. 66).
9. Україна у цифрах. 2001. Державний комітет статистики України, 2002. TACIS European Commission. – 2002. (Ukraine in Figures. 2001. State Committee of Statistics of Ukraine, 2002. TACIS. European Commission, 2002).

10. Inspecting Schools. Handbook for Inspecting Secondary Schools with guidance on self-evaluation. – England: HMCI, January 2000.
11. Maes B., Ver Eecke E., Zaman M. Inspectorates of Education in Europe. A Descriptive Study. – SISI (The Standing International Conference of Central and General Inspectorates of Education) –DVO (Dienst voor Onderwijsontwkkeling), 1998. – 431 p.
12. http://www.eurydice.org. The Information Network on Education in Europe. Approaches to the Evaluation of General Schools which Provide Compulsory Education (Austria, Norway, UK, the Netherlands). 2000/2001.

8. Annexes

Annex 1

Inspection Organization in Great Britain (England and Wales)

Responsibilities of school evaluation are divided between:

- Office for Standards in Education – OFSTED;
- Local Educational Aauthorities – LEA;
- Schools.

OFSTED (officially – Office of Her Majesty's Chief Inspector of Schools in England – HMCI) is a state body independent from the Ministry of Education which is responsible for inspection of all public schools in England.

OFSTED:

- elaborates a strategy of regular school inspection, is responsible for its realization and fulfils supervising function;
- trains and retrains independent inspectors;
- is responsible for monitoring teams of school inspectors who work on a contract basis;
- traces the progress of schools with problems;
- deals with aspects of effective instruction and management, state examinations and international comparisons;
- analyses the trends of educational system development and evaluates the effectiveness of educational policy.

OFSTED:

- is headed by an Inspector of Her Majesty (H.M.) elected for a term of 5 years;
- consists of H.M. inspectors who are civil servants and are responsible for education quality assurance; analysis and dissemination of inspection results;
- teams of inspectors which work on a contract basis and conduct inspections.

The teams of inspectors consist of two (for a small primary school) or 15 members (for a secondary school) and include three categories of independent school inspectors:

- Registered inspectors are the heads of teams. They are responsible for selection of candidates to a team, inspection and preparation of the report. They get special training, sign a contract to conduct an inspection on behalf of H.M inspectors.

- Professional members of a team are trained inspectors (5-days training and passing of 1-day evaluation in 5 types of competence mastering) who participate in the inspection.
- According to legislation an inspection team should consist of at least one "unprofessional" inspector, a person who does not have any experience of school management.

Inspection pursues the following tasks:

- (as a means of school work accounting) prepares a report; informs a school, parents and local community about quality of education in a school and level of standards:
- (as a means of development) a team of inspectors give advice to schools, help them to plan and to improve their work taking into consideration their strong and weak sides.

The Program of Inspection

All schools in England are to be inspected at least once every six years. There are two types of inspection: a short inspection and a full one.

The short inspection is conducted in case of:

- positive results of the previous inspection;
- improvements or high level standards in education;
- high results in comparison with other schools of such type;
- high results in comparison with the national level;

The full inspection evaluates these four aspects:

- the quality of school education;
- level of educational standards mastering by students;
- effectiveness of financial resources usage;
- moral, social and cultural development of students of the school.

The process of inspection:

a) Preparation phase

Schools receive notification about inspection 12 weeks before it is due to be conducted. Before the inspection OFSTED provides the registered inspector with detailed information about the school, i.e. number of students, educational programs and plans, financial resources, etc.

On the eve of the inspection the registered inspector visits a school to become acquainted with the school staff. Before meeting with parents the inspector disseminates a questionnaire among them. On the basis of the collected information the inspector is to fill in the corresponding part of the report.

b) School phase

Inspection requires one week's work in a school of the inspectors' team consisting of 2-8 persons. Besides attending lessons inspectors meet the teachers and school management.

c) Reporting phase

After the inspection the inspector meets with the school management and informs them about the inspection results, achievements and drawbacks. The registered inspector has 5 weeks to work out the final draft of the report.

c) Resulting phase

Failing schools are examined again in 6-8 months after the previous inspection. Such a school should draw up an improvement measures plan and to put it into practice.

Annex 2

Inspection Organization in Great Britain (Scotland)

The Inspectorate of Her Majesty is headed by the Chief Inspector of Her Majesty, is divided into several sub-divisions, is composed of inspectors of Her Majesty and administrative staff.

The main aim of the Inspectorate in Scotland is to evaluate the quality of school work and other educational institutions which provide pre-school, primary, secondary and further education. The peculiarity of the Inspectorate in Scotland is that it is responsible for the inspection of independent schools and Well-being of students living in the neighborhood of the school area.

Inspection is conducted by:

- inspectors of the Inspectorate;
- junior inspectors;
- "unprofessional" inspector without school management experience.

The main responsibilities of the Inspectorate are:

- evaluation;
- counseling;
- monitoring;
- reporting

A. Evaluation.

1) Full inspection

The Inspectorate is responsible for independent and objective evaluation of standards and quality of work of each school and the educational system in general. It conducts the audit of quality of education, standards of performance, efficacy of institutions.

The key areas of evaluation of the full inspection are the following:

- Performance of students (Results of national examinations);
- Quality of Instruction;
- Resources (financial management)
- Personnel management.

Self-evaluation is considered as an important constituent of the Scotland approach to the insurance of quality. It is expected that a school will use the National list of indicators of achievements developed by the Inspectorate. These indicators are the basis for self-evaluation and making judgments by the Inspectorate in the process of the external evaluation. The external evaluation is based on the same list of indicators that are proposed for self-evaluation.

2) Standard inspection is aimed at the evaluation of the different aspects of school work including achievement of the educational standards.

Annually inspectors inspect different aspects of educational organization, i.e. thematic inspection. It includes such areas as foreign languages teaching, religious education in primary and secondary schools, etc. Such evaluation can be the beginning of the full inspection in the future.

3) Expended inspection has an analogous content (as the standard one) but more expended form.

4) Departmental inspection (for secondary school) is concentrated on examination of the work of subject departments.

5) Inspection of the Well-being of students living in the neighborhood of school area evaluates the quality of living of students in boarding schools as well as minister's assistance.

B. Counseling

Exhaustive and objective counseling to the State Secretary of Scotland and Scottish Department of Education on all aspects of Scottish education is one of the main functions of the inspectors.

C. Monitoring

Monitoring of the educational system by means of development of a database is an important task of the Inspectorate. The Audit Department of the Inspectorate is responsible for collection and analysis of information on the educational system. It fulfils function of monitoring of school achievements, exam results, attendance, etc.

D. Reporting

National reports are based on the results of the full inspections.

The process of inspection

a. Phase 1 (preparation) – 1 – 8 weeks in case of standard inspection and 1-9 weeks in case of expended inspection.

- Local educational authorities, school council and parents are informed 6 weeks in advance of the beginning of the inspection;
- pre-inspection information (plan of school development and research of parents opinion) is collected;
- an inspector visits the school to meet the school staff and inform them about the future inspection.

b. Phase 2 (inspection) – the 9-th week is for the standard inspection; 10-th and 11-th weeks are for the extended inspection.

During this phase students' performance and level of instruction are evaluated.

- Brief feedback is given to teachers after visiting their lessons;
- Oral information is given to the senior manager of the school at the end of the second phase of the inspection.

c. Phase 3 (reporting) – the 10th -13th week in case of the standard inspection and the 12th -17th week in case of the extended inspection.

- Meeting of the inspectors for discussion of the inspection results and making the draft report.
- The head of the inspection brigade discusses the draft report with a school head, the chairperson of the school council and representatives of the local educational authorities.
- The final report is published. It contains the positive aspects of the school work and recommendation for the further activities.

c. Phase 4 (consequential) – in 1-2 years.

In 1-2 years the repeated inspection is conducted for examination of the level of the implementation of recommendations made in the final inspection report.

Methods of inspection

A. Collection of information.

Collection of information is conducted by means of questionnaires (for schools, parents, school heads, teachers, persons who make reports); interviews (with school heads and their deputies on the issues of school managements, school policy, with chairpersons of school councils); observation of teachers' work in a class; tests/exams (based on national examinations); collection of documentation and usage of national database.

B. Approaches and tools

Inspection is aimed at the evaluation of such spheres as: resources and school staff, quality of subject instruction, efficacy of management and instruments to insure quality, opinion of parents, etc.

Inspectors are focused on 7 zones of special attention, i.e. key zones. Each zone contains a list of achievements. They are the following:

Key Zone 1: National Curriculum

- Performance Indicator 1.1: structure of educational plan;
- Performance Indicator 1.2: quality of courses or programs;
- Performance Indicator 1.3: quality of teachers' planning.

Level of quality is evaluated according to 4 levels of achievements:

- Level 4 – very good (mainly positives);
- Level 3 – good (positives prevail negatives);
- Level 2 – satisfactory (several negatives are very substantial);
- Level 1 – unsatisfactory (mainly negatives).

Annex 3

Inspection Organization in Czech Republic

The school inspectorate is subordinated to the Ministry of Education, Youth and Sport and is financed by the state budget.

Inspectorate functions in three levels:

Table 7.

Level	Area of responsibility
Senior management level	Prepare annual work plans and solve topical problems.
Chief regional inspectors	Elaborate and realize the programs of inspection in their regions for the 1-2 months period.
School inspectors	Conduct the inspections of schools.

Inspectors should have a university education and at least seven years of pedagogical experience. Inspectors are civil servants and work a full day.

The main responsibilities of the inspectorate are:

- evaluation;
- counseling;
- monitoring;
- reporting

A. Evaluation.

The aim of the inspection is to evaluate the work of schools by examining separate aspects of the educational process, i.e. educational performance of students, quality of professional and pedagogical management, conditions of teachers' work, level of provision with didactic materials.

Evaluation can be of three types:

- complex inspection:
- orientation inspection;
- thematic inspection.

1) Complex inspection

Complex inspection is used for schools which have problems with management or demonstrate low results in their work.

According to the legislation the complex inspection is aimed at the full audit of the school management and educational process:

- educational process and the outcomes of education;
- staff and resources;
- financial management and curriculum.

2) Orientation inspection

Orientation inspection is the most common type of inspection in the country. One or two inspectors visit a school during 1 or 2 days for examining one or several aspects of school work (instruction of mathematics; school management, etc.)

3) Thematic inspection

This type is aimed at a quick understanding of the entire picture as far as a separate aspect is concerned within the boundaries of the whole country. The selection of the aspects is made by the inspectorate jointly with the ministry of education. This type of inspection may include the examination of one topic (racism, tolerance, violence in schools, etc.). Inspectors visit several schools to get information required.

The process of inspection:

a. Preparation phase

A school head is to be informed:

- 5-6 weeks before about the complex inspection;
- 2-3 days before about the orientation inspection.

The school head is to give all necessary information to inspectors (an annual school report, timetable, etc.)

b. School phase

In case of a complex inspection an inspectors' team studies the situation during 1 week, sometimes more.

In case of an orientation inspection 1-2 inspectors visit a school during 1-2 days.

c. Reporting phase

After the inspection the head of the inspectors' team inform the school head about the preliminary results of the inspection. Later the school head receives the written copy of the inspection report.

c. Resulting phase

In case of legislation violations found during the inspection process the head of the inspectors' team writes about it in the report and the school head is to take measures to improve the situation.

Inspection reports include:

A. Complex inspection reports include information about the quality of the educational process, effectiveness of professional and pedagogical management, didactic materials and equipment, financial management, compliance with the current legislation.
B. Orientation inspection reports are only 2-3 pages of length and include recommendations for schools.
C. Thematic inspection reposts include recommendations for the ministry of education and are published after the Cabinet of Ministers's approval.

In case of negative results of the inspections the report is to be sent to local educational authorities (for primary schools) or to the ministry of education (for secondary schools).

Pavlo KHOBZEY

The Problem of Efficient Teacher Resource Use

1. Executive Summary

The disparity between a teacher's income and the social role he or she is expected to play in society is a serious threat to the state and the performance of tasks confronting education in Ukraine today.

At the current stage many teachers are changing their place of work in search of a higher income; some teachers have second jobs in education or an unrelated field to supplement their income. The most qualified and promising teachers are leaving their jobs in order to find the proper means to support their families. The problem of inadequate teacher income funding is leading to a loss of professional motivation and deterioration in the quality of teaching. The low quality of teaching is often linked with the material resource independence of schools, lack of teaching aids and equipment, as well as the shortage of good quality textbooks. Any real positive changes in the educational system are impossible without an increase in teacher pay and corresponding social status. **This is one of the most difficult problems facing education today in view of the lack of available state funding**.

Another problem affecting the quality of education is the extent to which teacher resources are used efficiently. An analysis of this problem shows that the level of teacher resource use in Ukraine at present is low, particularly in terms of the "teacher-student" ratio. This is due to a number of factors which include: the small number of students in rural schools; the large number of compulsory curriculum hours per week; the short duration of the academic year; and small amount of time teachers spend directly with students in the class-room during the week.

The research completed within the framework of the second stage[51] of the Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" has enabled us to suggest the following policy options:

1) For the purpose of overcoming the disparity between the social role a teacher has to play and his/her social status it is suggested that the Ukrainian government abandon the principle of "residual' financing applied to national education and undertake measures to increase education expenditure taking into consideration the percentage of the GDP that is allocated by OECD (Organization for Economic Cooperation and Development) countries for education.

[51] At the first stage of the project (2001) technical support for elaborating an educational reform strategy was provided to the Ministry of Education and Science of Ukraine. At the second stage (2002) the project work focused on drawing up recommendations for the implementation of actual tasks determined by the National Doctrine for Development of Education

2) The problem of inefficient use of teacher resources could be solved partially by means of the following policy options:

Policy Option A. Extension of the academic year with the simultaneous reduction of teaching workload per week.

Policy Option B. Change in structure of teacher working hours: teachers work 6-7 hours per day per working week (dividing time between lessons, consultations and self-improvement).

Policy Option C. Consolidation of the rural school network.

2. Introduction

The discrepancy between teacher wages, on the one hand, and the subsistence minimum and social challenges faced by teachers, on the other hand, is a serious threat to the educational system. The average pay of pedagogical workers is UAH 196 compared to the subsistence minimum of UAH 365. This is 2.5 times less than provided for by effective legislation. This problem has also grown worse because the national minimum wage was set at UAH 185 at the beginning of 1 January 2003. Consequently, a young teacher and a school janitor receive the same pay. This state of affairs has led to a fall in teacher morale and often deterioration in work quality. Many teachers are tempted to quit school and seek a different job with better pay. Teachers look for supplementary employment to provide financial support to their families. As a result of this there is a lack of teachers in certain specializations in some schools. Such schools are on the rise just when the range of specialist subjects is growing. Due to bad wages the availability of student teachers has fallen. Meanwhile the number of pension-age teachers is increasing. Teachers that continue working in schools demand an increase in pay in keeping with effective legislation. The constant threat of strikes remains so long as Article 57 of the Law of Ukraine on Education (6) (state guarantees to pedagogical, research-and-pedagogical, and other categories of educational system employees) is not enforced. From being a driving force behind educational and state reform the teaching community has become one of the most dissatisfied social groups.

In the thirty-first paragraph of the National Doctrine for Development of Education it is stated that: "Provision of conditions for pedagogical, scientific and pedagogical-scientific activities of pedagogical-scientific staff, conditions for the education of pupils and students, and also social protection of all participants in the educational process is the most important strategy for educational policy" (3, 152). To fulfill this task the Cabinet of Ministers of Ukraine issued Regulation No.379 on 28 March 2002 that agreed to what is now called the State Teacher Programme. This programme states that negative factors continue to result in a teacher-drain from schools into other professions. The lack of teachers, mentors, work instructors and other pedagogical staff is growing. The teaching profession is losing its prestige as the disparity between the social role and status of a teacher continues (2, 5).

Obviously, however, even a slight pay increase will not automatically bring an improvement in the quality of education. This requires a great deal of careful work designed to improve the professional development of a teacher, update curricula in line with modern conditions, provide appropriate teaching materials, use teacher resources efficiently and provide social support to schools on national and regional levels.

Let us analyse two aspects of the existing problem, namely:

- Lack of funds allocation from the State Budget to support education;
- Inefficient use of teacher resources.

This study analyzes the scale of the problem and suggests possible policy options.

3. Problem Analysis

3.1. Main Indicators of Teacher Income Funding

The availability of qualified and motivated teachers is one of the most important indicators of the quality of education. In recent times the relative size of teachers' pay has fallen significantly. The dynamics of change in the average monthly income (in UAH) of employees engaged in different sectors of the economy over the past few years is illustrated in the table below.

Table 1. Dynamics of income change (in hryvnias) of employees working in different sectors of the economy during the course of the last 12 years

	1996	1997	1998	1999	2000	2001
Average monthly income in the educational sector (UAH).	119	127	129	142	156	224
As a percentage of:						
average income in Ukraine	94%	88%	84%	79%	67%	72%
average income in industry	77%	72%	70%	65%	50%	53%
average income in agriculture	175%	150%	145%	140%	140%	148%
For reference:						
average income in Ukraine (UAH)	126	143	153	178	230	311
average income in industry (UAH)	153	174	184	217	310	419
average income in agriculture (UAH)	68	84	89	102	111	151

An interpretation of the data in Table 1 shows an evident deterioration in the position of teachers from 1996 to 2000. It is necessary to point out that throughout 1997-1999 educational worker's incomes were paid in arrears and that it was not until the end of 2000 that incomes actually began to be paid on time. In 2000 an educational worker earned on average half as much as somebody employed in the industrial sector. This ran counter to the Law of Ukraine on Education, which stipulates that the average wages of teaching staff in educational institutions have to be set at a level not lower than the average industrial employee income.

Educational workers' pay started to rise in 2001 but at a much slower rate than the previous autumn. It must be emphasised that rural teachers' wages, in spite of their meager size, remained attractive as they are almost 1.5 times more than the average agricultural sector wages.

The influence of income level on the process of teacher decrease is shown in Table 2.

Table 2. Influence of income level on the process of teacher decrease

Activity	Average number of staff members	Retiring staff	Percentage of number	Retiring voluntarily	Percentage of number
Primary school	355,871	49,462	13.9%	39,515	11.1%
Secondary school	854,531	100,341	11.7%	87,350	10.2%

(Summarized report on labour in the agricultural sector of Ukraine, Part 8 "Workforce Movement", State Committee for Statistics of Ukraine)

Statistics show that the average age of teaching staff is growing. Annex 1 shows that the number of pension-age staff working in general secondary education grew from 10.21% in 1999 to 11.37% in 2001. A significant number of teachers of retirement age were working in the cities of Sevastopol (22.45%), Mikolayiv (17.1%), Kyiv (16.01%) and Donetsk Region (*Oblast*) (18.79%) in 2001.

The reduction in total number of teachers giving instruction on special subjects is a growing trend. The ages of these teachers can be represented in percentage terms as follows: aged less than 30 – 22.7%; aged 31-40 – 27.5%. The proportion of teachers aged 41-50 remains unchanged and amounts to 26.5%. There is some growth in total number of teachers aged between 51-55 and over 55 to 11.6% and 12.0% respectively.

In the 2000/2001 academic year the percentage of teaching staff that had provided at least three years professional teaching service was 9.5%; 3-10 years teaching service – 20%; 10-20 years teaching service – 32.8%; and more than 20 years teaching service – 37.7% (ibid). There is an urgent need for teachers of foreign languages and information technologies.

Strikes in education have become common in recent years. According to data provided by the State Committee for Statistics of Ukraine (11) 76 enterprises and organizations were involved in strike action in 2000, 27 of which belonged to the educational sector. Meanwhile in 2001 (8) out of 31 strikes – 13 were in the educational sector.

Another foreseeable problem is the enforcement of the judiciary ruling on repayment of salaries to teachers in keeping with Article 57 of the Law of Ukraine on Education. The fulfillment of court rulings will ruin the budget of relevant administrative and territorial units (appropriated payments by far exceed the educational budgets of administrative and territorial units). It is unclear whether teacher-pensioners will continue working after they receive several thousand hryvnias in accordance with the judicial ruling when the current proportion of these teachers comprises 13%.

A teacher's low social standing affects his authority. Based on findings from surveys conducted by the Ukrainian A. Razumkov Centre for Economic and Political Studies in all the regions of Ukraine between 18 and 24 September 2002, 41.6% of respondents believed that children rate a teacher's authority as low; 42.6% – as average; and only 9.1% of respondents believed that teachers enjoy a high level of authority among children. At the same time, 11.4% of those interviewed believed that teachers are held in high authority by parents; 45.8% of respondents believed that teachers' have medium authority in parents' eyes; while 34.8% of respondents believed that it was low (13).

The State Teacher Programme draws attention to the lack of adequate public support, especially "in terms of strengthening personnel support and improving funding, mainly with respect to the level of teachers' income and bringing it in line with legislative requirements." Paragraph 49 of this programme identifies the measures to be undertaken with respect to phased implementation of provisions prescribed by the Law of Ukraine on Education (Article 57) and the Law on General Secondary Education (Article 25). The execution deadline is 2003-2005 (2, 5).

In order to give this problem a proper explanation an analysis should be made of how the size of income could change the teacher staff situation in schools. If the subsistence minimum is UAH 365 a month per adult and about UAH 300 per child, then a teacher should earn approximately UAH 650 a month. After conducting a survey with pedagogical workers in the regions of Cherkasy, Mykolayiv, Ternopil and Luhansk in December 2002 within the framework of the UNDP Project Education Innovation and Renewal for Improved Well-being and Poverty Reduction", an income of approximately UAH 540 per month (nearly USD 100) was cited as a satisfactory minimum income by the participants. This could be considered a useful guideline when finally determining the average monthly income that teachers should receive in Ukraine.

3.2. Comparative Analysis of State Expenditures on Education in the World

By comparing state expenditures on education abroad it is possible to conclude that in most transition economies state expenditure on education has fallen, but still represent a sizable proportion of the state budget.

The governments of these countries spend 4.4% of their GDP on education (1). For comparison, it can be noted that all OECD countries spend an average of 5.8% of their GDP on education (Annex 2) – per capita GDP is 10 times bigger than in transition economies. In the Baltic states expenditures on education stands at 6% (1, p.8). Annex 3 contains an analysis of state expenditures on education in several countries that was conducted by the World Bank (Annex 3).

Over the last four years Ukraine has spent 3.7 – 3.8% of its GDP on education. Hence, one can draw the conclusion that the educational sector was 50% under-funded as compared with OECD countries. In other words, if education in Ukraine were financed in relative units, as in OECD countries, then it would be possible to expect a 50% increase in the pay of educational workers.

The increase of budget allocations in education is imperative if manpower levels in the educational sector are to be maintained. If the Ukrainian government does not abandon its principle of "residual" funding for education, then Ukraine may lose its

available intellectual, research developmental and educational potential, finally ending up in the backyard of global processes.

In order to demand that the government increase its allocations for education by 50%, it is necessary to use all the resources available in the sector more efficiently. That is why the question of efficient use of teacher resources is an important issue with respect to the sustained development of education in Ukraine.

3.3. Analysis of Efficient Use of Teacher Working Time

A key indicator of the efficient use of teacher working time is the number of students per teacher. Comparison of this indicator for Ukraine with leading Western countries shows that this indicator is much lower in Ukraine (11.9 as compared with 15) (Annex 4).

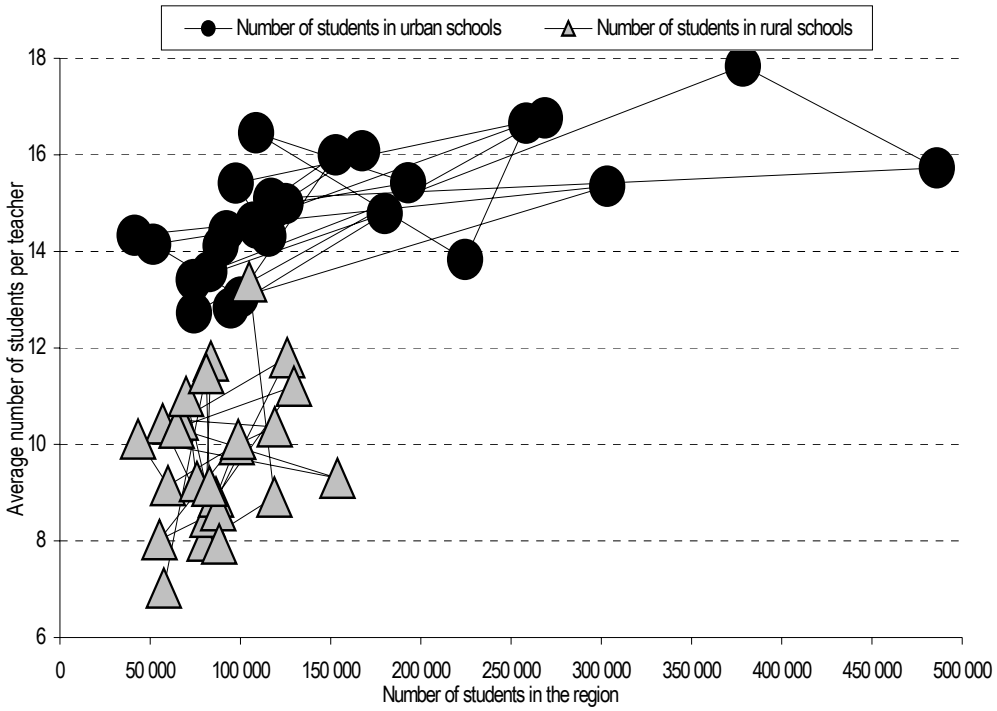
Figure 1 shows the ratio of students per teacher in rural and urban areas in various regions of Ukraine.

The following conclusions may be drawn from this Figure:

(1) There is a significant gap between "student – teacher" ratios for rural and urban areas (there are regions where this indicator is extremely low – less than 8);

(2) There is a significant difference in "student – teacher" ratio for the same number of students in urban areas and this indicates different levels of efficiency in use of teacher working hours.

Figure 1. Relationship between the number of students per teacher and the number of students in Ukrainian regions in 2001 (see Table 4)



Note: black bullets denote the number of students in urban schools, and grey triangles – the number of students in rural schools

Following an analysis of the factors that influence the "student – teacher" ratio the following conclusions can be made. The first factor that impacts on this ratio is the **classroom numbers factor**. The existence of a large number of schools with a lack of students in rural areas results in the low ratio of these indicators. Thus, **consolidation of the rural school network** could be a possible option for dealing with the problem.

The second factor is **the number of compulsory curriculum hours per week**. In Ukraine, a teacher's income is calculated in accordance with the volume of work per week produced. For a primary school, the rate is 20 hours, and for secondary and senior schools – 18 hours per week. According to the Baseline Curriculum for five-day and six-day working weeks, only 38 – 40 hours are financed in senior schools depending on the type of school and without taking into account the division of classes into groups (4,153-161). Frequently schools use up all available paid hours and this leads to an overloading of educational curricula. Too often seven or eight lessons are conducted. They are inefficient but serve to make teachers more financially secure insofar as these lessons are paid for additionally.

A large number of schools (mainly senior school level) work on the basis of a six-day week curriculum. The maximum permissible load on a student in a senior school given a five-day week is 33 hours per week; in the case of a six-day week it is 36 hours. The difference is 9% (ibid). Therefore if all schools were to change to a five-day working week

then the number of hours in those schools that were running according to a six-day week will be reduced by 9%.

As mentioned previously it is inefficient to conduct seven to eight lessons. This puts too much of a strain on students and it is difficult for them to absorb new information. In the event that not more than six lessons are conducted a day using available budget funds, then it will be possible to make a saving of 10% in wages costs. It should be noted however that this measure could lead to a decline in the normal standards of education.

In cases where classroom numbers exceed 28 students another factor affects the "student – teacher" ratio, i.e. **the number of educational hours when a class is split into two or three groups**. For example, a class can be split into two groups for Ukrainian language lessons. In profile subject study, a class can also be split into two groups. In special schools when a foreign language is taught a class is split into three groups – this means 16 hours per week in Grades 10 and 11 (4, 165). Therefore 48 hours, rather than 18 hours are to be paid for which begs the question of how efficient is class division.

A **reduction in number of paid teaching hours** could lead to a rise in the level of teacher income in conditions of a budget deficit, as well as heighten teacher work motivation and reduce the workload per week.

Other two factors influencing the efficient use of teacher resources are the following:

(1) duration of the academic year; and

(2) number of hours per week a teacher spends with students.

As a rule, a teacher stays at school only for his/her lessons and not during the entire working week. By comparing the amount of time a Ukrainian teacher spends at school during the week with his/her European counterpart (Table 3), it is possible to demonstrate that a Ukrainian teacher spends much less time at school per week than his/her colleagues in other countries. (15, 227).

Table 3. Number of hours per week a teacher must spend at school

Country	Elementary school	Basic school	Senior school
Ukraine	20.0	18.0	18.0
Australia	34.0	35.0	35.0
England	32.5	32.5	32.5
Greece	37.5	37.5	37.5
Scotland	27.5	27.5	27.5
Spain	30.0	30.0	30.0

In commenting on Table 3 it is necessary to make a few observations. As previously mentioned, according to the existing rate in Ukraine, a teacher must work a 20 hour-week in primary school and an 18-hour week in secondary or senior school. In fact, these hours were taken into consideration when compiling Table 3. In other words, only the number of hours spent in delivering a subject per week on the basis of the existing rate is accounted and paid for. It is necessary to note that the time Ukrainian teachers spend at pedagogical

council meetings, working as class tutors, giving advice, as well as attending to other duties, has not been taken into consideration.

It is seen from the data in Table 3 that apart from Australia, in all other countries teacher working hours per week are the same for all the school grades. It has to be noted that Article 25 of the Law of Ukraine on General Secondary Education sets the teaching load and corresponding tariff rate at 18 hours for all teachers including primary schools teachers.

Table 9 (Annex 5) shows the number of hours per year that a teacher spends in the classroom.

Table 4. The number of hours per year that a teacher spends in the classroom

Country	Elementary school	Basic school	Senior school
Ukraine	680	612	612
Germany	783	732	690
USA	1,139	1,127	1,121
France	907	639	611
Finland	656	570	527
Scotland	950	893	893
Philippines	1,176	1,176	1,176
Average for OECD countries	792	720	648

It may be inferred from Table 4 that Ukrainian teachers work 17% fewer hours annually than their counterparts in OECD countries. It is necessary to point out that under the Law of Ukraine on General Secondary Education, Article 16, paragraph 2, the duration of the academic year should not be shorter than 190 days without taking into consideration the time required for passing end-of-year and graduation examinations (6, 110).

However, when a school operates on the basis of a five-day curriculum, the academic process covers not more than 170 days without taking into consideration summer practice. The enforced intensification of the academic process does not lead to an increase in the number of working days. Increasing the duration of the academic year by 10% will raise the efficiency by 10%. Thus, it is worth increasing the **duration of the academic year.**

In comparing the time spent at school by Ukrainian teachers and their European counterparts it must be emphasised that the latter spend the entire day at school (the time spent by Ukrainian teachers in school per week is considerably less). The foreign academic year is longer than in Ukraine too: this allows the academic process and quality of teaching work to be organized more efficiently.

Therefore, restructuring teacher working hours would be more efficient especially if a teacher were to work a 6-7 hour day dividing time between lessons, consultations, faculty courses, self-improvement, as well as other activities. The duration of the academic year should be the same as in Western countries.

4. List of Policy Options

The research conducted has enabled us to suggest a strategy for improving the situation:

1) The Ukrainian government should abandon the principle of "residual" funding for national education and undertake measures for increasing state expenditure on education taking into consideration the GDP rate used in OECD countries.

2) The problem of inefficient use of teacher resources could be solved by means of the following policy options:

Policy Option A. Extension of the academic year with the simultaneous reduction of teaching workload per week.

Policy Option B. Change in structure of teacher working hours: teachers work 6-7 hours per day per working week (dividing time between lessons, consultations and self-improvement).

Policy Option C. Consolidation of the rural school network.

5. Description of the Policy Options

5.1. Description of Policy Option A

Extension of the academic year with simultaneous reduction of teaching workload per week.

This option covers:

- Cutting the seventh to eighth lesson periods in all classes in general secondary schools;
- Establishment of a five-day working week for general secondary schools; and
- Extension of the academic year (for example until 25 July).

In order to pursue this strategy it is not necessary to make any amendments in the law in force. It will only be necessary to introduce additional changes to standard curricula of general secondary schools (that is incorporate changes into the Order of the Ministry of Education and Science, No. 342 of 25 April 2001 (4,147) or decree a special order at regional level before school enrollment begins the next academic year.

If this scheme is implemented and budget funds are made available for a maximum of six lesson periods per day, it is unlikely that there will be an outcry of protest from parents or students. Moreover, eleventh graders will subsequently have more time for individual tuition before their entrance examinations to higher educational institutions. This recommendation could solve the problem of students being overloaded with work as a result of having seven to eight lesson periods per day rather than six. In any event it has already been established that the seventh or eighth lesson periods in the curriculum are usually used to boost teacher's work hours and corresponding income. There is little proof that they in fact contribute to a student's individual development.

The transition of specialized schools, gymnasia and lyceums to a five-day working week calls for a dramatic adjustment in curricula in terms of the reduction of number of teaching hours if no more than six lessons per day will be taught. Existing practice shows that the seventh to eighth lesson periods in the curriculum are usually paid for privately by

parents and exacerbate the problem of inequitable student access to a high standard of education.

Extension of the academic year is an important issue in terms of ensuring the efficient use of teacher resources. If the academic year is extended to 25 June then it could be recommended that Ukraine adopt the Canadian work model in which case, schools could operate a six-day academic week curriculum that in effect is redistributed over the course of an extended academic year divided into five-day working weeks. Thus, student workload will decrease during the week and this will also lead to a reduction in teacher working hours by one-sixth per week.

It should be noted that some pedagogues advocate six-day tuition alleging, in particular, that students under this scheme study every day of the week bearing in mind that on Sundays they have to do their school homework. Pedagogues consider that this makes students more organized and develops their industriousness and sense of responsibility. However, as attested by interviews conducted in different regions of Ukraine, parents and students are in favour of the five-day academic week. Moreover, the rhythm of a five-day working week at school would coincide with the rhythm adopted by places of employment in the majority of countries. This allows parents to spend more time with their children and enables children to spend more time in the family environment.

As previously mentioned, teachers are paid on the basis of weekly hours worked and regardless of the number of working hours per year (the hours of direct teacher – student contact). We suggest reducing the number of teaching hours per week since this affects the payrolls fund and to extend the academic year (which does not cause the payrolls fund to increase). By reducing the actual number of hours per week and extending the academic year we would come nearer to complying with European standards in terms of the number of academic hours worked during the entire school period for the year, which Ukraine is short of enforcing today.

Extension of the academic year is likely to meet resistance from educational workers in view of the following reasons:

- In the wake of the Chernobyl disaster and complex social and economic situation in the country, students grow weary by the end of the academic year, so extension of the academic year could in fact prove harmful to a student's health. However by approaching the question of academic year extension sensibly (planning no more than five lesson periods per day) it is possible to avoid these negative repercussions;
- In rural regions parents often engage their children in work on household plots;
- Schools are not equipped with air conditioners and it is impossible to hold classes, especially in the south of Ukraine, due to the sweltering heat: All this leads to students becoming tired very quickly during lessons and violation of sanitary regulations;
- It will be necessary to change the dates of entrance examinations to higher educational institutions that require the adoption of a special Ministry of Education and Science of Ukraine order to regulate this process;
- This option could be unacceptable for parents who plan to have vacations at the beginning of summer or engage their children in the agricultural sector. On the

other hand this option would probably be supported by parents who have limited opportunities to plan how their children are going to spend summer time;

- If the idea of a five-day teaching week prevails, it will lead to a one-month extension of the academic year and the enforcement of the Law on General Secondary Education (Article 16, paragraph 2, that sets the duration of the academic year as being no less than 190 working days without time spent on examinations), as well as bringing secondary education in Ukraine more in line with European standards in terms of available study hours.

5.2. Description of Policy Option B

Change in structure of teacher working hours: teachers work 6-7 hours per day per working week (dividing time between lessons, consultations and self-improvement).

The underlying idea of policy option B is that a teacher should work at school 6-7 hours per working day. This policy option can be adopted only if all schools are operating a five-day working week principle.

Obviously, this does not mean that a teacher should only be involved in teaching (30 hours per week) but should also be attending teacher training improvement courses, running faculty courses, hold teaching staff meetings, as well as fulfilling other duties.

The average number of lessons to be held should be agreed with the Ministry of Labour and the Union of Pedagogical Workers. The absolute limit should be between 24 and 27 hours. Twenty four hours a week is a more acceptable number.

The introduction of this option would mean a teacher's income would be at least doubled. In other words, on the basis of a weekly rate, a teacher would have to work for 30 hours, 24 hours of which would be devoted to teaching lessons.

Hence, the pay rate would increase by 33% due to the increase in the number of working hours per week. (The difference between 18 hours and 24 hours is 6 hours, or one-third). Another 21% could also be saved when switching to a five-day working week and on condition that only 6 hours are paid for from the budget. Thirty hours, rather than 38, would be paid for weekly. The remaining funds – but not less than 13% – would have to be added at the expense of increasing budgetary allocations for education. This strategy envisages that teachers would work at their full tariff rate. An exception could be an hourly payment for faculty members of higher educational institutions or other institutions invited to deliver a few weekly hours at schools. In this case it is important to set a definite limit on the number of hourly payment hours that can be offered.

This policy option has two objectives:

1) to enable teachers to earn more at the expense of the intensification of their work, i.e. making a teacher's wages more attractive and enabling him or her to support the family;
2) to encourage teachers to work at school by creating the conditions necessary for raising the quality of teaching.

This strategy is very attractive but it involves considerable risks. In the first place, it may be resented by teachers, because it calls for the intensification of their work and will entail the reduction of a third of working teachers.

Secondly, it is necessary to amend existing legislation, and change the norms and current work payment instructions.

Thirdly, teacher-training institutes would have to take measures to introduce specially designed advanced courses enabling teachers to provide tuition in several subjects and work full-time.

This policy option shows the positive experience of many foreign countries that follow it in practice.

5.3. Description of Policy Option C

Consolidation of the rural school network

This policy option involves unifying small rural schools in districts where there is one strong school and several weak schools. The underlying issue is the necessity to increase the number of students per class and, subsequently, increase the number of students in schools.

As Figure 1 shows the "teacher-student" ratio in rural areas is less than 8%, while in more than half the regions (*oblasts*) it is less than 10%. A 12% increase in the "teacher-student" ratio in rural areas will increase the efficiency of funding by 24% since the number of class numbers and corresponding tariff rate will decrease.

In small schools, teachers are often forced to teach subjects outside their specialization because of small classroom numbers which obviously affects the quality of education.

Consolidation of the rural school network will enable an improvement in the quality of education even when funding is inadequate. There are 21,215 rural schools in Ukraine operating without appropriate teaching equipment and materials, as well as qualified staff (See Annex 7).

This risk of village schools closing could be mitigated by introducing the State School Bus Programme which prior to its introduction would require a detailed analysis of each rural area in terms of remoteness of populated rural areas, road conditions, and viability of local authorities providing transport facilities and qualified workers, as well as other factors.

This option would also support the implementation of senior school profiling insofar as creating the conditions necessary for the easier adaptation of rural schools to profile education.

To test the aforementioned policy option it seems reasonable to suggest that a pilot scheme is launched in an area specially selected for our experiment. This strategy could be put into practice in a district (*rayon*) with insufficient budget allocations for education. Key schools could be selected in this area for the targeted investment of teacher-training, teaching material and equipment, IT classes and teaching laboratories.

There are different options available for raising additional finances for education, for example, loans from government and NGO stakeholders. The Ministry of Education and Science of Ukraine could be a leading player in this process by holding a tender designed to attract funding and develop mechanisms for using and monitoring it efficiently in relation to the aforementioned pilot scheme. It is also important to develop mechanisms for coordinating the work of central and local governments.

6. Conclusion

The given research is a result of an analysis of the processes taking place in education, in particular, in the administrative field. The suggested policy options reflect the needs of all stakeholders and can be used as a guideline for the development of an educational strategy for the government. For the further development of the policy options and finding the best ways to implement them an active dialogue involving a wide selection of representatives of civil society is recommended.

7. References:

1. Вандайк Н. Доступ бідних до освіти в Європі та Центральній Азії.-Технічний документ Світового банку № 511. – 36 с. (Vandayk N. Accesses to Education for Children from Low Income Families in Europe and Central Asia – Technical Document of the World Bank No. 511. – 36 p.).
2. Державна програма "Вчитель". – К.: Редакції загальнопедагогічних газет. – 2002. – 40 с. (State Teacher Programme. – K.: Redaktsii zahalnopedahohichnyh hazet (General Pedagogical Newspapers Editing Boards). – 2002. – 40 p.)
3. II Всеукраїнський з'їзд працівників освіти. – К.: ЗАТ "НІЧЛАВА". – 2001. – 232 с. (II All-Ukraine Educational Congress. – K.: "NICHLAVA", 2001. – 232 p).
4. Збірник нормативних документів загальної середньої та дошкільної освіти. – Міністерство освіти і науки України. – К.: 2002. – 262 с. (Collected Regulatory Documents On General Secondary and Preschool Education. – Ministry of Education and Science of Ukraine. – K., 2002. – 262 p).
5. Освіта України. Інформаційно-аналітичний огляд. / Під загальною редакцією В.Г. Кременя. – К.: ЗАТ "НІЧЛАВА". – 2001. – 224 с. (Education of Ukraine. Informational and Analitical Review / Eds. V.G. Kremen. – K.: "NICHVALA", 2001. – 224 p).
6. Освіта України. Нормативно-правові документи. – К.: Міленіум. – 2001. – 472 с. (Education of Ukraine. Regulatory and Legal Documents. – K.: Millenium, 2001. – 472 p).
7. Показники розвитку загальної середньої, дошкільної, позашкільної та професійно-технічної освіти (за підсумками 2001/2002 навчального року) / Міністерство освіти і науки України. – К.: 2002. – 72 с. (Data on the Development of General Secondary Education, Preshcool Education, Out-of -School and Vocational Education (results of 2001/2002 academic year). – Ministry of Education and Science of Ukraine. – K., 2002. – 72 p).
8. Постанова Верховної Ради України № 2551 від 21.06.01 "Про стан, напрями реформування освіти в Україні". (Decree of Verkhovana Rada of Ukraine № 2551, June 21, "On State, Directions of the Education Reform in Ukraine").
9. Статистичний збірник: загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (1996-2000 рр.) / Міністерство освіти і науки України. – К.: ВВП "Компас". – 2001. – 136 с. (Statistical Digest: Genaral Secondary Schools, Out-of-School Establishments, Preschool and Vocational Schools (1996-2000). – Ministry of education and Science of Ukraine. – K.: "Compas", 2001. – 136 p).
10. Статистичний збірник: Загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (2000-2001 р.р.) / Міністерство освіти і науки

України. – К.: ВВП "КОМПАС". – 2002. – 112 с. (Statistical Data: Genaral Secondary Schools, Out-of-School Establishments, Preschool and Vocational Schools (2000-2001). – Ministry of education and Science of Ukraine. – K.: "Compas", 2002. – 112 p).

11. Статистичний щорічник України за 2000 рік. / За редакцією Осауленка О. Г. – Державний комітет статистики України. – К.: "Техніка". – 2001. – 598 с. (Statistical Yearbook of Ukraine 2000 / Eds. O.G.Osaulenko. – State Committee on Statistics of Ukraine. – K.: "Tecnichs", 2001, – 598 p).
12. Статистичний щорічник України за 2001 рік. / За редакцією Осауленка О. Г. – Державний комітет статистики України. – К.: "Техніка". – 2002. – 647 с. (Statistical Yearbook of Ukraine 2000 / Eds. O.G.Osaulenko. – State Committee on Statistics of Ukraine. – K.: "Tecnichs", 2002, – 647 p).
13. Учитель в Украине – не авторитет (Teacher is person without authority). – http://podrobnosti.ua/print/society/2002/10/05/38172.html.

8. Annexes

Annex 1

Table 5. Percentage of pedagogical staff of pension-age working in general secondary schools

Administrative Region (*Oblast*)	Percentage of Pension-age Teachers in 1999	Percentage of Pension-age Teachers in 2001	Increase in a Number of Pension-age Teachers 1999 – 2001, %
Autonomous Republic of Crimea	15.7%	17.4%	10.7%
Cherkasy	8.4%	8.6%	2.1%
Chernihiv	8.6%	9.0%	5.4%
Chernivtsi	8.4%	9.0%	6.0%
Dnipropetrovsk	11.3%	12.2%	8.5%
Donetsk	17.0%	18.8%	10.9%
Ivano-Frankivsk	8.3%	10.8%	30.2%
Kharkiv	10.3%	11.4%	10.3%
Kherson	7.7%	8.7%	12.5%
Khmelnitskyy	7.3%	8.3%	13.8%
Kirovohrad	7.0%	8.6%	23.9%
Kyiv	12.4%	13.7%	10.5%
Kyiv City	14.8%	16.0%	8.0%
Luhansk	12.9%	14.3%	10.2%
Lviv	8.1%	10.2%	25.1%
Mykolayiv	8.5%	9.6%	13.0%
Odessa	12.1%	13.6%	12.5%
Poltava	6.8%	6.7%	-0.6%
Rivne	9.1%	10.2%	11.7%
Sevastopol City	19.4%	22.5%	15.7%
Sumy	6.7%	6.7%	0.6%
Ternopil	5.3%	7.4%	40.0%
Transcarpathia(n)	7.2%	8.8%	21.5%
Vinnitsya	6.8%	8.0%	17.2%
Volyn	7.2%	8.4%	17.2%
Zaporizhzhya	10.5%	11.4%	8.4%
Zhytomir	12.0%	13.9%	15.7%
Total in Ukraine:	**10.2%**	**11.5%**	**12.3%**

Annex 2

Table 6. Expenditures on Education in Different Countries of the World, % of GDP

Countries	Expenditures on Education in 1999, % of GDP
OECD Countries	
Denmark	8.1
Sweden	7.7
Norway	7.4
Austria	6.3
New Zealand	6.3
Finland	6.2
France	6.0
Canada	5.7
Portugal	5.7
Belgium	5.5
Switzerland	5.5
Poland	5.2
USA	5.2
Australia	5.0
The Netherlands	4.8
Germany	4.7
Hungary	4.7
Great Britain	4.7
Italy	4.5
Spain	4.5
The Czech Republic	4.4
Mexico	4.4
Ireland	4.3
Slovakia	4.3
Korea	4.1
Turkey	4.0

Greece	3.6
Japan	3.5
AVERAGE FOR OECD COUNTRIES	**5.2**
Other countries	
Israel	7.0
Zimbabwe	7.0
Tunisia	6.8
Jamaica	6.3
Malaysia	5.7
Brazil	5.2
Jordan	5.0
Thailand	4.9
Paraguay	4.8
Argentina	4.5
Chile	4.2
Philippines	4.2
Peru	3.3
India	3.2
Russia	3.0
Uruguay	2.8
China	2.1
Indonesia	0.8

Annex 3. (Table 7)

State expenditures on education in Ukraine

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Millions of hryvnias	2	65	622	2,932	3,961	4,959	4,483	4,645	5,976
As percentage of GDP	4.6	4.4	5.2	5.4	4.9	5.3	4.3	3.7	3.8

Source: World Bank Document (2001) Ukraine. Public Expenditure and Institutional Review

Annex 4 (Table 8)

Number of students per teacher in general secondary school (in conversion to full wage-rate) in different countries of the world

Countries	Number of students per teacher wage in 2000
OECD Countries	
Mexico	31.7
Korea	21.2
Canada	18.8
The Netherlands	17.1
New Zealand	16.3
Poland	15.5
Germany	15.2
Japan	15.2
USA	15.2
Great Britain	14.8
Sweden	14.1
Turkey	14.0
Finland	13.8
Slovakia	13.2
The Czech Republic	13.1
Denmark	12.8
Australia	12.6
France	12.5
Spain	11.9
Hungary	11.2
Greece	10.7
Italy	10.3
Belgium	9.7
Luxemburg	9.2
Portuguese	9.0
AVERAGE FOR OECD COUNTRIES	14.3
Other Countries	
Brazil	35.6
Philippines	34.1

Paraguay	30.6
Chile	30.2
Zimbabwe	24.7
Tunisia	21.5
Jordan	20.6
Indonesia	18.9
Jamaica	18.5
Peru	18.5
Malaysia	17.9
Egypt	17.1
China	16.4
India	16.1
Uruguay	14.9
Argentina	11.2

Annex 5

Table 9. Number of teaching hours per academic year in general secondary schools in OECD countries

Country	Primary School	Secondary School	Upper Secondary/Senior Compulsory Programme
USA	1,139	1,127	1,121
Mexico	800	1,182	–
New Zealand	985	968	950
Scotland	950	893	893
The Netherlands	930	867	867
Australia	882	811	803
Switzerland	884	859	674
Ireland	915	735	735
Belgium (Fl.)	831	716	671
Germany	783	732	690
Belgium (Fran.)	804	728	668
France	907	639	611
Greece	780	629	629
Spain	880	564	548
Italy	748	612	612
Austria	684	658	623
Korea	829	565	545
Portugal	815	595	515
The Czech Republic	650	650	621
Norway	713	633	505
Denmark	640	640	560
Finland	656	570	527
Turkey	639	–	504
Island	629	629	464
Hungary	583	555	555
Japan	635	557	478
AVERAGE FOR OECD COUNTRIES	**792**	**720**	**648**

Annex 6

Table 10. Correlation between number of students and teachers in general secondary schools of Ukraine in 2001

Administrative Region (*Oblast*)	Number of students			Number of teachers			Number of students per teacher		
	Total	City	Village	Total	City	Village	Total	City	Village
Autonomous Republic of Crimea	272,334	167,487	104,847	18,256	10,023	7,843	14.9	16.1	13.4
Cherkasy	191,812	109,006	82,806	16,593	7,528	9,065	11.6	14.5	9.1
Chernihiv	157,666	100,147	57,519	15,861	7,672	8,189	9.9	13.1	7.0
Chernivtsi	132,587	51,617	80,970	10,709	3,649	7,060	12.4	14.1	11.5
Dnipropetrovsk	462,124	378,495	83,629	28,347	21,215	7,132	16.3	17.8	11.7
Donetsk	542,976	485,979	56,997	36,357	30,892	5,465	14.9	15.7	10.4
Ivano-Frankivsk	213,633	94,684	118,949	18,862	7,382	11,480	11.3	12.8	10.4
Kharkiv	344,751	268,808	75,943	24,260	16,035	8,225	14.2	16.8	9.2
Kherson	167 321	97,370	69,951	12,682	6,318	6,364	13.2	15.4	11.0
Khmelnitskyy	203,834	115,582	88,252	19,196	8,076	11,120	10.6	14.3	7.9
Kirovohrad	152,062	92,253	59,809	12,938	6,397	6,541	11.8	14.4	9.1
Kyiv	250,785	152,896	97,889	19,350	9,558	9,792	13.0	16.0	10.0
Kyiv City	303,368	303,368	0	19,763	19,763	0	15.4	15.4	-
Luhansk	301,701	258,461	43,240	19,792	15,517	4,275	15.2	16.7	10.1
Lviv	378,315	224,603	153,712	32,766	16,237	16,529	11.5	13.8	9.3
Mykolayiv	173,375	108,762	64,613	12,858	6,609	6,249	13.5	16.5	10.3
Odessa	322,616	192,979	129,637	24,084	12,515	11,569	13.4	15.4	11.2
Poltava	211,500	125,030	86,470	18,044	8,340	9,704	11.7	15.0	8.9
Rivne	187,843	89,023	98,820	16,088	6,307	9,781	11.7	14.1	10.1
Sevastopol City	44,054	41,396	2,658	3,102	2,888	214	14.2	14.3	12.4
Sumy	162,307	107,179	55,128	14,205	7,339	6,866	11.4	14.6	8.0
Ternopil	161,968	74,310	87,658	16,002	5,839	10,163	10.1	12.7	8.6

Transcarpa-thia(n)	200,087	74 168	125,919	16,207	5,531	10,676	12.3	13.4	11.8
Vinnytsya	237,924	119,086	118,838	21,3 30	7,991	13,339	11.2	14.9	8.9
Volyn	162,931	82,770	80,161	16,118	6,095	10,023	10.1	13.6	8.0
Zaporizhzhya	246,851	179,944	66,907	18,543	12,175	6,368	13.3	14.8	10.5
Zhytomyr	198,809	117,011	81,798	17,384	7,750	9,634	11.4	15.1	8.5
Total in Ukraine:	**6,385,534**	**4,212,414**	**2,173, 120**	**499,697**	**276,031**	**223,666**	**12.8**	**15.3**	**9.7**

Source: Statistical Data: General Secondary Schools, Extracurricular Institutions, Pre-school and Vocational Schools (2000-2001); Ministry of Education and Science of Ukraine. – K.: Kompas, 2002, p.112; pp.16-18 & 68-70

Oksana Ovcharuk
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School Textbook Problems

1. Executive Summary

As a key medium for the transfer of knowledge, school textbooks play an important role in the process of educational instruction in secondary education. Educational reforms underway in Ukraine aim to update educational content and at the same time adapt textbooks to keep abreast of the times. The introduction of educational standards and curricula, changes in legislation and mechanisms for providing students with school textbook have a major influence on the production and distribution of textbooks in Ukraine. Although the content of teacher training literature, textbooks and manuals is constantly being changed and upgraded, they still fall short of meeting the needs of modern life and the labour market. There is also the additional problem of textbook supply failing to meet consumer demand adequately. All of this is to due to a number of factors – funding, author and printing selection, lack of clear authorization procedures, textbook delivery organization, as well as others. The given research has made it possible to conclude that, in general, the content and quality of textbooks produced in Ukraine are not suited to meeting the required standards and to satisfying the demand of both teachers and students. This study will touch upon the problems involved in textbook production, funding, printing and distribution and will offer recommendations to improve the situation in Ukraine.

Possible Recommendations for Addressing the Problem:

Recommendation A. Integration of key competencies into school textbook content

Recommendation B. Formation of transparent procedures for school textbook authorization:

Option B1 – Setting up an independent panel for textbook authorization

Option B2 – Abolishing the procedure for educational literature authorization

Recommendation C. Redistribution of state budget funds to ensure the supply of training and didactic materials:

Option C1 – Transfer of state budget funds to schools for independent procurement of textbooks and introduction of textbook selection at school level.

Option C2 – Transfer of state budget funds to district (rayon) departments of education for the purchase of educational and didactic materials (on the basis of district instructional design associations and libraries)

2. Introduction

Textbooks used in Ukraine's schools are currently published and printed by state order. Publishing houses that are the main contractors of state orders from the Ministry of Education and Science for printing and delivering school textbooks, occupy the lion's share

of the domestic textbook market. Over the course of recent years, a large number of educational materials have been revised and many new textbooks, manuals and training aids and programmes created due to the introduction of new subjects, requirements and format of educational instruction. However, these changes are piecemeal and bear little impact on the general problems and common perception of public consumers. Surveys conducted within the framework of the UNDP Project among instructors from the library stock collectors of different Ukrainian regions (*oblasts*) (November, 2002) (see Annex 7) testify to the fact that *the main textbook problems are: low quality, material overload, unattractiveness, high price and limited choice*. Many respondents believe that the current quality of textbooks is difficult to compare with their European counterparts. Their content falls short of meeting the needs of society and the labour market, and does not seek to instill vital life competencies in a student. Modern requirements to be met by education in terms of quality have changed. In addition, there are also the new requirement of senior school specialization, introduction of European content to curricula as well as content-orientation promoting integration into both European and global standards of education. This has had an impacted on the process of domestic textbook production, creating a series of problems that need to be dealt with.

Textbook problems in Ukraine consist of the fact that contemporary textbook content is not sufficiently designed to instill vital life competencies in a student. Moreover, it falls short of guiding students towards current needs, the acquisition of future professions and pursuit of further education. In addition, a certain proportion of school textbooks are unattractive to children both in terms of material presentation, and appearance contributing all of which contributes to the low quality of textbooks. The procedures for selecting authors and the textbooks themselves as well as, for the authorization of school textbooks to be used by the state educational system are drawn up without cooperation with independent review panels which just goes to show how ineffective the approach to this matter is. There is the additional problem of insufficient textbook availability and supply to students in various regions of Ukraine.

3. Problem Analysis

The Ukrainian textbook problem is fairly multifaceted and calls for an in-depth analysis of its various components. We shall therefore analyze the following aspects of this problem:

- Textbook content;
- Textbook and author selection problems;
- Textbook authorization procedures;
- Textbook funding and supply;

3.1. Textbook Content

To date, social and economic changes, integration processes and educational reforms are underway in Ukraine. In view of the declared transition to a new type of education that is humanistic and innovation-driven, Ukrainian education is going through a modernization process; new educational standards and curricula are being discussed and the content of textbooks is being overhauled. According to the National Doctrine for Development of Education the state is expected to facilitate the training of educated,

highly-moral, mobile, constructive and pragmatic personalities capable of collaboration, intercultural interaction and possessing a deep sense of responsibility for the country's destiny and its social and economic prosperity[52].

All of this is linked with the acquisition by students of necessary knowledge, skills, habits and life competencies. Designing educational content conducive for competency-acquisition is a new idea in Ukrainian education. It paves the way for linking the educational process to the needs of society today, providing young people with an essential toolkit for self-realization in the labour market, social processes, human relations and the surrounding environment. A competency-oriented approach is expected to promote the formation of a new value system in society, which should be open, varied, culturally rich, tolerant, and capable of ensuring the formation of a citizen and a patriot[53]. A competency approach may be the key to triggering qualitative changes – such as the introduction of a new-generation of textbooks.

The recent decade has seen an upgrading of textbooks in connection with the appearance, for the first time, of a set of Ukrainian textbooks. For instance, during the 2002/03 academic year it is planned to publish (on a state procurement order basis) 13.5 million new textbooks that have been designed according to the demands of new instruction programmes and state standards for twelve-year general secondary education. This upgrading has involved the removal of ideological doctrines, revision of school history and literature programmes, the rehabilitation of long forgotten personalities, new textbook design for recently introduced subjects as well as other changes. However, public opinion testifies to the fact that the foregoing does not necessarily improve the quality of textbooks. Results obtained from opinion polls among teachers, school administrators and managers (in Cherkasy, Mikolayiv, Ternopil and Luhansk) during the 2002/2003 academic year reveal that that teachers and students are faced with a shortage of certain textbooks for supporting new subjects and programmes; it has become evident that the content of these textbooks is short of meeting the needs of today nor do they encourage the acquisition of necessary life competencies (76% of respondents), the textbook format is not interesting for students and does not stimulate study.

Surveys conducted among book publishers, educationalists and users during the Ninth and Textbook Publishers Forums in Lviv (2002, 2003) testified to **the low quality of school textbooks in general** (92%). The surveys concentrated on textbooks responding to the real demands of society, availability of definite textbook quality criteria corresponding to European ones as well as to age and psychological requirements of students, level of material presentation difficulty, and so on.

The situation with textbook design in Ukraine has caused the educational community to work towards the introduction of mechanisms for ensuring the high quality of secondary school textbooks. In September 2001 an all-Ukrainian competition on instruction programmes and textbook design for primary schools according to State standards for primary education was launched. The competition has been extended to last

[52] National Doctrine for Development of Education

[53] Eurydice (2002) 'Key Competencies. A Developing Concept in General Compulsory Education', *The Information Network on Education in Europe*, p 28.

until 2005 when the transition to a four-year system of schooling will have been completed. According to the preliminary results of the competition, the range of most consistently popular textbooks among teachers between 2000-2003 can be categorized as follows:

Academic Year	Consistently Popular Textbooks
2000/01	12 from 52 (23%)
2001/02	30 from 107 (28%)
2002/03	24 from 119 (20%)

The next step towards introducing textbooks production procedures was the adoption of the Regulation on an All-Ukrainian Competition for Instruction Programmes and Textbooks for General Education Institutions approved by the Ministry of Education and Science Order No. 269 on 5 May 2003[54]. The regulation includes the procedures for organizing the competition, competition panel requirements and textbook requirements (criteria, judging rules, etc). The requirements for textbook content design are based on the following principles: a) academic value of the content; b) content structure; c) content affordability; and d) instruction and methods system.

In examining the question of school textbook quality studies performed by responsible state institutions in Ukraine should be mentioned. A study was performed by the Ministry of Education and Science which measured teacher assessment of Grade 8 and 9 geography textbooks used in Odessa regional schools in terms of their relevance to instruction programmes and adherence to the principles of academic value, consistency, organization and logicality of presentation of material. The results showed that these textbooks are outdated, overloaded with information, unsuitable in meeting the specific age requirements of students and written in a complicated way. About 40% of respondents think that the quality of these textbooks do not satisfy student interest and demand, while 28.7% of the respondents think that the textbooks do (See Annex 3).

For the purpose of comparison, let us cite the results of a school textbook quality survey held within the framework of the EUROCLIO network in 25 European countries for social sciences study. Thus, about 50% of students participating in the survey believed their history textbooks are interesting, while 37% of Ukrainian and 44% of Russian students "trust" their history textbooks[55]. The question of laying down certain criteria for producing high-quality textbook is considered to be very dangerous however. Many discussions are currently being held on this topic in European countries. The French authors P. Gerard and K. Rogerier define theoretical fundamentals, school textbook development criteria and assessment provisions for the different stages of writing, introducing and appraising school textbooks as well as the functions to be performed by teacher and textbook (10).

On the basis that school textbooks are aimed not only at assisting the acquisition of knowledge but at teaching approaches to various types of activities and life, foreign

[54] No. 269 MES Order of May 5, 2003 and registered on May 23, 2003, No. 391/7712.

[55] Van der Leew-Roord Joke (September 1996) 'History textbooks all over Europe. What makes a good history textbook? Reflections on the use and writing of history textbooks in Europe', at the European Standing Conference of History Teachers Associations, EUROCLIO.

pedagogues define their basic functions as the rendering, development and consolidation of knowledge; knowledge assessment which is possible by introducing various directions for assessment and self-assessment; assistance in knowledge and skills integration developed during the study of different subjects; reference functions as sources of information; and as functions of social and cultural upbringing for the development of a student's life position under conditions of social and cultural diversity (See Annex 5).

In comparing approaches to defining textbook quality criteria in terms of their functions as characterized by the Ukrainian system it should be mentioned that a functional approach to textbook assessment has existed in Ukraine for a long time based on the following functions: to inform, to motivate, to substantiate, to process, to control and to evaluate. Today, in the context of positive changes a textbook today is seen as a complete system aimed at responding to the requirements of a student. School course-books are also important in this respect insofar as they should be designed to simplify and organize information according to normal work and health standards.

It is also worth taking a look at changes that are characteristic of transition economy countries. For instance, in order to determine school textbook quality in Romania criteria were selected for senior school textbooks divided into the following three areas: textbook content requirements and criteria; pedagogical methods, and textbook aims and purposes[56]. The problems identified that concern content aspects include:

- Textbook development for ethnic minorities. In many countries and Ukraine a discussion is underway about whether it is practical to use original textbooks, especially for the study of language and literature, modern foreign languages, history of ethnic minorities, art, etc. For example, the experience of Eastern European countries, in particular in Romania, shows that the Ministry of Education and Science has authorized the use of those very textbooks that prove that in fact a free textbook market is operating[57]. Based on the World Bank survey data, creation of textbooks for ethnic minorities is regarded by many countries as a component of the poverty eradication strategy[58].
- Problems of the creation of a new generation of textbooks whose content would facilitate the introduction of specialized education in senior secondary school and young people's acquisition of vital life competencies and professional competencies, alike.

The experience of European countries which are concentrating their efforts on aligning educational content, and hence the content of teaching materials, with the needs of contemporary society and the labour market, is extremely useful. A competency-based approach has been incorporated into educational processes and the use of interactive methods, training patterns and use of didactic materials, such as textbooks, to accompany them. The principle of essential competency-acquisition by students is now recognized to

[56] Ministry of National Education/Order #5119/20 of December 1999 on the Selection Criteria for High School Textbooks, Romania.

[57] Ministry of National Education/Order #3831 of May 1999 on the Approval of Alternative Text-books for Upper Secondary School, Romania.

[58] The World Bank (2000) Education in Transition Economies. Washington DC, USA, pp. 32-33.

be an important principle when creating systems to indicate learning outcomes. Learning-outcome approaches are becoming a popular theme in teaching literature in Europe today. The process of selecting key competencies in education is currently underway on an international level, as well as the exchange and sharing of experience in this field.

A great deal of attention is being paid by modern education abroad in designing textbooks and teaching aids in the field of information and communication technologies. A European teacher and student today are expected to be equipped not only with paper versions of their textbooks. Training materials and aids should be modern facilities calling for the use of computers, web sites and video products that facilitate IT competency-acquisition. Many foreign textbook designers and publishing houses are channeling their energy into the use of new technologies in the field of teaching aids and equipment.

3.2. Problems of Textbook and Author Selection

The exhaustive list of training and instructional design literature recommended by the Ministry of Education and Science is shown in its list of programmes, textbooks and teaching instruction design manuals to be used in general educational institutions with Russian language being used to educate ethnic minorities, in special educational institutions (boarding schools and classes), and in nurseries.

An analysis of the "List of Textbooks and Training Aids Recommended by the Ministry of Education and Science for General Educational Institutions with Teaching in the Ukrainian Language"[59]consisting of the main textbooks and textbooks included in the list of supplementary ones makes it clear different proportion of the above mentioned two subgroups of the textbooks. Besides, sometimes there is a limited choice in some subjects textbooks as well. For instance, in the list of primary school textbooks there a limited choice in main and virtually no choice in supplementary textbooks, in disciplines such as art, Russian, French and Spanish.

At the same time the list of supplementary textbooks is relatively long for general secondary and senior schools, but with the same authors being recommended in subjects such as Ukrainian, German, Physics, Life Studies and other disciplines. In this case no supplementary books are recommended in the list of training disciplines at all (only one author for Spanish study – V. G. Redko, two authors for French study – N. P. Chumak and T. V. Golub); only one or two supplementary textbooks are recommended for some disciplines (physical culture, fine arts in primary school). At the same time, one may find the same authors in the list of main and supplementary textbooks (for example, maths textbook by M. V. Borgdanovich being recommended as a main textbook, and a textbook as supplementary aid for primary school classes).

Alongside the existing list and constraints on unauthorized textbook use, gymnasia, lyceums and experimental educational institutions are endeavouring to use those textbooks which, are, in their opinion, more attractive to teachers and students. During interviews and surveys we have analyzed the view of teachers and publishers on this situation. Thus,

[59] List of educational programmes, textbooks, and training aids recommended by the Ministry of Education and Science of Ukraine for use by general educational institutions with Ukrainian language teaching during the 2002/2003 academic year//Освіта України ["Ukraine's Education"] //№64-65 of 24.08,2002, pp. 7-14.

for example, instead of the recommended textbook by M.V. Bogdanovich on mathematics for primary school, teachers often use the textbook by L. Peterson and I. Kushnir, *Examples and Problems for the Smart and Lazy-bones*, which is designed along problem-search principles and seeks to impart to students the ability to learn. Another example is the use by teachers at gymnasia, lyceums and specialized schools of English language textbooks by Russian authors and those published by foreign publishing houses. Study performance using these textbooks, teachers believe, is much better. Besides, the surveys conducted at seminars and round-tables during our project work testified that it would be appropriate to use textbooks by foreign authors and produced by foreign publishing houses especially in the case of teaching ethnic minority students or foreign languages and literature, naturally on condition that these textbooks are adapted to the demands of Ukrainian schools. Representatives of many Ukrainian publishing houses feel that the supply of Russian textbooks on the Ukrainian market motivates Ukrainian authors to create high-quality textbooks. However, this is not enough since competition on the Ukrainian textbook market occurs among major publishers for Ministry of Education and Science approval and for winning a state procurement order.

This kind of situation is testament of the dissatisfaction of teachers and schools with textbooks recommended by the Ministry of Education and Science and points to the problem of ***a limited choice of textbooks*** preventing teachers from using training literature outside the approved list.

European countries are much more advanced in addressing similar problems and they have created a free market and wide selection of school textbooks. In so doing, some countries still operate textbook authorization systems. Teachers or schools and education divisions (departments) are responsible for the selection of textbooks. This situation is based on one criterion – i.e. confidence in the professionalism of teachers selecting textbooks. Poland is one example of a former socialist camp country operating a free textbook market. On the initiative of the Ministry of Education, a scientific survey of the domestic textbook market was conducted to analyze the popularity, content and quality of textbooks (E. Putkevich, 2002) over the period of intensive educational reforms between 1989 and 1991 and over 1998-1999 (4). Results of the survey have shown that it was the free textbook market and a wide choice of textbooks that enabled the teachers to select curricula. This led to a sustainable renewal of educational content and improvement of its quality.[60] However, research done by the EUROCLIO network shows that there are certain problems on the textbook market in many countries. Expert data shows that most school libraries in European countries, particularly in Central and Eastern Europe have not received quality textbooks and updated educational literature since 1989. This concerns updated and revised atlases and other materials, CD-ROMs, state-of-the-art developments, video textbooks, etc. (5), therefore reforms in textbooks supply area are a relevant issue in many countries.

The problem of author selection in most educational circles abroad boils down to the question of what kind of authors are considered to be the most suitable. It is believed that practicing teachers are the best authors. This thought is supported by the existence of

[60] Putkievicz Elzbieta (2002), Programy I podrecniki gimnazjalne – process powstawania oraz ich ocean przez nauczycieli// Zmiany w systemie oswiaty. Wyniki badan empirychnyh, Warsaw

efficient mechanisms at all stages of the creation and introduction of school textbooks. Procedures for creating school textbooks in many European countries provide for broad discussions among pedagogues and scholars as well as consumers on existing traditional and innovative pedagogical practice, programme and textbook subject matter, new technologies for educational development and other aspects. Such mechanisms allow for the definition of quality criteria and requirements of school textbook arising from the demands of society with consideration of professional and public interests and the normal standards characterizing textbook development. Above all when recruiting for good textbook authors an important fact to bear in mind is that they should not only have practical experience in teaching but also a command of top pedagogical techniques and skills that are suited to the requirements of school textbook writing.

On the other hand, an author needs guarantees that the textbook supply system will provide him/her with equal opportunities to compete for final consumer (student and parents) preferences. However the existing textbook authorization procedure curtails these rights. That is why in many foreign countries there are definite and transparent mechanisms that assure the unbiased functioning of independent commissions and expert reviews involving the participation of both textbook users and qualified experts, as well as the existence of transparent mechanisms for stimulating school textbook creation. The fact that only one higher educational and VET textbook among a score of others was awarded a top state premium prize in the field of education and science is a vivid indicator of the lack of motivation for Ukrainian authors to write school textbooks in this country[61]. Public organization initiatives to establish independent school textbook reviews are evidence of the democratization of this sphere as well as a stimulus for authors to write textbooks for schools. However several factors exist in Ukraine at present that are obstructing the introduction of such mechanisms.

3.3. Textbook Authorization Procedures

The procedure for textbook authorization (appointment of seals and certificates by the Ministry of Education and Science of Ukraine) in Ukraine takes place in accordance with the Ministry of Education and Science Regulation "On the Endorsement of Approval Procedures for Authorization of Educational Literature, Aids and Equipment by the Ministry of Education and Science of Ukraine" (2001) (37). The document sets out two types of authorization – "Approved by the Ministry of Education and Science of Ukraine" and "Recommended by the Ministry of Education and Science of Ukraine". Both of these have a five year validity period. The difference between the two types of authorization is that the first type presupposes that the materials undergo a compulsory approval procedure. Even though this document provides for the establishment of an unbiased review panel to judge the quality of the textbooks, curricula and training materials based on developed criteria, testing and implementation stages, a number of weaknesses exist within the approval procedure itself that operates within the framework of the said normative document:

- The procedure stipulates that school material reviews will be performed by independent experts; however, it remains unclear how the independent experts are

[61] http://www.mon.gov.ua/news/book

to be selected. Consequently, as noted by some textbook authors, experts interested in making decisions in favour of certain authors are included in the team of experts;

- The existing procedure fails to stipulate a clear deadline for reviewing applications by expert groups. The only fixed deadline is for drawing a final conclusion following the submission of expert reports (within 1 month). The absence of deadlines for reviewing applications by experts allows the progress of participating competitors to be hindered. Proof of possible protectionism can be seen in the list of main recommended textbooks and textbooks to be tested in the 2002/2003 academic year which contains items mostly by the same authors.
- The procedure fails to specify mechanisms for publicizing the results of sessions of the Scientific-and-Methodological Council. The publication of review results is incomplete and non-systemic. Thus, for example, based on the results of the review for the 2000/2001 academic year Grade 1 mathematics textbooks were judged as being "recommended for amendment and repeat review". The list of textbooks that were approved as a result of the 2001/2002 review does not contain these textbooks. Meanwhile these textbooks were printed at the expense of state budget funds for all first graders and were included in the list of textbooks to be reviewed in the 2002/2003 academic year. Other situations like this exist demonstrating that the procedures for approval and setting review deadlines are non-transparent while review results for competing textbooks are not comparable.
- Appeals against the Ministry's refusal to approve a textbook are considered by the Ministry itself with participation of independent experts whose requirements are not stipulated by current procedure.
- Decision-making on the authorization (seals and certificates) of textbooks for the twelve-year school occurs with delays. The existing mechanism for textbook review and approval provides for the announcement of a textbook competition to interested parties three years before the textbook is to become generally available (one year for holding the textbook contest, one year for textbook review, and one year for producing the final textbook edition). A deadline is also set for repeat reviews (if required), followed by approval, printing and distribution. As a matter of fact, decisions lag behind this schedule, which gives ground for new violations and decisions that override existing rules.

This being the case, parents attempt to compensate for the shortage of quality textbooks by buying those textbooks, which are not always the product of professionals (collections of stories, riddles, quizzes, key facts, etc.). Meanwhile individual authors and publishers design and turn out educational literature endorsed by experts and enjoying market demand, which for various reasons they choose not to submit for approval. This means that the official approval system triggers demand for non-approved publications and cannot be seen as a warranty of a textbook's quality. Teachers' negative assessment of individual textbooks which have been approved and produced in large circulation is also evidence of this. Nor can ministry approval be regarded as a means for assisting teachers in the selection of textbooks because in the absence of feedback mechanisms and mechanisms for standardized assessment of student achievement, such a selection is based on a narrow decision-making base which can lead to the danger of voluntarism and authoritarianism, that is "hand-picked" decision-making which cannot be acceptable in a democratic society.

Moreover, limiting student access to educational literature is incompatible with democratic principles (except in cases dictated by moral and social principles and stipulated by relevant laws). There is a problem of the non-proportional choice of various school subject textbooks in the list of recommended literature. Thus, a limited choice of textbooks and programmes exists that makes it difficult for students to receive a good standard of education and for teachers to work efficiently. This aspect is a great obstacle on the path to improving the quality of general school education.

Most Western European countries operate an open and free textbook market. Textbook selection for educational use involves discussion by methodological councils, which provide their conclusions on the practicality of using individual textbooks in the educational process. It is believed however that textbook approval procedures limit democratic processes to some extent and run counter to the freedom of expression, rights and interests of book publishers[62]. The freedom of textbook choice and provision of incentives for the design of new pedagogical technologies that suit the individual needs of a student are the priorities underlying the creation of training materials. Procedures for textbook authorization are used on rare occasions. In this case, criteria for banning or authorizing a textbook are transparent and clearly defined, a panel should be unbiased and its decisions should be transparent. Users, i.e. teachers, parents, and students determine textbook quality.

European countries with transition economies are constantly searching for the best ways of creating a textbook market which may explain why textbook authorization mechanisms have still not been completely abolished by them. Romania is an example of such a country. After conducting a study of the state of its educational book market with the support of the World Bank, an independent Textbook Authorization Board (TAB), following expert recommendations, was set up with clear mechanisms involving both the public and professionals in the development of quality criteria, requirements and standards necessary for the production of good textbooks. The creation of this body triggered the operation of a free school textbook market for senior schools to begin with (December 1998) and then for the entire general secondary school system. At the same time the Ministry of National Education of Romania declared its commitment to provide textbooks to children from low-income families free of charge[63].

In some European countries (Spain, Great Britain, Poland, etc.) publishing houses are put in charge of the function of selecting programme and textbook authors for recommendation to their ministries of education. The peculiarity of this mechanism is that it does not depend on state procurement orders. These countries' textbook markets offer a wide choice with teachers and parents being able to choose the best textbooks in terms of material presentation and volume. The textbooks are selected not only according to the wishes of teachers or parents. Before a textbook or manual is introduced into the school curriculum it is discussed by instructional design associations and teacher-parent group meetings, which take into account both the quality and price (accessibility) of a textbook.

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[62] Van der Leeuw-Roord Joke (September 1996) 'History Textbooks All Over Europe', http://www.mitya.bos.ru/euroclio/world/textbooks.html

[63] Ministry of National Education/Order #3831 of May 1999 on Approval of Alternative Textbooks for Upper Secondary School, Romania.

Naturally, all of this contributes to guaranteeing a professional approach in school textbook choice and introduction in these countries.

3.4. Textbook Funding and Supply Problems

Ukraine has inherited a system for the centralized supply of textbooks via school libraries from the former Soviet Union. Following the introduction of amendments to the 1978 USSR Constitution and adoption of a new Ukrainian Constitution in 1996, there were two attempts to change state policy in the textbook supply area. The main feature of both these attempts was the commitment to reduce the textbook market share of state finance and retain administrative control of textbook selection:

- An annual fee was introduced in August 1996 for textbook use. This fee was equal to 20% of the textbook's original price (29). Exempted from this payment were children from families receiving state assistance, students from special schools and boarding schools. The first version of the order on the payment procedure passed by the Ministry of Education and Science in 1996 stated that the approved budget allocations for the acquisition of school textbooks shall be reduced by the amount received for textbook use (33). All students, except for those from vulnerable social groups, were expected to pay in full for textbook use. However, the system proved inoperable. Its main flaws were lack of transparency and feedback. At the beginning of 1997, the provision on the reduction of budget allocations was deleted from the said order (34), but the volume of funds received for the use of textbooks is not indicated in the Ministry's official documents.
- Transition was declared in July 1998 to the free sale of textbooks except for certain market sectors, including primary and special-purpose schools, children from state assisted families and orphans (30). These student categories were supposed to receive textbooks from school libraries on a borrowing payment basis. The mechanism for approval of all educational and instructional literature was retained. However the said transition was never implemented and a relevant decision was cancelled in April 1999 (31). In accordance with a regulation of the Cabinet of Ministers of Ukraine and orders of the Ministry of Education and Science on the procedure for textbook supply (35), the policy for centralized supply of textbooks and training aids through school libraries was re-approved.

The results of the 2000/2001 academic year have shown that textbooks were printed at the expense of state budget funds, while other funding sources were not indicated (43). Over a five-year period, educational literature worth UAH 248.8 million was issued, and UAH 49.8 million were collected for using it. The Minister of Education and Science, Vasyl Kremen, noted (13) (0) that the annual volume of funds collected for the use of textbooks was about UAH 10.0 million, or only 20% of the value of total educational literature. The amount of funds collected by local education departments for the use of textbooks did not influence the delivery of new textbooks[64]. Under these conditions, neither the users, nor local education agencies had economic incentives to collect funds for

[64] In so doing, individual instructional designers hold that 100% payment was collected but this had failed to impact the purchase of new literature. Under their estimates, new obtained literature costs less than the amount of funds for the rent transferred to the ministry from a district (rayon).

textbook use, with the education ministry resorting to purely administrative measures. In November 2002, the levy of fees for the use of school textbooks was cancelled by the Constitutional Court of Ukraine as unconstitutional (28).

The problem is that after having submitted applications for textbook delivery schools end up not receiving the volume of books ordered. However during interviews with representatives of regional (*oblast*) libraries it was revealed that during 2000-2002 schools received but did not use primary and secondary school textbooks (*ABC Book* by O Pryshchepa, *Physics* by O Buhayov and V.Morozhuyk's *Biology*). State budget funds allocated for funding textbook delivery are disbursed inefficiently. In the course of this research and surveys the following aspects were revealed:

- Textbooks are printed and delivered to schools with delays. At the beginning of the 2001/2002 academic year, 3.7 million textbooks (29% of the 2001 circulation) were printed and delivered to general education institutions (43), while early in the 2002/2003 academic year only 49% of funds intended for textbook printing were received from the state budget (45).
- Textbooks, which are subsequently not used by schools, are printed with state budget funds (see Annex 7). This is due to the lack of consistency between textbook shipments, orders and delivery which cannot be used in the educational process owing to poor quality or mismatch with the curriculum or due to failure to comply with other requirements, for example, the use of IT textbooks calls for the use of computers, while textbooks based on state-of-the-art pedagogical processes require that relevant instructional literature should be available to teachers.
- The Ministry does not hold open tenders for the procurement of textbooks. The Antimonopoly Committee inspection of 1999 revealed that contracts with publishing houses provided for 45-50% profitability (11). The inspection conducted by the Audit Chamber in 2002 showed (18), that rules for holding tenders during public procurement of textbooks are stipulated by internal documents of the Methodological and Publishing Centre for Production and Supply of Educational Literature.
- Distribution of textbooks among regions (*oblasts*), districts (*rayons*) and schools needs to be based on a ramified distribution system. As is demonstrated by general practice, state distribution systems are mostly expensive and inefficient, and they are responsible for textbook shortage. Due to different reasons, about 60% of students (based on said calculations) or about 40% of students (proceeding from official information from the Ministry of Education and Science) are left without textbooks (at the beginning of an academic year this indicator is even higher).

Therefore, despite all changes that have taken place in Ukraine's effective legislation with respect to textbook supply, no significant progress has occurred in the efficiency of textbook delivery. The centralized character of textbook funding has not changed, either. It consists of the following:

- The selection of textbooks is dictated not by the bottom level of the consumer market (teachers and parents) but by the top, i.e. the Ministry of Education and Science of Ukraine. Owing to the saving in funds, there is no incentive to create alternative textbooks due to the rise in printing costs. Thus, for example, in

preparing textbooks for Grades 1-2 of the twelve-year curriculum for native language, reading, mathematics and English alone, two or three versions of a textbook were printed, for other subjects only one textbook was printed (46);

- The proportion of parent funding for textbooks and manuals is over 50%;
- The existing system for textbook supply does not provide for special measures to help children from low-income families to receive textbooks. The population of this category of student may be estimated considering that 10% of families survive on an income lower than subsistence level enabling families to qualify for state social assistance (8, p. 418).

The trend towards the increase in volume of parent funding for textbooks is observed in many transition economies. For example, the OECD data show that in Hungary parents were financing 60% of textbook prices in 1994, and 80% in 1997[65].

Currently, the delivery of educational and methodological literature to school-children in Ukraine is financed from the following sources:

- ***The state budget***, which pays for the making and delivery of textbooks to towns and districts under the list and circulation approved by the Ministry of Education and Science. Based on 2002 data, the planned allocation for the publishing, storage and delivery of textbooks was UAH 94.1 million (see Annex 6).
- ***Local budgets paying for the delivery of textbooks to schools and purchase of textbooks which are undersupplied by the centralized distribution system.*** There is no consolidated information on local budget expenditures for the delivery of textbooks to schools. According to regional press estimates, in 2002, these costs were about 10% of the textbook value making about UAH 9.0 million. Local budgets additionally finance the purchase of textbooks for schools. Local authorities try to implement additionally various programmes for supporting schools and poor families within the context of the textbook provision problem. Thus, Kyiv city administration plans to allocate annually UAH 4.0 million from the local budget during the course of 2002-2005 for the implementation of the Kyiv Textbook Programme (19). Kyiv has 4.8% of all Ukraine's school children meaning that state budget costs for making textbooks available to them are 94.1*4.8% = UAH 4.5 million. Therefore, the local Kyiv city budget allocates not less than the state budget does for supplying textbooks to schoolchildren. Financing is provided from other local budgets, too (9), though no consolidated information on this is available.
- ***Parents who pay for textbooks needed for education whose printing is not paid for by the state budget.*** According to an all-Ukrainian sociological survey conducted in November 2002 (20), parents whose children study in general state educational institutions spent UAH 235 million in 2002 for the purchase of textbooks and training aids. According to survey results, in 2002, Ukrainian households spent UAH 887.0 million on the education of children in state primary and general educational institutions. These results agree with the State Committee for Statistics data under which Ukraine's households with children aged under 18 in 2002 spent

[65] The World Bank (2000) *Education in Transition Economies*. Washington DC, USA, p. 63.

UAH 928.0 million on education, training and pre-school formation (See Annex 1). This situation is also characteristic of other former socialist camp countries. For example, in Georgia, all expenses for the purchase of textbooks are borne by parents. Meanwhile, primary students (Grades 1-3) are 90% supplied with textbooks, with this number going down to 50% for students in Grades 4 to 8, and to 15% for students in Grades 9 to 12. In Azerbaijan, the state pays for textbooks for pupils in Grades 1 to 4, and in senior classes, parents will pay for textbooks themselves. As a whole, textbooks are available for 30-35% of pupils. In Belarus textbooks are available for only 50% of pupils. [66]

As is noted by many Ukrainian library specialists, if a district (*rayon*) receives 32% of a whole shipment of textbooks, individual schools may receive 32% of the school's order for textbooks. At the same time, as noted by them, specialized schools, new types of schools (gymnasia, lyceums, and collegiums), are, as a rule, better supplied with textbooks than are schools for students from socially vulnerable population groups (boarding schools for orphans, social rehabilitation schools, schools in poor town neighbourhoods). This is due to the fact that the distribution of educational literature among schools is not regulated by special rules and is non-transparent at the same time as the influence of parents of students from specialized schools remains higher. As attested by the Antimonopoly Committee investigation (11), a common situation is when textbooks are not distributed and are returned by local bookstores to publishing houses, which shows that there is a low demand for them. Given the low demand for certain textbooks the retail trade has the common sense to direct its activity towards satisfying a small buyer group ready to pay a high price for the education of children.

The constraints on and control of the textbook market, lack of legal framework, non-transparency of textbook authorization (approval) procedures, flaws in the mechanisms for funding and supply of educational-and-methodological materials in general, and textbooks, in particular, have prevented the introduction of new programmes and textbooks as well as innovative pedagogical techniques; adversely impacted on the introduction of ethnic language teaching, study of national history, European languages and on the creation and introduction of new educational materials for children with various physical impairments; delayed for an indefinite period the study of information and communication technologies; and limited equitable access to quality education in general. Below policy options will be presented taking into consideration those changes and achievements that have already taken place in our country in terms of the creation of a school textbook market.

4. List of Policy Options

The formulation of state policy related to school textbooks and improvement of the quality of education depend on many factors, calling for in-depth work and constructive changes. The development of efficient mechanisms concerning the measures, funding and role of stakeholders capable of improving the textbook supply situation in Ukraine is reflected in the following recommendations:

Recommendation A. Integration of key competencies into school textbook content

[66] The World Bank (2002) *Education in Transition Economies,* Washington DC, USA, p. 91.

Recommendation B. Formation of transparent procedures for school textbook authorization:

Policy Option B1 – Setting up an independent panel for textbook authorization

Policy Option B2 – Abolishing the procedure for educational literature authorization

Recommendation C. Redistribution of state budget funds to ensure the supply of training and didactic materials:

Policy Option C1 – Transfer of state budget funds to schools for independent procurement of textbooks and introduction of textbook selection at school level.

Policy Option C2 – Transfer of state budget funds to district (rayon) departments of education for the purchase of educational and didactic materials (on the basis of district instructional design studies and library collectors)

5. Description of Policy Options

Recommendation A. Integration of key competencies into school textbook content

Textbooks play a significant role in the educational process, by providing basic knowledge and developing a student's basic skills and competencies. Within the context of educational reform and in particular curriculum upgrading (a pressing issue in Ukraine today) along with the transition towards a more innovative and humanistic approach in the system of education, it is important that the necessary conditions are created for an individual to acquire competencies that are considered necessary in life: these include a complete set of knowledge, skills, attitudes and values suited to leading an active life in modern society. The majority of European countries today develop their own programmes and textbooks that are governed by the principle of a competency-oriented approach in terms of their content and structure.

The integration of components designed to achieve vital competencies (key competencies) is a pre-condition that will ensure a student will obtain a high standard of education. This kind of education will promote successful competition on the labour market, flexibility in the attainment of knowledge, quick and efficient social integration and the formation of a social conscience.

This recommendation involves the upgrading of educational content within the context of modern changes connected with the development of new educational standards and the switch to a twelve-year curriculum. The recommendation is expected to be put into place on a long-term basis since it concerns competency identification and selection, the development of appropriate instructional guidelines by the education community and the subsequent communication of these guidelines to the pedagogical community at large. Moreover, in order to renew and create new textbooks based on a competency-oriented approach the authors should anticipate the likely outcomes of applying such an approach. This recommendation includes the following stages:

a) *Upgrading the content of existing textbooks by creating accompanying methodological guidelines on the introduction of key competencies.* This kind of approach to solving the problem could be chosen precisely because today's state budget funds for educational literature development and publication are not intended for the across-the-board updating of textbooks. In spite of the fact that state authorities have declared their intent to upgrade general secondary educational content today it can

be safely forecasted that until these new standards are adopted schools throughout Ukraine will continue to use educational literature published during the years of independence for the next five years. This is why it would make sense to initiate a process for developing methodological guidelines for existing textbooks together with discussion about key competencies. For the purpose of this work it is important to invite practicing teachers and methods experts to take part in organized discussions and corresponding training courses. Study of the best foreign experience and pedagogical practice of key competencies introduction into modern educational content is a necessary condition of the work.

b) *The creation of a new generation of textbooks based on a competency-oriented approach*. What is important about this recommendation is that it anticipates a system for reviewing textbook functions i.e. consideration of the competency-oriented function of a textbook within the context of existing competency systems is recognized as a necessary condition. This textbook function should be reflected in terms of the content, methods and supporting materials used by the textbook for teachers and students. Is it also important that this function is reflected in the main requirements of textbook competition review panels and that it is taken into consideration during the course of developing criteria to assess the quality of school textbooks. A broad discussion of this aspect is also necessary between pedagogues, the general public and users of educational services insofar as it should reflect the social order in respect of textbook quality and functional characteristics. During the course of identifying criteria for textbook content structure it is necessary to take into consideration the demands of society and foreign experience.

c) *Development of pedagogical techniques for the efficient introduction of textbook content in school operation practice* that is aimed at the development of vital competencies concerns the use of interactive information and communication technologies, developmental and design methodologies, as well as other factors;

d) *Introducing measures designed to inform and educate authors of school textbooks* about new approaches to content development, to discuss textbook quality criteria and to motivate authors to create a new generation of educational literature. This proposal includes the organization of a series of targeted seminars, round-tables and training sessions. It would be appropriate to organize these with the participation of representatives from the publishing and academic world, as well as from NGOs, public organizations and international projects and programmes.

e) *Connecting the teacher training system to the introduction of competency-oriented education at school* (through workshops, briefing sessions, retraining and an introduction to new developments, etc.). Teacher training and advanced training are to play an important role in the process of familiarizing teachers and students with ways to introduce key competencies. It is practical to hold training sessions and deliver lecture courses on this issue. It may also be relevant to introduce competency-oriented training for teachers themselves.

Recommendation B. Formation of transparent procedures for school textbook authorization can be introduced by adopting the following two options:

Policy Option B1 – Introducing more transparency to textbook evaluation (Setting up an independent panel for textbook authorization)

This procedure relates to the execution of procedures for the development, evaluation and authorization of school textbooks by an independent panel that does not belong to any state agency and is, hence, unbiased and, by the token of the functions performed, accountable to relevant community-based organizations.

This panel is expected to:

- involve teachers and sector experts in the textbook evaluation;
- run textbook pilot tests and evaluate this process;
- elaborate textbook evaluation criteria with regard to current demands and international trends;
- develop criteria for textbook review;
- set up sector-specific review teams;
- coordinate and determine a new role for publishers and school textbook designers with account of new requirements.

It is important to identify *the main conditions for the operation of the independent panel and specify the responsibilities of its members*:

- Coordination of activities and unbiased review of all proposals (materials);
- Organization of meetings with publishers and authors to discuss the issues of quality, demand, etc.;
- Ensuring transparent evaluation procedures;
- Maintaining communication with schools and teachers testing textbooks to obtain feedback from them;
- Ensuring security and confidentiality during review sessions;
- Informing public opinion about review results;
- Collaboration with community and state educational institutions to obtain feedback as to the efficiency of the training materials reviewed and approved by the panel.

The independent panel may also be interested in:

- development of methods and criteria for the assessment of the quality of textbooks under review;
- conducting comparative studies of the experience of other countries; and
- conducting research for forecasting purpose, etc.

Possible Flaws

In the event that an independent panel is set up it is necessary to expect a possible conflict of interests when panel members are representatives of state structures responsible for making decisions on textbook authorization.

Policy Option B2 – Abolishing the procedure for educational literature authorization

Abolishing the procedure for textbook authorization can contribute to the creation of a free market. This process can occur gradually to offset risks inherent in the abolition process. For example, authorization can be abolished for senior school, which will particularly need a diversity of textbooks in the transition to specialized education and

following the adoption of the new state standards. At the next stage, the new arrangement can be extended to all school textbooks.

In so doing, the selection and purchasing functions will rest immediately with schools, local communities or parents. Setting up a community council composed of parents, pedagogical associations, and community representatives is expected to influence the process of the creation and publication of textbooks and may be a regulating factor in meeting the demand for and supporting the emergence of high-quality textbooks, and regulating their prices. Community councils are to take care of students whose families belong to low-income groups as well as to vulnerable social groups in terms of providing them with textbooks.

This proposal is expected to bring about competition between book publishers and facilitate price regulation, which is a characteristic of a market economy.

Possible Flaws

Since procurement volume of educational literature may go down this may cause textbook prices to go up. It could also cause the loss of big publisher interest in fulfilling orders for textbook publication.

It could also lead to textbook market supply of low-quality and unprofessional literature. However, under conditions of competitiveness between other quality products, an incentive will emerge to improve the imperfect products or demand for them will decrease.

Option B3 – Limit the authorization procedure to the establishment of textbook conformity with existing programmes and standards

This proposal was "vocalized" through an opinion survey at the Ninth Book Publishers Forum in Lviv. At the same time, an opinion was voiced that it would be desirable to submit textbooks for panel review together with corresponding curricula to ensure their simultaneous approval. This proposal does not impact structural changes but concerns the change in functions of officials responsible for the authorization procedure.

Recommendation C. Redistribution of state budget funds to ensure the supply of training and didactic materials:

This proposal could be implemented in the following ways: providing funds for textbook procurement directly for schools and allocating funds to district (*rayon*) departments of education.

To date, as many as 80.8 million textbook copies are needed to meet the student body demand for main textbooks. In order to determine the annual requirement for the publication of educational literature at the expense of the state budget it would be reasonable to rely on former Soviet system practice where textbooks were printed with account of 40% of the student body demand, making 32.3 million copies per year. Over 1998-2002, not more than 13.5 million textbooks were printed (i.e. 42% of 32.2 or 17% of the student body requirement).

During the distribution of textbooks it is important to take into account the supply of textbooks to students from low-income families. Families whose children receive no textbooks at the expense of the state have to buy textbooks whose market price varies from

UAH 5-6 (state procurement order) to UAH 30. This limits the potential for equitable access to education.

After having determined the textbook product line, it is necessary to determine the quantity of textbooks needed for ensuring the educational process. Proceeding from the "List of Textbooks Recommended by the Ministry of Education and Science for Use in General Education Institutions" with due regard for contemporary requirements to be met by the educational system and for the Concept of European Dimension in Education, implementation of the educational process calls for, at least:

- All principal and additional textbooks as well as training textbooks (and reading-books to main textbooks, and dictionaries for additional textbooks);
- Interactive educational and didactic materials (electronic textbooks) facilitating the development of skills in using IT and communication technologies as well as the acquisition of relevant competencies;
- Visual aids;
- Educational and instructional sets for pre-school education (considering that the groundwork for educational excellence is created in children aged 3 to 6 years);
- Textbook versions for senior school of various training specialization;
- Textbooks for schools with ethnic minority language training and textbooks for specialized schools;
- Textbooks for students which study on an individual educational basis;
- Two sets of textbooks for primary school students (one for use at home, and the other – for use at school to reduce the requirement for children to carry these materials by themselves)

Policy Option C1 – Transfer of state budget funds to schools for independent procurement of textbooks and introduction of textbook selection at school level

Selection of textbooks at school level may mean the introduction of the free selection of textbooks and educational-didactic materials at the level of variable curricula components at the first stage and the introduction of the selection of educational and didactic literature for all subjects at the second stage.

It is suggested that state budget funds should be transferred to schools for the purpose of independent replenishment by the latter of their libraries and setting their own rules for literature use, i.e. textbook hire from school libraries, purchase of textbooks for all students (with parent funding) or for students of certain grades (e.g. primary grades) or for students from low-income families (under the decision of the school's governing board).

This approach shall enjoy the following advantages:

- Authors and publishers will have to compete for consumer preferences. This will contribute to quality improvement, diversity and accessibility of textbooks due to the action of market mechanisms. Textbook advertising and market promotion will raise teacher awareness of various pedagogical techniques and textbooks;
- Publishers will be able to plan the circulation of educational and didactic literature, publish pilot prints, and manufacture educational and methodological sets. This will

improve the working conditions for authors and publishers and will contribute to the reduction of textbook prices;

- The efficiency of using state budget funds will be raised due to the elimination of existing flaws in the disbursement of funds within the centralized textbook supply system;
- Children from low-income families will be able to receive benefits in compliance with decisions made a school level where it is convenient to determine the volume of and procedure for providing benefits as well as target beneficiaries in a flexible way based on self-government principles;
- This will facilitate the development of specialized textbooks under specialized school requirements.

These changes in the textbook provision system will call for amending existing legislation, namely:

- Schools have to command greater financial independence to be able to dispose of their own budget, including the acquisition of textbooks;
- Local communities have to be involved in school management. These communities are well placed to identify students in need of financial support (such as preferential provision of textbooks). The local community can also monitor the efficiency of fund spending by school management.

These proposals are also stated in other policy review documents drafted by the team and they will contribute to the development of other aspects of general secondary educational administration and management.

Transition to such a system of textbook provision may proceed smoothly and without price variations due to the fact that:

- Textbooks available to schools will serve as buffers cushioning the variations of textbook supply to regions;
- Introduction of this system is expected to contribute to the development of the secondary textbook market, which will serve as an alternative to the purchase of new textbooks[67]. Due to this, the market will supply several textbook versions – by different authors, at different printing costs, new, and used ones. This will increase the competition and increase the potential for choice depending on consumer priorities and affordability.

Possible Flaws

In the absence of community monitoring, funds allocated to schools may be used inefficiently. Consumers may suffer from administrative pressures forcing them to buy and use individual textbooks.

[67] As attested by the above data, in the FSU where textbooks were cheap and entrepreneurship was not encouraged, at least 20% of textbooks circulated on a secondary market. Therefore, it would be realistic to expect that the secondary market depth would not be smaller.

Policy Option C2 – Transfer of state budget funds to district (rayon) departments of education for the purchase of educational and didactic materials

This proposal involves the transfer of targeted funds for the purchase of textbooks to district (*rayon*) departments of education. Textbooks may be selected by district instructional design associations and libraries which perform the function of obtaining and distributing educational literature.

To introduce such a mechanism, it is necessary to revisit the role of and functions performed by relevant officials in district instructional design associations which include the following:

- Provision of information on existing training and instructional materials for schools (dissemination of catalogues, lists, etc.);
- Holding regular sessions to discuss materials used by teachers. It would be possible and desirable to make public the results of these sessions and to submit them to independent authorization panels;
- Identifying, collecting and processing information on the required textbooks, completion and placement of textbook purchase orders. In so doing, the district educational departments may sign contracts directly with publishers for the delivery of textbooks;
- Mandatory accountability to schools in the district on the textbook budget, application amounts and relevant textbook procurement under these applications.
- Holding relevant events by way of scientific and instructional backing of teachers using specific educational and methodological materials (introduction to new methodologies, toolkits, and pedagogical processes for textbook utilization, involvement of parent councils and community-based organizations in the discussion of textbooks for the purpose of obtaining additional funds for training materials)

Therefore, district educational departments may jointly with the district instructional design associations make decisions on the choice of educational literature and also discuss textbook or textbook flaws and provide their feedback to relevant commissions. The results of these discussions must be reflected in the press and accounted for by independent authorization panels that eliminate these flaws. Enabling the choice of best textbooks, the discussion of educational and instructional literature at these district instructional design associations is of particular importance in terms of quality and exchange of implementation methods and patterns. Involvement of community-based organizations creates the potential for raising additional funds. Publishing houses may initiate these discussions. Discussion findings and practical use results may be communicated to textbook authorization panels.

6. Conclusion

These recommendations have been drafted during the process of analyzing school textbook problems under the UNDP Project "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" and they suggest an in-depth discussion with the government and academic community, publishers and users of educational services. Insofar as the research is based in general on an analysis of public opinion through surveys

and studying positive world experience it should be mentioned that the proposed options reflect the demands of modern users. Thus, implementation of the above mentioned educational policy options, or their elements, could result in qualitative changes in the Ukrainian textbook-production market which in turn could influence the process of improving the quality of education in Ukraine. To put the educational policy options into practice, the Ukrainian government needs to determine, in a sound and constructive way, those stages and measures that are bound to yield specific positive results.

7. References

1. Organization for Economic Cooperation and Development (OECD) (October 2001) *Definition and Selection of Competencies. Country Contribution Process: Summary and Country Reports*, University of Neuchatel, p. 279
2. Ministry of National Education (1999), 'Order #3831 on the Approval of Alternative Textbooks for Upper Secondary School', Romania.
3. Nogovб M., Bблint L. and AdamkoviиE. (2002) 'Textbook Policy in Slovakia.- An analysis of the present state and suggestions for improving the process of planning, publishing, financing, authorization, and distribution of textbooks', an extract from the RNDr research report, The State Pedagogical Institute Bratislava, p 33.
4. Putkievicz Elzbieta (2002) *Programy I podrecniki gimnazjalne – process powstawania oraz ich ocean przez nauczycieli// Zmiany w systemie oswiaty. Wyniki badan empirychnyh*, Warsaw, pp. 85-143.
5. Van der Leeuw-Roord J. (September 1996) 'History textbooks all over Europe. What makes a good history textbook? Reflections on the use and writing of history textbooks in Europe'at the, European Standing Conference of History Teachers Associations, EUROCLIO.
6. Алексей Газубей. "За школьные учебники больше платить не нужно" – Восточный проект online; новости Северного Донбасса и не только [Alexei Gazubei (16.12.2002) 'No Need to Pay for School Textbooks Anymore', in *News from Northern Donbass and elsewhere*, Eastern Project Online, www.vp.donetsk.ua
7. Аналіз проблем бідності на сайті Світового Банку: [Analysis of Poverty Problems on the World Bank Site] www.worldbank.org
8. Державний комітет статистики України. Статистичний щорічник України за 2001 рік [State Committee for Statistics of Ukraine (2002) *The 2001 Statistics Year Book*], Kyiv, p. 644.
9. Довідка Міністерства освіти і науки України "Про стан вивчення географії України в загальноосвітніх навчальних закладах Одеської області" [Ministry of Education and Science of Ukraine Brief "On the Teaching of Geography of Ukraine in Educational Establishments of Odessa Oblast] № 1/9-140 of 15.03.2002
10. Жерар Ф.-М., Рожер'єр К. Як розробляти та оцінювати шкільні підручники [Gerard P. M. (2001) *How to Design and Evaluate School Textbooks*], KIC Publishers, p.339.
11. Звіт про роботу Антимонопольного Комітету України в 1999 році [Report on the Performance of the Antimonopoly Committee of Ukraine over 1999].
12. М. Лазутова. Реформа образования терпит крах. – Независимая газета [M. Lazutova. 'Educational Reform on the Verge of a Debacle' in Independent

Newspaper], № 2 (1573), 14.01.1998; Курьер образования, електронний журнал [Educational Courier, E-Magazine], №2 (5).

13. Матеріали прес-конференції Міністра освіти і науки Василя Кременя в прес-центрі "Український час" [Materials from the Press-Conference of the Minister of Education and Science Vasyl Kremen' in *Ukrainsky Chas* Press-Center of 24.12.2002].
14. Ніна Логвин "Сучасним міським дітям нудно вчити віршики про плуг і ферму" – журнал Книжковий клуб плюс[Nina Logvin (2002) 'Contemporary Urban Children Hate Learning Verses about the Plough and the Farm', in *Book World Magazine Plus*] № 7-8.
15. О стратегии Минобразования России в области учебного книгоиздания – Официальные документы в образовании. Информационный бюллетень, журнал, [On the Strategy of Russia's Ministry of Education in the Textbook Publishing area. Official Documents in Education Sector. Information Bulletin], Journal №9 (24), May 1996, pp. 59-71.
16. Образование в странах с переходной экономикой. Всемирный Банк [World Bank (2000) *Education in Transition Economies*, Washington D.C, USA. pp. 32-33.
17. О. Суржик «Довше вчишся – далі будеш?» [O. Surgik (01.09.2001) 'The Longer You Study, the Farther You Go?"] – Дзеркало тижня [Mirror Weekly], № 32 (356) оказники розвитку загальної середньої, дошкільної, позашкільної та професійно-технічної освіти (за підсумками 2001/2002 навчального року) / Міністерство освіти і науки України. [Development Indicators for General Secondary, Pre-School, Extracurricular and Vocational Education in Ukraine] – K., pp. 72.
18. Про результати перевірки і аналізу ефективності здійснення Міністерством економіки та з питань європейської інтеграції України координації та контролю за дотриманням Закону України "Про закупівлю товарів, робіт і послуг за державні кошти", / Підготовлено департаментом контролю за дотриманням законодавства з питань бюджету і затверджено постановою Колегії Рахункової палати [On the Results of the Inspection of the Efficiency of the Ministry of Economy and on Issues of Ukraine's Integration to European Compliance with the Law of Ukraine 'On the Procurement of Goods, Works, and Services with Public Funds', prepared by the Department of Control Over Compliance with Budget Legislation and Approved by the Session of the Collegium of the Audit Chamber of] 17.09.2002 № 20-2, Kyiv: Audit Chamber of Ukraine, Issue 14
19. Програма столична освіта – Київська міська державна адміністрація, Головне управління освіти і науки [Kyiv City State Administrations (2001) 'Education in the Capital City Programme', Main Directorate for Education and Science], Kyiv, 2001.
20. Соціологічне дослідження "Якість соціальних послуг, що надаються населенню України". Центр соціального моніторингу на замовлення проекту ПРООН "Індекс людського розвитку: Україна, листопад 2002 [Social Monitoring Centre (2002) Sociological Survey on 'The Quality of Social Services Provided to Ukraine's Population', at the request of the UNDP Project "Human Development Index: Ukraine, November, 2002].

Legislative and regulatory acts

21. Закон України [The Law of Ukraine] of 30.12.1997 № 796/97 “Про державний бюджет України на 1998 рік” [On the State Budget of Ukraine in 1998]
22. Закон України [The Law of Ukraine] of 31.12.1998 № 378-XIV “Про державний бюджет України на 1999 рік” [On the State Budget of Ukraine in 1999]
23. Закон України [The Law of Ukraine] of 17.02.2000 № 1458-III “Про державний бюджет України на 2000 рік” [On the State Budget of Ukraine in 2000]
24. Закон України [The Law of Ukraine] of 7.12.2000 № 2120-III “Про державний бюджет України на 2001 рік” [On the State Budget of Ukraine in 2001]
25. Закон України [The Law of Ukraine] of 20.12.2001 № 2905-III “Про державний бюджет України на 2002 рік” [On the State Budget of Ukraine in 2002]
26. Закон України [The Law of Ukraine] of 26.12.2002 № 380-IV “Про державний бюджет України на 2003 рік” [On the State Budget of Ukraine in 2003]
27. Рішення Конституційного Суду України у справі за конституційним поданням 47 народних депутатів України щодо відповідності Конституції України (конституційності) положень постанов Кабінету Міністрів України "Про встановлення плати за користування підручниками в загальноосвітніх школах", "Про внесення доповнення до Постанови Кабінету Міністрів України від 31 серпня 1996 р. №1031" та пункту 5 Постанови Кабінету Міністрів України "Про визнання такою, що втратила чинність, Постанову Кабінету Міністрів України of 22 липня 1998 р. №1128" (справа про безоплатне користування шкільними підручниками) [Resolution of the Constitutional Court of Ukraine on the Case of the Constitutional Appeal by 47 People's Deputies of Ukraine Concerning Compliance with the Constitution of Ukraine (Constitutionality) of the Cabinet of Ministers of Ukraine Regulation "On Introducing Payment for Textbook Use in General Schools of Education", "On Amending the Regulation of the Cabinet of Ministers of Ukraine of 31 August1996, # 1031", and Item 5 of the Cabinet of Ministers of Ukraine Regulation "On Recognizing as Invalid the Cabinet of Ministers of Ukraine Regulation of 22 July 1998, # 1128" (The case on the free use of school textbooks)]
28. Постанова Кабінету Міністрів України of 31 серпня 1996 року № 1031 “Про встановлення плати за користування підручниками в загальноосвітніх школах” (зі змінами згідно ПКМУ of 9 серпня 2001 року № 984 та рішенням Конституційного Суду of 31 листопада 2002 року № 18-рп/2002) [Cabinet of Ministers of Ukraine Regulation of 31 August 1996, # 1031 "On Introducing Payment for Textbook Use in General Schools of Education" (with amendments under the Cabinet of Ministers of Ukraine Regulation of 9 August 2001, #984, and the Constitutional Court Ruling of November 2002, #18-рп/2002]
29. Постанова Кабінету Міністрів України of 22 липня 1998 року № 1128 “Про поступовий перехід з 1 січня 1999 р. на вільний продаж підручників і навчальних посібників для учнів загальноосвітніх та професійно-технічних навчальних закладів” (зі змінами згідно рішення Конституційного Суду of 31 листопада 2002 року № 18-рп/2002) [Cabinet of Ministers of Ukraine Regulation of 22 July 1998, # 1128 "On the Phasing-in, Beginning 1 January1999, of Free Sale of Textbooks and Training Textbooks to Students of General Educational and Vocational Training

Schools (with changes under the Constitutional Court Ruling of 31 November 2002, # 18-рп/2002)]

30. Постанова Кабінету Міністрів України of 28 квітня 1999 року № 714 “Про визнання такою, що втратила чинність, постанови Кабінету Міністрів України of 22 липня 1998 р. № 1128” [Cabinet of Ministers of Ukraine Regulation of 28 April 1999, # 714 "On Recognizing as Invalid the Cabinet of Ministers of Ukraine Regulation of 22 July 1998, # 1128]
31. Постанова Кабінету Міністрів України of 16 листопада 2002 року № 1748 “Про першочергові заходи щодо повного забезпечення учнів підручниками і навчальними посібниками” [Cabinet of Ministers of Ukraine Regulation of 16 November 2002, #1748, "On Priority Measures by Way of Fully Meeting Student Demand for Textbooks and Training Aids"]
32. Наказ Міністерства освіти України [Order of the Ministry of Education and Science of Ukraine] № 327 of 14.10.1996 “Про введення в дію "Інструкції про порядок оплати за користування підручниками в загальноосвітніх школах" [On the Enactment of "Instructions on the Procedure for the Payment of Textbook Use in General Schools of Education"].
33. Наказ Міністерства освіти України [Order of the Ministry of Education and Science of Ukraine] № 28 of 27.01.1997 “Про затвердження Інструкції про порядок плати за користування підручниками в загальноосвітніх школах” [On the Approval of the Instructions on the Procedure for the Payment of Textbook Use in General Schools of Education"]
34. Наказ МОН, Мінфіну та Мінекономіки [Order of the Ministry of Education and Science of Ukraine, Ministry of Finance of Ukraine, and Ministry of Economy of Ukraine] № 442/311/155 of 24.12.1999 “Про затвердження Порядку забезпечення учнів загальноосвітніх і професійно-технічних навчальних закладів підручниками та навчальними посібниками” (зі змінами, внесеними згідно з Наказом МОН of 8 серпня 2001 року № 584/372/169) ["On Approving Procedures for Meeting the Demand of Students in General Educational and Vocational Training Schools for Textbooks and Training Textbooks" (with amendments introduced by Order of the Ministry of Education and Science of 8 August 2001, # 584/372/169)]
35. Наказ Міністерства освіти України [Order of the Ministry of Education and Science of Ukraine] № 342 of 25.04.2001 “Про типові навчальні плани загальноосвітніх навчальних закладів на 2001/2002 – 2004/2005 навчальні роки” ["On Standard Curricula of General Educational Institutions for 2001/2002 – 2004/2005 Academic Years"]
36. Наказ Міністерства освіти і науки України [Order of the Ministry of Education and Science of Ukraine] № 440 of 7.06.2001 "On Endorsement of Approval Procedures for Authorization of Educational Literature, Training Aids and Educational Equipment by the Ministry of Education and Science of Ukraine"].
37. Наказ Міністерства освіти України [Order of the Ministry of Education and Science of Ukraine] № 1/9-235 of 10.05.2002 "On the Curricula of General Educational Institutions during the Academic Year and its Structure"

38. Наказ Міністерства освіти України [Order of the Ministry of Education and Science of Ukraine] № 1/9-315 of 27.06.2002 "On Curricula of General Educational Institutions with Ethnic Minority Language Teaching"]
39. Наказ Міністерства освіти і науки України [Order of the Ministry of Education and Science of Ukraine] № 434 of 30.06.2002 "On Testing Educational Literature for General Educational Institutionss during the 2002/2003 Academic Year"
40. Наказ Міністерства освіти України [Order of the Ministry of Education and Science of Ukraine] № 1/9-339 of 16.07.2002 "On Streamlining the Published Educational Literature and Curricula Recommended for Use during the Educational and Formation Process in Pre-School, Secondary General Education, Special and Extracurricular Educational Institutions"
41. Рішення колегії Міністерства освіти і науки України [Resolution of the Collegium of the Ministry of Education and Science of Ukraine] № 8/1-19 of 26.07.2001 "On the Results of Educational Literature Testing during the 2000/01 Academic Year"
42. Рішення колегії Міністерства освіти і науки України [Resolution of the Collegium of the Ministry of Education and Science of Ukraine] № 9/1-3 of 16.08.2001 "On Outcomes of the 2000/01 Academic Year and Tasks for the Upcoming Academic Year"
43. Рішення колегії Міністерства освіти і науки України [Resolution of the Collegium of the Ministry of Education and Science of Ukraine] № 7/5-19 of 25.07.2002 "On the Results of Educational Literature Testing during the 2001/2002 Academic Year"
44. Рішення колегії Міністерства освіти і науки України [Resolution of the Collegium of the Ministry of Education and Science of Ukraine] № 8/2-2 of 16.08.2002 року "On Outcomes of the 2001/02 Academic Year and Tasks for the Upcoming Academic Year"
45. Рішення колегії Міністерства освіти і науки України [Resolution of the Collegium of the Ministry of Education and Science of Ukraine] № 10/6-19 of 31.10.2002 "On the Condition of the Educational and Instructional Support of Primary Schools during the Period of Transition to a New Content, Structure and Twelve Year System of Education”

8. Annexes

Annex 1

Educational Expenditures

Total 2001 expenditures for education, training and pre-school formation of Ukrainian households with children aged under 18[68]

Number of children in a household	Number of households, thousand	Total number of children in households, thousand	Aggregate annual household expenses, UAH	Share of expenses on education, %	Annual expenses of households on education, UAH	Annual expenses of a household per child, UAH	Annual expenses of all households for education, UAH million
One	4,670	4,670	8,694	1.6	139	139	638.3
Two	2,452	4,903	8,945	1.2	107	54	258.6
Three	317	951	8,804	1.0	88	29	27.4
Four and more	106	528	9,222	0.4	37	7	3.8
All households with children	7,544	11,051	8,789	1.4	123	84	928.2

Source: (8, pp. 417-430)

[68] Державний комітет статистики України. Статистичний щорічник України за 2001 рік [State Committee for Statistics of Ukraine. The 2001 Statistics Year Book], K., 2002, p. 644.

Distribution of responses[69] to the question "How much, on average, did you spend last year (2001/2002) in educational and formation institutions attended by your children on textbooks and training aids?"

We have taken into account only the responses of parents whose children study at public schools, gymnasia and lyceums

Amount	Percentage of respondents who provided answers to the question
UAH 0	1%
UAH 1-10	27%
UAH 11-20	13%
UAH 21-30	13%
UAH 31-50	22%
UAH 51-100	13%
Over UAH 100	9%

Average spending per pupil: **UAH 37**.

Total spending on all pupils: **UAH 37** * **6.4** million schoolchildren = **UAH 235** million

For reference: All expenses on the education of children in public educational institutions, gymnasia, lyceums: **UAH 887** million

Source: (20)

[69] Соціологічне дослідження "Якість соціальних послуг, що надаються населенню України". Центр соціального моніторингу на замовлення проекту ПРООН "Індекс людського розвитку: Україна, листопад 2002 [Sociological Survey "The Quality of Social Services Provided to Ukraine's Population". Social Monitoring Centre. At the Request of the UNDP Project "Human Development Index: Ukraine, November, 2002].

Annex 2

Calculation of the number of main textbooks required for supporting the basic curriculum of general educational schools

Level 1 of general educational institutions with instruction in the Ukrainian language

Subject	Grade1	Grade2	Grade3	Grade4
Ukrainian Language	1	2	2	2
Foreign Language	–	1	1	1
Mathematics	1	1	1	1
Ukraine and I (Natural History)	1	1	1	1
Music	1		1	1
Fine Art	1		1	
Work Training		1	1	1
Fundamentals of Health Care, including Fundamentals of Safety	2	1	1	1
Plus Native Language for schools with ethnic minority language (language of instruction)	1	1-2	1-2	1-2
Textbooks, total:	7-8	7-9	9-11	8-10

Level II of general educational institutions with instruction in the Ukrainian language

Subject	Grade5	Grade 6	Grade7	Grade 8	Grade9
Ukrainian Language and Literature	2	2	2	2	3
Foreign Literature	1	1	1	1	2
Foreign Language	1	1	1	1	1
Mathematics	1	1	2	2	2
Ukrainian History	1	–	1	1	1
World History	–	1	1	1	1
Natural History	–	–	–	–	1
Home Land/ Natural History	1		–	–	–
Biology	–	1	1	1	1
Geography	–	1	1	1	1
Physics	–	–	1	1	1
Chemistry	–	–	–	1	1
Music	1	1			–
Fine Art	1	1	1	–	–
Physical Culture and Health Care					
Fundamentals of Safety	1	1	1		1
Work Training, Technical Drawing	1	1	1	1-2	1-2
Native Language (language of intruc-ion) and Literature for schools with ethnic minority language training	2	2	2	2	2
Textbooks, Total:	11-13	12-14	14-16	13-16	17-20

Level III of general educational institutions with instruction in the Ukrainian language

Subject	Grade 10	Grade 11
Ukrainian Language	1	1
Ukrainian Literature	2	2
Foreign Literature or Literature	2	2
Foreign Language	1	1
Second Foreign Language or Ethnic Minority Language (only for humanitarian specialization)	1	1
Mathematics	2	2
Information Science	1	1
Ukrainian History	1	1
World History	1	1
Man and Society /Fundamentals of Philosophy	–	1
Geography (is studied in Grades 10 or 11 depending on specialization)	1	1
Fundamentals of Economic (studied in Grades 10 or 11 depending on specialization)	1	1 (Grades 10-11)
Biology, Fundamentals of Ecology	1-2	1-2
Physics	1	1
Astronomy	–	1
Chemistry	1	1
Art Culture /Ethics/ Aesthetics (only for humanitarian specialization)	1-2	1-2
Physical Culture and Health Care, Fundamentals of Safety	1	1
Work Training, Technologies (for general educational and technological specialization)	1-2	1-2
Technical Drawing (for natural science, mathematical and technological specialization)		–
Native Language (language of instruction) and Literature for schools with ethnic minority language training	1-2	1-2
Textbooks, Total:	17-22	17-22

Sources: (38, 39, 36, 41)

Calculation of textbook demand of students in general educational institutions

School Level	Number of textbooks per student, items	Number of students in a relevant level, per million	Number of textbooks for all students, per million items
Level I	8	2.0	16.0
Level II	13	3.4	44.2
Level III	17	1.0	17.0
TOTAL:		**6.4**	**77.2**

Sources: (38, 39, 36, 41)

In addition, **1.8** million schoolchildren study at schools with ethnic minority language training. Each student will need an additional two textbooks. For the whole student body this means **3.6** million textbooks.

Therefore, the total demand of the student body in general educational institutions for textbooks is: **77.2** + **3.6** = **80.8** million textbooks.

Annex 3

Reviewing the Quality of Textbooks on Ukrainian Geography[70]

Panel members disseminated 200 questionnaires among teachers containing questions on this issue in order to survey the quality of textbooks on Ukrainian geography. The majority of teachers had analyzed the textbook *Ukraine's Geography* for Grades 8 and 9 by P.O. Maslyak and P.G. Shyshchenko and concluded that, in general, this textbook agrees with the curriculum and principles for scientific, systemic, consistent and logical delivery of the relevant material.

Teachers believe that its main flaws are: mismatch with student age requirements and complicated text language; in addition, this textbook is overloaded with terms and concepts and uses outdated statistics. Students cannot use it at home for independent work because the text is overloaded. Teachers suggest that it should be used for classes for a deeper study of geography and for classes with economic specialization or have its content and instructional design brought into compliance with student age requirements after a relevant updating of statistics and designing multilevel assignments.

Answering the question whether the content of this textbook conforms to student age requirements and cognitive interests, the respondents were categorized as follows: "fully conforms" – 28.7%; "partly conforms" – 31.3%; "does not conform" – 40%.

[70] Based on the reference data from the Ministry of Education and Science of Ukraine "On the Status of Geography of Ukraine Learning in General Educational Institutions of Odessa Oblast", #1/9-140 of 15.03.2002 ("Information Bulletin of the Ministry of Education and Science of Ukraine", # 9, May, 2002)

Teachers feel that about 20% of students can master all the material of this textbook independently, 30% can partly master it and 50% cannot master the material, with the majority of students being unable to master most of the terms and definitions in the textbook.

Most respondents provided a positive assessment of the textbook for Grade 9, *Ukraine's Geography* by A.I. Syrotenko. Most criticism had to do with the fact that this textbook was at odds with the existing curricula and contained outdated statistics. Respondents felt that the textbook content suited the age and psychological requirements of ninth graders and rested on a sound instructional base.

Respondents had noted that major drawbacks in the textbook supply system had to do with lack of adequate proportions in the textbook delivery to different districts of the city and region (*oblast*) as well as the absence of a regional textbook on the geography of Odessa Region (*Oblast*).

Annex 5

School Textbook Functions[71]

- **Knowledge provision / development**. Provision of knowledge occurs through highlighting concepts, formulae, facts, terminology, conditions, etc. A textbook is expected to facilitate the acquisition of knowledge and pursue the objective of teaching the methods and approaches for different kinds of activity and life.
- **Knowledge consolidation.** This function is supported by the system of exercises, tests and home tasks.
- **Knowledge evaluation.** A textbook may suggest evaluation or self-evaluation areas by way of preparing for examinations but it cannot perform the function of documentary certified testing.
- **Facilitating knowledge integration.** This most important function consists in the vertical integration (continuous link between knowledge and skills proceeding from the simple to the complicated provisions within one academic discipline) and horizontal integration (the link between skills acquired during the study of different disciplines).
- **Reference.** This function has to do with obtaining precise data especially where information cannot be accessed with the textbook being the sole printed information source.
- **Social and cultural formation.** This concerns knowledge and skills related to human behaviour, relations, and life in a society. A school textbook should seek not only to transfer knowledge, but also to contribute to the development of a student's life stance, enable the student to find his or her place in the family, society, cultural and ethnic environment.

[71] Gerard P-M., Rogerier K.(2001) *How To Design and Evaluate School Textbooks,* K, KIC Publishers, pp. 64-48.

Annex 6

Publication of educational literature during 1998–2002 at the expense of state procurement orders

Year	Issue of educational literature, million copies[72]	Average price of a textbook copy (UAH)	Value of all issued literature, UAH million[73]	State funding of literature publication for general educational and vocational training institutions, UAH million	Funding provided for by the state budget, UAH million[74]
1	2	3	4	5	6
1998	2.0	6.55	13.1	13.0	
1999	4.0	5.63	22.5	24.8	33.4
2000	13.5	5.54	74.8	83.6	83.7
2001	13.3	5.30	70.5	65.0	108.1
2002	13.5	5.03[75]	67.9	94.1 (plan), 67.1 (actual issue)	119.1
2003					96.1

[72] Information in columns 2, 3 and 5 is given according to (17, pp. 38-39)

[73] Calculated as sum of columns 2 and 3.

[74] Expenses for publication, storage, and delivery of textbooks and textbooks to students of higher educational institutions and pupils of general educational and vocational training schools envisaged by the Law on the State Budget for the relevant year.

Annex 7

Opinion Survey Conducted in November 2002 within the Framework of the UNDP Project "Education Innovation and Renewal for Improved Well-Being and Poverty Reduction"

Results of Interviewing the Focus Group of 21 Instructional Designers in District (*Rayon*) Libraries

Question	Answer		
What was the percentage of procurement order fulfillment in 2001? (Give an approximate percentage if you do not know the exact number):	From 2% to 70% Average indicator: 32%		
What was the percentage of procurement order fulfillment in 2002? (Give an approximate percentage if you do not know the exact number):	From 2% to 70% Average indicator: 32%		
What is the availability of textbook in your district/rayon (town) as a percentage?	From 45% to 90% Average indicator: 66%		
Question	**Answers (as a percentage of all respondents)**		
	Yes	**Partly**	**Yes**
Does the collection of funds for textbook hire influence the obtaining of new textbooks under the procurement order?	75%	–	25%
Does the structure of the procurement order (for individual textbooks) coincide with the structure for obtaining new textbooks?	75%	25%	–
Did you receive textbooks you did not order in 2001 and 2002?	5%	–	95%
Are there textbooks at school received during 2000-2002 and never used?	14%	–	86%

Olena LOKSHYNA

Statistical Data on the Ukrainian System of Secondary Education

1. Executive Summary

Ukraine's successful entry into the world community largely depends on its ability to assure the competitiveness of its national education system which means raising its standards. One way of dealing with this problem is to establish a reliable system for monitoring the quality of education on the basis of statistical data received on the school education system in Ukraine.

Development of this problem within the framework of the second stage[76] of the Project: "Education Innovation and Renewal for Improved Welfare and Poverty Reduction" has become a logical response to our society's demand for a high standard of education on an international level.

The current process for gathering and processing statistical information is analysed, the problems which hamper the development of an effective statistics model in Ukraine are revealed and possible recommendations for solving the problem based on the best world educational indicator models are proposed:

Recommendations for solving the problem:

Recommendation A. Reorganization of statistical information collection in Ukraine;

Recommendation B. Expansion of the content of collected data, enabling Ukraine to fully participate in OECD international comparisons.

2. Introduction

Today the quality of education is one of the most important aspects of any educational system. In Ukraine, in view of recent legislative backing, the importance of quality education[77] monitoring as a systematic procedure for data collection on important aspects of education at national, regional and local levels has assumed special significance.

[76] The first stage of the Project (2001–2002) realized the program of support for development of the strategy of education reform in Ukraine. The second one (2002–2003) is aimed at the elaboration of recommendations for the Ukrainian Government to implement the most relevant problems defined in the National Doctrine.

[77] Decree of the President of Ukraine of April 17, 2002 No. 347 "On the National Doctirne of the Development of Education".

Today, however, Ukraine does not possess an effective integrated system for education quality monitoring. Its implementation requires substantial financial and human resources investment which is impossible given the protracted economic crisis and low level of educational funding.

The gathering of statistical information in Ukraine is characterized either by its unreliability or unavailability. This makes it impossible to build a system of educational indicators based on European models which could provide full and reliable information giving an objective picture of the national educational system at all its levels as well as making it possible to make comparisons with educational systems of other countries.

This situation is caused by the absence of available statistical information (i.e. on student performance results, financial aspects and the context within which the educational system functions) and the problem of data gathering. The existing procedure for data gathering presupposes a concentration of information at rayon or oblast levels. In fact it results in the existence of fully aggregated information at national level.

The absence of comprehensive information about processes taking place in the national system of education in terms of resources invested in education, the educational process and the results obtained makes it very difficult to develop state educational policy.

Implementation of a developed policy leads to structural transformations and curriculum reform. Statistical data gives information about how and to what extent these changes influence the outcomes of the educational system. This is very important for the processes of cardinal transformation taking place in education in Ukraine.

Another important problem which is caused by the absence of full and reliable information on the school education system is connected with the international image of the state and its intention to enter the world community. The processes of integration taking place in the modern world include labor marker extension, increasing migration of the labor force, as well as active exchange of students and teachers. All this puts new demands on the Ukrainian education to increase its competitiveness.

Development of Ukrainian education so that it conforms with international quality standards is possible only in the event that national parameters correlate with world indicators developed by international organizations like the Council of Europe, European Union, UNESCO and OECD.

The importance of comparing the level of the national educational system with foreign countries is understood by many representatives of the Ukrainian pedagogical community. Results of the poll of participants of December 2002 regional seminars (Cherkasy, Mykolayiv, Ternopil, Luhansk) organized within the framework of the Project: "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" are proof of this. The following answers were received to the question "Do you consider it expedient to introduce in Ukraine educational indicators used by international organizations like OECD?":

Table 1. Attitude of the Representatives of the Ukrainian Education to the Problem of Correspondence of the Secondary Education Statistical Data Model in Ukraine to the International Standards

	Cherkasy	Mykolayiv	Ternopil	Luhansk	Total
No	5%	5%	0%	6%	5%
Partly	47%	23%	25%	44%	37%
Yes	48%	72%	75%	50%	59%

Although the limited number of respondents and orientation only at a small number of target groups (secondary education employees) means that the results are not representative of society as a whole the received data does testify to a general trend in understanding the necessity of such comparison.

3. Analysis of the problem of unavailability of reliable statistical data on the secondary education system in Ukraine

Reports about secondary education in Ukraine are prepared at the Ministry of Education and Science by the Main Computation Center (MCC) which runs its own department of statistics and information[78].

The main source of information concerning the school education system comes from institutions of education. Reports which schools send to educational bodies can be divided into those which are sent on a regular basis and those sent once on a one-off basis.

Regular reports include:

- reports on student numbers (number of children and teenagers of school age, number of students in classes, division by age and gender, children from incomplete or unfavorable families, language of instruction, studying of foreign languages, continuation to get full secondary education of 9th grade graduates, etc.);
- reports on number and composition of pedagogical employees (records of service, qualifications, etc.);
- reports on institutions of education (material and technical base of the institution of education, their type and profile, fullness, etc);
- statistics on child nutrition (only for primary schools);
- statistics on protecting the health of different categories of children (from the Chornobyl zone, orphans, half-orphans, children from families with many children, children with chronic diseases or special needs);
- reports on text-book provision.

[78] Деякі дані щодо середньої освіти збираються також і Державним Комітетом статистики в Україні. (Some data on secondary education are collected also by the State Committee of Statistics in Ukraine).

Information about compliance with fire safety measures, sports competitions, profiles and specialized classes and law violations can be considered as suitable material for one-off reports.

3.1. Statistical Data Aggregation Problem

The process of passing statistical information from the lowest level (school) to the highest one (Ministry of Education and Science), where it is published in relevant Ministry of Education and Science collections, is characterized by its consecutive character and high level of information gathering.

The consecutive character of the process means that initial information about the activity of a separate school is collected by rayons which send the data to oblast departments of education which in their turn direct the information to the Ministry of Education and Science and oblast state administrations.

The following describes the various stages of statistical data gathering and dissemination:

Information is gathered at rayon level on the separate activity of institutions of education i.e. this is the first stage of aggregation.

This information is then sent to an oblast where the second stage of aggregation takes place.

Generalized data at this level is then sent to a center which draws together information about education in the different oblasts (24 oblasts – Vinnytsa, Volin, Dnipropetrovsk, Donetsk, Zhytomyr, Zakarpatje, Zaporizhya, Ivano-Frankivsk, Kirovohrad, Kyiv, Lviv, Luhansk, Mykolaiv, Odesa, Poltava, Rivne, Soumy, Ternopil, Kharkiv, Kherson, Khmelnitsk, Cherkasy, Chernivtsy, Chernigiv, the city of Kyiv, the city of Sevastopol and AR of Crimea) and publishes this to inform the public about the state and dynamics of educational system development in Ukraine:

A Model of Aggregation of Statistical Data on Education in Ukraine:

The Center (MOES)
The received data is a source of preparation of statistical reference books published regularly in Ukraine.
The Oblast (Oblast Departments of Education)
Aggregation of the second order. The data received is aggregated at the level of oblast and directed to the MOES in the form of tables and diagrams.
The Rayon (The Rayon Departments of Education)
Aggregation of the first order. Data received on each school is generalized at rayon level and sent in reference and report (texts and tables) form to the oblast departments of education.
The Educational Institution (School)
Full information about different aspects of the educational process taking place in an institution is sent to rayon departments of education.

The main problem with such am approach to data gathering is the difficulty of receiving reliable information on the activity of an institution of education or even a rayon at central or oblast levels. It results in:

- considerable difficulties in tracing rayon and oblast trends of development;
- the impossibility of developing appropriate educational policy for eliminating existing drawbacks;
- giving support (financial or other) to objects which need this;
- availability at central level of only average values for regions, so more detailed analysis of the distribution of various phenomena (education inputs, etc) is impossible);
- lack of understanding of the level of distribution between schools and rayons;
- difficulties in identifying systematic errors in data collections.

3.2. Statistical Data Unavailability Problem

Another important problem which characterizes the present-day system of secondary education statistics in Ukraine is the insufficient volume of statistical data. It results in only separate aspects of the functioning of the national educational system being reflected while other important elements, which are actively traced abroad, are ignored in Ukraine.

Analysis of existing statistical data in Ukraine on the base of the CIPO model used by world experts testifies that Ukraine lacks a number of statistics on important national educational system processes. The model is based upon the division of existing statistics into 4 groups, i.e. context, resources invested into education, educational process and outcomes of the educational system:

A) Contextual Statistics Group (demographic, social and economic context).

This group is represented not very widely. Although different sources contain data on relative number of the school age population, its educational level, children strolling, information on educational outputs of the adult population (which can be found only in the population census materials) or links between human capital and economic growth is absent.

B) Resources Invested in Education Statistics Group (financial resources, teachers, educational institutions network).

Indicators which inform about financial and human resources invested in education in Ukraine are the following:

1) expenses on educational institutions depending on number of students, correlation ratio of public costs spent on education;
2) pedagogues working in the school education sphere (pedagogues of general educational institutions, division of subject-teachers by age, by length of service, information about teachers who teach science foundations, information about primary school teachers (city, village), information about teachers of music, arts, physical culture, pre-military service preparation and labor, number of retired age teachers working in the general education institutions;

3) general secondary institutions (day-time general education institutions network, lyceums, gymnasiums, collegiums, night-time general education institutions, number of general education institutions in damaged condition, number of education institution which needs major repairs, number of general education institutions which have IT classrooms (city, village);
4) educational literature publication (dynamics of average cost of one textbook, state financing of educational literature for general secondary and vocational institutions).

The problem of this group of indicators is in the fact that they present only general information without details. For example, in the case of financial aspects, i.e. detailed information on costs spent on separate educational institutions, adding to teachers' salaries at rayon levels, etc. Besides, there is some statistical data of financial character which is for office use only and not for the public.

C) Educational Process Statistics Group (school functioning, organization of instruction).

Indicators of this group are the following:

- Average fullness of general secondary education institutions, number of students in different types of institutions, weight of students in different types of educational institutions, admission of students into the 1st grade, number of students per one teacher;
- Division of general educational institutions according to languages of instruction (Ukrainian, Russian, Crimean-Tatar, Polish, Hungarian, Moldavian, Rumanian), weight of students studying in Ukrainian or Russian, languages of instruction in day-time general secondary educational institutions.

At the same time Ukraine lacks information on student attendance, drop-out rates, actual number of teaching hours of students, actual numbers that teachers teach per week, etc.

D) Indicators on Educational System Outcomes (school graduation, appearance in the labor market, student achievement outcomes).

This group contains the following data: graduation of 9th grade students of day-time general secondary educational institutions, admission of students to 1st grades of general secondary educational institutions, number of the 9th grade students who have not received secondary education certificates, graduation of the 11(12)th grade students, number of the 11(12)th grade students who have not received secondary education certificates, number of students who get basic and full general secondary education after graduating from daytime and nighttime general secondary educational institution, job placement of graduates (students of vocational colleges and higher educational institutions of the 3rd and 4th levels of Ministry of Education and Science accreditation).

It should be stressed that this groups lacks a number of very significant indicators, i.e. data on the level of student achievement. It can be explained by the fact that under condition of external standardized assessment absence it is impossible to get objective information on the level of student progress (for example, in basic subjects) in Ukraine. Also, there is no information on student achievement based on the existing assessment system using the state cumulative attestation.

The data on the achievement of a limited part of Ukrainian students, for example, on the participation of Ukrainian students teams in competitions of various types (All-Ukrainian Competition of scientific and research works of student-participants of the Junior Academy of Science of Ukraine as well as in international and all-Ukrainian student competitions) do not give a complete picture of student educational levels on a scale of a rayon, oblast and country.

Absence of a number of statistics makes it impossible to develop an indicator system on an international level which makes it possible to obtain information on the state of the national educational system. Comparison with the system of educational indicators used by OECD testifies to the imperfection of the present-day school education statistical model in Ukraine. In particular, the analysis according to the rubrics of the OECD "Education at Glance" (2001) reflects aspects of Ukrainian education which are not studied properly to get objective information about the situation:

Table 2. Correspondence of the school education statistical data model in Ukraine to the OECD education indicators system

A Group of Indicators	OECD indicators	Educational Statistics in Ukraine
Context of Education	Relative size of the school-age population.	Existing data (in MES and Derjkomstat) and made public.
	Educational attainment of the adult population.	Data not collected regularly. The population census is the only source.
	Links between human capital and economic growth.	Data absent.
Financial and Human Resources Invested in Education	Educational expenditure per student.	Existing educational expenditure per student calculations. It is about 560-700 hryvnias per student per year.
	Expenditure on educational institutions relative to gross domestic product.	Existing data. The approximate amount in Ukraine is 3.7-3.8% of GDP.
	Relative proportions of public and private investment in educational institutions.	Formally all investments on school education in Ukraine are received from state budgets of different levels. Data on private investments (and on private schools) are absent in public documents.
	Total public expenditure in education.	The data (partially) existing and made public.

	Support for students and households through public subsidies.	These data absent in general statistical reference books of the MES.
	Expenditure on institutions by service category and by resource category.	The data considered to be restricted. Absent in general statistical reference books of the MES.
Access to Education, Participation and Progression	Participation in education over lifestyle.	Data partially published in the MES and the Derjkomstat reference books.
	Participation in and graduation from secondary education.	Data (not all) published in the MES and the Derjkomstat reference books.
	Access to and participation in tertiary education.	Data published in the MES and the Derjkomstat reference books.
	Competition of tertiary education.	Data published in the MES and the Derjkomstat reference books.
	Students receiving additional resources to access the curriculum (disabilities, learning or behavior difficulties and social disadvantages).	Data limited and absent in general reference books.
	Participation in continuing education and training in the adult population.	The MES does not collect this type of data.
The Learning Environment and Organization of Schools	Salaries of teachers in public primary and secondary schools.	Data are published in the MES reference books.
	Age and gender distribution of teachers and staff employed in education.	Data published in the MES reference books.
	Teaching time and teacher working time.	Data only on norms of pedagogical loads.
	Total intended instruction time for students in lower secondary education.	Ukraine has norms but does not collect data on actual number of instruction time per week which students receive or actual number of days of the school year.

	Proportion of students to teaching staff.	Data absent.
	Training teachers in information and communication technology (ICT).	In the general statistical reference books this type of data is absent. The information can be found only in the network of the institutes of in-service teachers' training.
	Use and availability of ICT in schools.	Data partially available and published.
Individual, Social and Labor Market Outcomes of Education	Labor force participation by level of educational attainment.	Data limited, are in Ministry of Labor statistics sources.
	Expected years in education, employment and non-employment between the ages 15 and 29.	Data limited. MES does not collect this type of data, partially information is collected on rayon level, the main bulk of information is sent to the Ministry of Labor.
	Education and work among young people	Data limited. The main information is in the Ministry of Labor, administrative bodies and in employment centers.
	Specific situation of the youth population.	Data practically absent. The MES does not collect this type of data.
	Earnings and educational attainment.	Data limited. Only rough data as far as separate professions are concerned.
Learning Outcomes of Education	Trends in mean mathematics and science achievement in 8th grade (1995 and 1999).	Data absent because Ukraine has not participated in international comparative studies.
	Student differences in mathematics and science achievement in 8th grade (1995 and 1999).	Data absent because Ukraine has not participated in international comparative studies.
	Income inequality and literacy inequality.	Data absent.
	Gender differences in mathematics and science achievement in 8th grade (1999).	Data absent because Ukraine has not participated in international comparative studies.

The comparison shows that the Ukrainian school education statistical system today is characterized by:

1. Complete absence of the significant statistical data group characterizing the outcomes produced by the educational system (data on student achievement outcomes);
2. Absence or inaccessibility of a number of data on resources invested in education (part of statistics on financial aspects is for office use only and is not published in the MES statistical reference books; other data reasoning form the present-day approaches to the aggregation provide only general information which makes it impossible to understand the situation of the financial state of a separate educational institution);
3. Insufficiency of data on the context in which the school educational system functions (this group data is collected irregularly, i.e. the educational attainment of the adult population);
4. Sparseness of the data of this group showing the educational outcomes of each individual, society and the labor market (for example, information about the labor force participation by level of educational attainment, education and work among the young people, etc. This data is not collected by MES or other bodies responsible for statistics in Ukraine).

Under conditions of Ukraine's entering into the European educational space, national statistical capacity building in accordance with international rules is a top-priority and un-discussed question. Statistical capacity building is to be based upon:

- Creation of legislative status institutions and their unification into a national network;
- Renewal of material and technical base (computers and other informational technologies equipment);
- Modification of account forms (introduction of electronic carriers of information at all levels, unification or liquidation of separate accounts, introduction of new ones which today are not collected in Ukraine but are widely used abroad);
- Training and qualification upgrading of personnel responsible for collection and processing of information (in case of necessity introduction of qualification upgrading courses on the basis of regional institutes of in-service teacher training or pedagogical universities).

The listed measures will make it possible to improve the existing system of statistics collection in Ukraine and its entering a new level in conformity with the European model.

4. List of Recommendations

Given the present day practice of collecting information on school education in Ukraine and taking into consideration the approaches used today in the world it seems expedient to propose the following recommendations for improving the existing system of statistics collection and for bringing it closer to international examples:

Recommendations for solving the problem:

Recommendation A. Reorganization of statistical data collection in Ukraine.

Recommendation B. Expansion of the content of collected data, enabling Ukraine to fully participate in OECD international comparisons.

5. Description of Recommendations

Recommendation A. Reorganization of statistical data collection in Ukraine

In view of the overloading of educational institutions with information preparation and provision together with the absence or unreliability of statistics at higher levels of education it seems expedient to introduce an entire database system of **data banks** for accumulation, processing and analysis of information as well as for prognostic function purposes.

Regional monitoring centers subordinated to the State Coordinative Center of Education Quality Monitoring could become the structures responsible for data banks creation and functioning

Creation of the mentioned data banks could solve the following problems with:

1) data gathering (data banks are to preserve collected and processed information on all aspects of each educational institution activity in each rayon);
2) data sparseness (data banks should accumulate all information collected today by different state bodies – MOES, Derjkomstat, Ministry of Labor, oblast state administrations, employment centers, etc.);
3) data reliability (application of modern methods to collect information and process it using new computer technologies will make it possible to reduce the percentage of possible errors and to raise the level of reliability);
4) data inaccessibility (data banks could openly inform all stakeholders, i.e. employees, pedagogues, policy makers, parents, students, public by web sites supporting and making the data public through mass media).

Theoretically the necessity for openness of statistics on all aspects and levels of the educational system is supported by representatives of the pedagogical community. Results of a poll of participants of the December 2002 regional seminars (Cherkasy, Mykolayiv, Ternopil, Luhansk) organized within the framework of the Project: "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" prove this.

In practice, however, (as foreign experience testifies) openness and making the results public are not always welcomed by pedagogues and school management. The non-acceptance is explained, first of all, by their unwillingness to make the results of their work public in case of low student educational outcomes. In such a case a parallel measure for balancing out weak schools (including financial and methodological assistance) should be introduced to relieve social stress.

In addition this unwillingness to reveal information about a separate institution is explained by the unwillingness to make public financial aspects of a school.

Besides assistance and data bank development creation of a regional monitoring centers network will promote the systematic informing of state education authorities, governmental circles and the pedagogical community on the results of research about the state of secondary education as well as forecasted trends for its development

Creation of regional monitoring centers will require the correlation of the current normative and legislative base as well as investment of financial resources for the preparation of premises, training and maintenance of permanent staff.

Recommendation B. Expansion of the content of collected data, enabling Ukraine to fully participate in OECD international comparisons

Bringing the Ukrainian statistical system in line with international comparison efforts is an important part of the development of the education monitoring system in Ukraine. As a model the set of the OECD indicators or other widely recognized in the world indicators models can be used.

In order to bring the Ukrainian statistical model closer to international models of educational indicators it seems expedient to add the following statistics (which are either absent or unreliable for the purposes of international comparisons) to the national statistical system:

1. Indicators on Outcomes Produced by the Educational System

Receiving indicators of this group is possible only in the case of Ukraine's participation in international comparative studies (TIMSS, PISA, etc).

Financial difficulties could be the main problems while implementing this step. Participation cost usually includes the national cost and the international overhead and may reach 20-40,000 Euros depending upon the country. However, there is the possibility of receiving financial support from international organizations. The World Bank sometimes contributes financially for some non-member OECD countries.

Another problem which will not permit Ukraine to get such data in the nearest future is the problem of time. Ukraine does not have time to prepare itself for participation in the next comparative studies TIMSS 2004.

The third problem is the unwillingness of experts to accept this type of research. Sample diagnostic testing of student achievements in different regions could solve this problem. It also could be solved by training courses introduction on the base of institutes of in-service teacher training as well as by dissemination of experience obtained during pilot testing (i.e., sample testing organized by the Education and Science Department of the Lviv Regional State Administration jointly with the Lviv Oblast Institute of In-Service Teacher Training[79]).

Given the above it should be realized that the obtaining of this group of data is a long-term prospect which should be worked on today, i.e. it is a matter of necessary

[79] Моніторинг якості навчання – необхідна умова становлення творчої особистості й розвитку освітньої інституції (за результатами контрольних замірів навчальних досягнень учнів у школах області) Част. 3. – Львів: Управління освіти і науки Львівської обласної державної адміністрації, Львівський обласний інститут післядипломної педагогічної освіти, 2001. – 47 с. (Quality Learning Monitoring is a Necessary Condition for Creative Personality Coming-to-be and an Educational Institution Development (based on the results of the control measurement of student achievements in school of oblast). Part 3. – Lviv: Education and Science Department of Lviv Oblast State Administration, Lviv Oblast In-service Teachers' Training Institute, 2001. – 47 p.)

resources, experts' training and application by Ukraine for participation in international comparative studies of different types.

2. Contextual Statistics Group

This group requires adding to make it possible to conduct a comparison of Ukrainian school education contextual parameters. It could be possible in case of purposeful and regular collection of all necessary information as well as its processing and preservation in the entire network, i.e. data banks on the base of educational quality monitoring centers.

3. Group of Statistics Reflecting Individual, Social and Labor Market Outcomes of Education

The problem of this group (sparseness between different state bodies responsible for statistics collection) could be solved by creation of educational quality monitoring centers with adequate data banks.

4. Group of Statistics Informing about Resources Invested into Education

The problem of high aggregation and insufficiency could be solved by creation of an educational quality monitoring centers network.

As far as the financial aspects data inaccessibility for all public is concerned this issue needs further detailed analysis to find out the consensus and correspondence to European approaches to transparency of a system of state governance.

The realization of this policy option will require a detailed review of all statistical forms filled in by schools and other educational institutions, leading to their unification, simplification and necessary extensions.

6. Conclusion

The proposed policy options worked out in the process of problem research in the Project: "Education Innovation and Renewal for Improved Well-being and Poverty Reduction" require broad discussion with Ukrainian governmental and scientific structures for the development of further problem-solving measures.

7. References

1. Державна національна програма "Освіта" ("Україна XXI ст.") // Освіта. – 1993. – Грудень – № 44-45-46.((State National Programme "Education" (Ukraine 21-st century) // Osvita (Education). – No. 44-45-46).
2. Законодавство України про освіту. Збірник законів. – К.: Парламентське видавництво. 2002. – 159 с.((Legislation of Ukraine on Education. – Collection of Laws. – K.: Parliamentske Vydavnytstvo. – 2002. – 159 p)
3. Конституція України: Прийнята на 5-ій сесії Верховної Ради України 28 червня 1996 р. – К.: Преса України, 1997. – 80 с. (Constitution of Ukraine passed at the 5-th Session of the Supreme Rada (Parliament) of Ukraine on 28 June 1996. – K.: Pressa Ukrayiny, 1997. – 80 p.).
4. Освіта України. Інформаційно-аналітичний огляд./ Під загальною редакцією В.Г.Кременя. – К., ЗАТ "НІЧЛАВА", 2001. – 224 с. (Education of Ukraine.

Information and Analytical Survey. Under the General Editorship of V.Kremen. – K.: ZAT NICHLAVA, 2001. – 224 p.).

5. Освіта України. Нормативно-правові документи. – К.: Міленіум, 2001. – 472 с. (Education of Ukraine. Normative and Legal Documents. – K.: Millenium, 2001. – 472 p.).
6. Показники розвитку загальної середньої, дошкільної, позашкільної та професійно-технічної освіти (за підсумками 1999/2000 навчального року) / Міністерство освіти і науки України. – К.: ЗАТ "НІЧЛАВА", 2000. – 56 с. (Indicators of Development of General Secondary, Pre-school, Out-of-school and Vocationa education (based on the results of the 1999/2000 school year). / Ministry of Education and Science of Ukraine. – K.: ZAT NICHLAVA, 2000. – 56 p.).
7. Показники розвитку загальної середньої, дошкільної, позашкільної та професійно-технічної освіти (за підсумками 2001/2002 навчального року) / Міністерство освіти і науки України. – К., 2002. – 72 с. (Indicators of Development of General Secondary, Pre-school, Out-of-school and Vocationa education (based on the results of the 2001/2002 school year). / Ministry of Education and Science of Ukraine. – K.: ZAT NICHLAVA, 2002. – 72 p.).
8. Статистичний збірник: Загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (1996-2000 рр.) / Міністерство освіти і науки України. – К.:ВВП "Компас", 2001. – 136 с. (Collection of Statistics: General Secondary, Out-of-school, Pre-school and Vocational Institutions (1996-2000) / Ministry of Education and Science of Ukraine. – K.: VVP Kompas, 2001. – 136 p.).
9. Статистичний збірник: Загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (2000-2001 р.р.) / Міністерство освіти і науки України. – К.: ВВП "КОМПАС", 2002. – 112 с. (Collection of Statistics: General Secondary, Out-of-school, Pre-school and Vocational Institutions (2000-2001) / Ministry of Education and Science of Ukraine. – K.: VVP Kompas, 2002. – 112 p.).
10. Чернишова Є. Інформаційне забезпечення системи управління якістю освіти в регіоні // Рідна школа, № 16, 2003. – с. 58-60. (Chernyshova E. Information Provision of the Education Quality Governance System in the Region // Ridna Shkola, No. 16, 2003. – P. 58-60).
11. Указ Президента України від 17 квітня 2002 р. № 347 "Про Національну доктрину розвитку освіти". The Decree of the President of Ukraine dated 17 April 2002 No. 347 "On the National Doctrine of Education Development").
12. Україна у цифрах. 2001. Державний комітет статистики України, 2002, TACIS European Commission, 2002. (Ukraine in Figures. 2001. State Committee of Statistics of Ukraine, 2002. TACIS. European Commission, 2002).
13. Education at a Glance. OECD indicators 2001.- OECD, 2001. – 380 p.
14. European Report on the Quality of School Education. Sixteen Quality Indicators. – Luxembourg: Office for Official Publications of the European Communities. – 2001. – 82 p.
15. Key Data on Education in Europe. – European Commission, 2000.
16. UNESCO (United Nations Educational Scientific and Cultural Organization) 1999. Statistical Yearbook. – Paris, 1999.

8. Annexes

Annex 1

OECD Educational Indicators Model

Education at Glance (2001) contains indicators grouped into 6 parts:

1.	**Part *A***	Context indicators characterizing environment in which the educational system functions – relative number of population of school age, links between human capital and economic growth, etc.
2.	**Part *B***	Describes financial and human resources invested in education – educational expenditure per student, expenditure on educational institutions relative to gross domestic product, total public expenditure in education, etc.
3.	**Part *C***	Informs about access to education, participation and progression in the educational process – indicators of participation in and graduation from secondary education; access to and participation in tertiary education, completion of tertiary education.
4.	**Part *D***	Present the learning environment and organization of schools – salaries of teachers in public primary and secondary schools; age and gender distribution of teachers and staff employed in education; teachers working time; total intended instruction time for students in lower secondary education; ration of students to teaching staff, etc.
5.	**Part *E***	Presents outputs produced by the educational system labor force participation by level of educational attainment; education and work among the youth population; earnings and educational attainment.
6.	**Part *F***	Presents learning outcomes in mathematics, science, gender differences in mathematics and science achievement in the 8-th grade (1999).

Annex 2

Part B "Financial and Human Resources Invested in Education"; OECD Education at Glance (2001)

Indicator B1. Educational expenditure per student	1) Indicator B 1.1. : Expenditure per student (1998); 2) Indicator B 1.2. Expenditure per student relative to GDP per capita (1998); 3) Indicator B 1.3. Expenditure per student relative to GDP per capita (1995); 4) Indicator B 1.4. Cumulative expenditure per student over the average duration of tertiary studies (1998);
Indicator B2. Expenditure on educational institutions relative to Gross Domestic Product	1) Indicator B 2.1. : Expenditure on educational institutions as a percentage of GDP. Direct and indirect expenditure on educational institutions from public and private sources for all levels of education, by source of fund and year; 2) Indicator B 2.2. Change of expenditure on educational institutions. Index of change between 1995 and 1998 in public and private expenditure on educational institutions, by level of education (1995=100).
Indicator B 3. Relative proportions of public and private investment in educational institutions	1) Indicator B 3.1. Relative proportions of public and private funds for educational institutions for all levels of education. Distribution of public and private sources of funds for educational institutions after; 2) Indicator B 3.2. Relative proportions of public and private funds for educational institutions Distribution of public and private sources of funds for educational institutions after transfers from public sources, by level of education and year.
Indicator B 4. Total public expenditure on education	1) Indicator B 4.1. Total public expenditure on education. Direct public expenditure on educational institutions plus public subsidies to the private sector (including subsidies for living costs, and other private entities) as a percentage of GDP and as a percentage of total public expenditure, by level of education and year.

Indicator B5. Support for students and households through public subsidies	1) Indicator B 5.1. Public subsidies to the private sector as a percentage of total government expenditure on education and GDP for primary, secondary and post-secondary non-tertiary education (1998). Direct expenditure for institutions and transfers to households and other private entities as a percentage of total government expenditure and GDP; 2) Indicator B 5.2 Public subsidies to the private sector as a percentage of total government expenditure on education and GDP for tertiary education (1998) Direct expenditure for institutions and transfers to households and other private entities as a percentage of total government expenditure and GDP.
Indicator B 6. Expenditure on institutions by service category and by resource category	1) Indicator B 6.1. Educational expenditure by resource category (1998). Distribution of total and current expenditure on educational institutions, by resource category and level of education; 2) Indicator B 6.2. Expenditure on instruction, research and development (R&D) and ancillary services in institutions as a percentage of GDP (1998) Expenditure per student in US dollars converted using PPPs, by type of service and level of education; 3) Indicator B 6.3. Expenditure per student on instruction, ancillary services and research and development (R&D) (1998). Expenditure per student in US dollars converted using PPPs, by type of service and level of education.

Annex 3

European Union (Eurostat, EURYDICE) Educational Indicators Model

Key Data on Education in Europe (2001) measures quality of education 29 countries. Indicators are grouped into 10 parts:

1.	**Section A**	Context (number of population of different age groups, percentage of people who do not have a qualification of upper secondary education by age group, number of school age population, unemployment rates and number of employment population of different age groups, mean salaries, etc).
2.	**Section B**	Structure and Schools (school structures, distribution of students by levels of education, distribution of primary and secondary students according to the type of school they, number of school holidays, monitoring of school systems at the primary and secondary school levels as far as the external assessment if concerned).
3.	**Section C**	Pre-primary education (pre-primary education organization, average duration of attendance by children aged 3-7 at an educational-oriented pre-primary institution in comparison to duration of official provision, approaches to children distribution into groups in pre-primary institutions, alarm ratio of 4 year old children per one adult in schools and other pre-school institutions).
4.	**Section D**	Gives information about primary education (number of students in classes; general number of hours of taught time for 7 year old children; general number of hours of taught time for 7 year old children; recommended number of hours per year per compulsory subjects; transition to next grade during studying in primary school, conditions to be admitted at level of basic school).
5.	**Section E**	Highlights approaches to secondary education (structure of secondary education; age of students at the end of full-time compulsory education; distribution of students in general and vocational upper secondary education; number of hours of taught time at the level of full-time compulsory education; minimum percentage of time for compulsory subjects at the age of 13 in the basic school; minimum percentage of time for compulsory subjects at the age of 15 in the high school; certified assessment at the end of general upper secondary education).
6.	**Section F**	Dedicated to tertiary education (number of youth getting further education, gender distribution, number of students getting further education abroad, payment for education and other money inputs by students getting education in the public sector).
7.	**Section G**	Contains statistics about teachers (duration and level of training of teachers of pre-school institutions; duration and level of training of teachers of primary schools; duration and level of training of teachers of basic schools; duration and level of training of teachers of high

		schools; teachers ration per general number of active population (%); pension age for teachers; number of teachers-women; minimal and maximum salary of primary school teachers relative to GDP; minimal and maximum salary of basic school teachers relative to GDP; minimal and maximum salary of high school teachers relative to GDP).
8.	**Section H**	Gives information about organization of special education in EU countries (development in the 20-th century of educational structures for children with special needs, main model of organization of education for such children; percentage of children with special needs).
9.	**Section I**	Presents statistics highlighting the problem of foreign languages studying (number of foreign languages studied at different level of education in EU countries; percentage of primary school students studying English; percentage of primary school students studying French; percentage of basic school students studying English; percentage of basic school students studying French, etc.)
10.	**Section J**	Dedicated to informational and communicational technologies in education in EU countries.

Annex 4

Model of educational indicators of European Union Developed as a result of the work of the Works Committee of the Council of Education

European Report on the Quality of School Education groups 16 indicators into 4 groups:

Group 1	Indicators on attainment (mathematics, reading, science, foreign languages, civics, information and communication technologies (ICT), learning to read).
Group 2	Indicators on success and transition (drop-out rates, completion of upper secondary education, participation in tertiary education).
Group 3	Indicators on monitoring of education (evaluation and steering of school education, parent participation).
Group 4	Indicators on resources and structures (education and training of teachers, participation in pre-primary education, number of students per computer, educational expenditure per student).

Volodymyr Voytov

Educational Services Financing from Local Budgets

1. Executive Summary

The Budget Code of Ukraine adopted in 2001 distinguishes expenditures by budgets on different levels and sets forth the rules for the calculation of total resources volume channeled for the purposes of implementing budget programmes by local budgets, in particular, for education.

In keeping with the Budget Code, the expenditures on pre-school and secondary school education are covered by the local budget. The total volume of financial resources channeled for these purposes is defined according to the norms of budget provisioning which are adjusted by the ratios that take into account differences in the cost of rendering social services.

The establishment of adjustment ratios should comply with educational policy; stimulate implementation of measures provided for in the strategy of educational development and exclude "negative incentives", i.e. those ratios. which allow local budgets to get a higher volume of resources when implementing measures.

The purpose of the research conducted within the framework of the Project "Educatuin Innovation and Renewal for Improved Well-Being and Poverty Reducation" in the area of educational funding is to analyze the coefficients in the current formula that are applied to define the volumes of intra-budget transfers and to submit proposals for their correction. Obstacles. preventing definition of the volume of financial resources allocated from individual local budgets to cover education expenditures will also be analyzed.

The given research gives grounds to propose the following recommendations for solving the problem of redistribution of educational services funding from local budgets:

Policy Option A: To pass the rights and responsibility from the Ministry of Finance on to the Ministry of Education and Science to form the educational budget and the rules of intra-budget transfers between local budgets for the purpose of the formation of local education budgets.

Policy Option B: To improve the formula for allocation of intra-budget transfers to form local education budgets.

Policy Option C: To establish mechanisms for involvement of central and local education management levels in decision-making on the allocation of additional intra-budget transfers.

2. Introduction

The budget system of Ukraine comprises of the state budget and local budgets. Local budgets include the budget of the Autonomous Republic of Crimea and regional (*oblast*). district (rayon). municipal district and local government budgets.

Local government budgets comprise budgets of territorial village communities, settlements. towns and their amalgamations.

In keeping with the Budget Code, the volume of financial resources allocated from individual local budgets for the purpose of expenditures on education (with the exception of the Autonomous Republic of Crimea and regional budgets) is defined as the total of resources for:

- Pre-school education;
- Secondary education at daytime schools of general education;
- Secondary education at specialized schools of general education. at boarding and part-time schools.

The volume of financial resources allocated for education from the budget of the Autonomous Republic of Crimea and that of the regions is defined as the total of resources for:

- Secondary education at specialized schools of general education. at boarding and part-time schools;
- Actions of the overall region or republican significance – in the Autonomous Republic of Crimea for general educational purposes.

Table 1 shows the present-day situation with distribution of expenditures on education between budgets in Ukraine.

Table 1. Present-day situation with distribution of expenditures on education between budgets in Ukraine

Budget	Budget expenditures are made on
State Budget of Ukraine	▪ General secondary education: specialized schools state-owned (including boarding schools); social rehabilitation schools of general education; ▪ Vocational training (educational and other training institutions. which are state-owned); ▪ State owned higher educational institutions; ▪ Post-diploma education (excluding institutions and measures financed from the budget of the Autonomous Republic of Crimea and from regional budgets); ▪ Extracurricular educational establishment and extracurricular work with children in line with the list. adopted by the Cabinet of Ministers of Ukraine; ▪ Other institutions and actions in the sphere of education. providing for implementation of general state functions in line with the list adopted by the Cabinet of Ministers of Ukraine.

Budget	Budget expenditures are made on
Budgets of villages. settlements. cities of district (*rayon*) significance and of their amalgamations.	▪ pre-school education; ▪ general secondary education (school-kindergartens).
District (*rayon*) budgets and budgets of cities of republican significance of the Autonomous Republic of Crimea and cities/towns of regional (*oblast*) significance	▪ pre-school education (cities of republican significance of the Autonomous Republic of Crimea and in those of regional (*oblast*) significance); ▪ general secondary education: general educational institutions. including: school-kindergartens (for cities/towns of republican significance of the Autonomous Republic of Crimea and in those of regional significance), specialized schools, lyceums, gymnasia, colleges, evening (shift) schools; ▪ educational institutions for citizens. requiring social assistance and rehabilitation: boarding schools of general education, general educational boarding schools for orphans and for children without parental care, children's homes (in cases when not less that 70% of the number of students at boarding schools of general education and general educational boarding schools for orphans and for children without parental care, children's homes are formed on the territory of the respective city or region), foster-type children's homes and foster families, support for children under guardianship and trusteeship; ▪ other state educational programmes.
Budget of the Autonomous Republic of Crimea and regional (*oblast*) budgets	▪ general secondary education for citizens, requiring social assistance and rehabilitation: specialized institutions of general education for children requiring correction of physical and (or) mental development, sanatorium-type boarding schools; boarding schools of general education, general educational boarding schools for orphans and for children without parental care, children's homes (excluding boarding schools of general education, general educational boarding schools for orphans and for children without parental care, children's homes financed from district (rayon) budgets and from budgets of cities/towns of republican significance of the Autonomous Republic of Crimea and of regional (*oblast*) significance, and foster-type children's homes and foster families); ▪ vocational training institutions, which are in the ownership of the Autonomous Republic of Crimea and which fulfill state orders;

Budget	Budget expenditures are made on
	▪ higher education (higher educational I-IV level accredited institutions that are under the ownership of the Autonomous Republic of Crimea and under joint ownership of territorial communities); ▪ post-diploma education (institutes of post-graduate education and centres\measures for upgrading qualifications of public servants of local executive bodies and local self-governing bodies. permanent courses (centres) for upgrading qualifications of social and cultural sector employees and of the agri-business complex. that are owned by the community); ▪ other state educational programmes.

The existing situation with regard to the distribution of expenditures leads to **the problem of inefficient use of the volume of financial resources directed at education.**

The analysis of the main components of local budgets expenditures on education, as well as the negative incentives, created by the current system of adjustment ratios for financial norms of budget provisioning stated below shows the logic behind the elaboration of educational policy options.

3. Problem Analysis

3.1. Expenditures on Pre-school Educational Institutions

The importance of pre-school education which lays the foundation for a student's future educational achievement necessitates the adequate funding of this sphere. For this reason it is extremely important to allocate budget transfers in a way that stimulates the majority of children are financially provided for at pre-school educational institutions.

The component of formula-based allocation defining the volume of pre-school institutions funding. is established as a multiple of the budget provisioning financial norm per child of pre-school age, of number of children aged 3-6 years and of their coverage ratio by the pre-school institutions. For the year 2003 it is established that for the cities/towns of republican significance of the Autonomous Republic of Crimea and of regional (*oblast)* significance, as well as for Kyiv and Sevastopol, the coverage ratio constitutes 0.72; for regions – 0.33 (Annex 1).

The coverage of students by the network of pre-school educational institutions that are financed from individual local budgets varies significantly due to both the different number of children of respective age, and the differences in the ratio of their coverage by the pre-school institutions. Thus, in 2001 the coverage of children aged 3-6 years by pre-school institutions in Ukraine on average was 44%. At the same time in Kyiv and Sevastopol the coverage exceeded 72%, while in Ivano-Frankivsk Region (*Oblast*) it constituted 20.9%. The quoted data is consolidated for individual regions (*oblasts*), the Autonomous Republic of Crimea, Kyiv and Sevastopol, i.e. the variation at regional level is even higher.

In the current scheme of formula-based allocation, the coverage ratio is assumed to be identical for cities/towns of republican significance of the Autonomous Republic of Crimea and of regional (*oblast*) significance, for Kyiv and Sevastopol, as well as for all the regions. The weakness of this approach is the creation of a negative stimulus. The volume of resources, transferred to a local budget to finance pre-school education does not depend on the actual level of coverage by the pre-school institutions which are financed from such a budget.

Should the coverage increase, local budgets will not get additional funding, i.e. resources allocated per child at a pre-school institution will be smaller in amount. Conversely, if the coverage of children by the pre-school institutions decreases, the local budget will, nonetheless, obtain the same volume of funds, despite their decreased expenditure needs.

The approach of defining the level of coverage by pre-school institutions in individual administrative and territorial units, applied in the calculation formula, yields the results, which drastically differ from the actual coverage level. Thus, in 2001 the actual level of coverage for children aged 3-6 years throughout Ukraine equals 43.9%. According to the formula-based calculation the coverage in 2003 will be 51.2%.

Correlation between the calculated and actual coverage tends to vary significantly for different regions (*oblasts*). For those regions where the coverage ratio is low, the calculated level of coverage is significantly higher than the actual level: for Ivano-Frankivsk Region (*Oblast*) the actual coverage is 20.9%. while the calculated one – 43.3%; for Lviv Region (*Oblast*) – 25.1% and 47.7% respectively and so on. Formula-based calculation yields different results for regions with similar actual coverage: in Vinnytsya Region (*Oblast*) actual coverage constitutes 41.9%, and the calculated one – 44.5%; at the same time for Luhansk Region (*Oblast*), where the actual coverage is 42.5%, the calculated one is already 59.1%.

Such variations lead to a significant disproportion in budget provisioning of one child. For the year 2003 the financial norm of budget provisioning per pre-school age child (H(d)) is established in the amount of UAH 1.207.22 per annum. Under the existing scheme, allocation of budget resources results in assigning an annual of UAH 1,408.16 per child aged 3-6 years attending a day-care centre. At the same time. in regions with low coverage level by pre-school educational institutions (PEI) this indicator is 60-70% higher and constitutes UAH 2,500 per annum.

In regions. where the PEI coverage level is higher compared to Ukraine's average. the financial provisioning per child is lower than the average; for 7 regions this level is 14-28% lower compared to the average in Ukraine. In Kyiv and Cherkasy regions financing per child is about UAH 1,000 per annum.

Under the existing mechanism of allocation, the financial provisioning norm per PEI student is higher in the regions with lower levels in coverage of children by PEI. Such a scheme would be feasible if the PEI per capita maintenance cost in these regions were higher.

Indicators of number of children per member of staff and unit of space in pre-school educational institutions in different regions of Ukraine differ significantly in different

regions. Stemming from the presented data. there is no evidence indicating that in regions with low PEI coverage for children there are more staff members or space per child.

It would be appropriate to note the situation with financing of education in Ivano-Frankivsk Region (*Oblast*). Allocation of local budget expenditures is subject to approval by the local councils of peoples' deputies. In 2002 the resource allocation between the local budgets for financing education was based on the formula. practically identical to the one for the allocation in 2003. Only in two regions – Ivano-Frankivsk and Ternopil did local councils adopt expenditures on education lower than stipulated by the norms of financial provisioning (Annex 2). Ivano-Frankivsk Region, where the PEI coverage of children aged 3-6 years ranks lowest in Ukraine – 20.9%, has significantly benefited from the existing mechanism of calculating pre-school education expenditure norms. But, it is in this region that 7.1% of the calculated educational budget was allocated in favour of other budget items.

The existing formula used for calculation of expenditures does not take into account the difference between the cost of maintenance of a PEI student at institutions located in urban and in rural areas, respectively. In 2001, there were 3.5 children per PEI staff member in urban areas, while in the rural areas – 3.3 children. The difference in this indicator means, that in the rural PEI there are 6% more staff members per the same number of children. At the same time the PEI space calculated per child. is significantly higher in rural areas: 28.8 square metres versus 12.9 square metres per child in urban areas.

The existing funding system also fails to take into account the differences in cost of child maintenance at different types of PEIs: for general development, combined, health care, remedial (specialized) and recreational. Development of different types of PEIs diversifies educational services and thus expands the possibilities for covering all the needs of pre-school children.

Given the fact that such an increase in coverage will promote the development of education, such educational services have to be allowed for in defining financial resources channeled into implementing budget programmes by the local budgets.

3.2. Expenditures on General Secondary Educational Daytime Institutions

The component of formula-based allocation defining the financing volume at daytime institutions of general secondary education is established as a multiple of the financial norm of budget provisioning per student and of number of students attending daytime institutions of general education. (The complete formula is shown in Annex 1.)

In calculating student numbers the adjustment ratios are applied. Table 2 shows ratios for the adjustment of the budget provisioning financial norm per student at daytime general educational school. depending on the settlement type of school location.

Table 2. Ratios for the adjustment of the budget provisioning financial norm per student at daytime general educational school. depending on the settlement type of school location.

School Location	Adjustment Ratio
Cities of republican significance of the Autonomous Republic of Crimea. of regional (*oblast*) significance. Kyiv and Sevastopol	0.841
Settlements of regional (*oblast*) subordination. which according to their status fall into the category of mountainous area	0.968
District (*rayon*) urban area	0.926
District (*rayon*) urban area which are categorized a mountainous according to their status	1.064
Rural area	From 1.01 to 1.684 – depending on average student per class ratio and fully manned classes[80]
Rural area categorized as mountainous	From 1.162 to 1.936 – depending on average student per class ratio and fully manned classes

As Table 2 demonstrates. more funds are allocated per student in rural areas compared to the amount per student in urban areas (the average adjustment ratio for the rural area students is 1.28 – Annex 3). For students in large cities fewer funds are allocated compared to the students in small towns.

In rural areas the volume of financing per student depends on the average student per classroom ratio and fully manned classes – the lower the above ratio is the higher is the adjustment ratio. i.e. the higher is the financial provisioning ratio per student. That is, the system of financing creates an incentive to increase the number of classes at schools.

The student per classroom ratio should be lower in order to improve the quality of school work. In regions with low student per classroom ratios in rural areas, the number of students per school is low, and student number per teacher is low as well. A decrease in the number of classes and increase in students per classroom ratio allows an increase in the student-teacher ratio and a more effective use of funds[81].

[80] Adjustment ratios change not continuously, but discretely. This kind of scheme in changing indicators is worse compared to the continuous one, since it becomes important for the budget managers, whose indicators approximate the change ratio point, to make an effort to the "worse category", which provides significant financial benefits (over 10 % more resources).

[81] This aspect is reviewed in more detail in the study by P. Khobzey 'The Problem Of Efficient Teacher Resource Use'.

The dynamics of decrease of birth in Ukraine during the past decade by almost double makes it possible to forecast that in the coming years the number of school-age children shall annually decrease by 4-5% and may shrink by as much as 30% by 2008 (i.e. schools will be attended by approximately 4.5 million students compared to 6.5 million in 2001).

In Ukraine, after measures to increase student per classroom ratio were undertaken in 1996, when the number of classes sharply decreased by 5%, their number tended to remain almost stable and even grew during 1999-2000.

The average student per classroom ratio at rural schools decreased from 17 to 16.6 students during 1997-2001 with the average size of rural schools remaining practically unchanged (about 148 students), just as with the students-teacher ratio – about 9.7. In other words, the measures to increase the student per classroom ratio in 1996 have insufficiently affected the number of teachers and schools: from 1996 to 2001 these indicators changed in proportion to the decrease in number of students.

Based on this analysis it is possible to assert that in the event of increasing the student per classroom ratio and revising the approaches to calculating financial resources channeled into educational funding from the local budgets it could be possible to use educational resources more efficiently and to increase the quality of education.

3.3. Expenditures on Secondary Education in Specialized Educational Institutions

The component of formula-based allocation, which defines the volume for the financing of special general educational schools, boarding and part-time schools, is based on the same approach. which is used for defining the financial provisioning norms for secondary education at daytime schools of general education. Table 3 shows the adjustment ratios of financial provisioning for different special schools of general education, boarding and part-time schools.

Table 3. The adjustment ratios of financial provisioning for different special schools of general education, boarding and part-time schools

Students	Adjustment Ratio
Students of general educational boarding schools	5 (for mountain area settlements – 5.7)
Students of general educational boarding schools who come to classes	1 (for mountain area settlements – 1.1)
Boarders at boarding-schools for orphans	10
Students of specialized schools for children requiring correction of their mental and (or) physical development	2.5
Boarders at specialized boarding schools for children requiring correction of their mental and (or) physical development	6.6 (for mountain area settlements – 7.5)

Students of specialized boarding schools for children requiring correction of their mental and (or) physical development. who come to classes	2.5
Students of boarding schools (lyceums) for intensive military and physical training	6.5
Students (including students) of Olympic reserve schools, specialized schools, boarding schools (lyceums) for physical culture and sport	8.4
Children living in children's home	13 (for mountain area settlements – 14.8)
Children living in foster-type children's homes	6.5
Students of part-time general educational schools	0.43 for municipal budgets 0.29 for district (rayon) budgets

1997-2001 witnessed a growth in the number of general educational boarding schools and specialized schools of general education (Figure 1). This kind of growth could promote accessibility to the above educational institutions, diversification of educational services and an improvement in their quality.

However, when planning to develop the network of such institutions the following should be taken into consideration:

- The decrease in birth rate in 90s is leading to lower number of students on the whole, including those meant to attend boarding schools and specialized schools of general education;
- Paying for the cost of a child staying at boarding school is not an educational function but a social one. In order to separate these functions it is advisable to split the cost of boarding school expenses to the social budget and a boarding school child's education to the educational budget;
- Practical experience of developed countries and their progress in education demonstrates the advantages of inclusive education. i.e. co-education of students without parental care and those with special requirements (full-time or part-time. depending on the student category) jointly with other children at general educational institutions.

The current mechanism. used to calculate the volume of expenditures on education stimulates an increase in number of students studying at boarding schools of general education and at specialized general educational schools. Funds allocated for such students are several times higher compared to allocations for students of general schools[82].

[82] There are many instances. when contradictions between local self-governing bodies of cities and regions (*oblasts*) arise with respect to subordination of such institutions. The reason for this being the

3.4. Calculation of Expenditures on Education from Local Budgets

Allocation of financial resources to finance educational services from the local budgets represents a powerful tool for improving the quality of education. However at present there are obstacles hampering its effective and full application by the Ministry of Education and Science of Ukraine. Its application requires an analysis to be conducted by the ministry and the introduction of adjustment ratios compliant with an analysis of the link between educational changes at a local level and the adjusted ratios.

Under the current system, the functions of the Ministry of Education and Science and of the Ministry of Finance of Ukraine are distributed in such a way, that the former does not have adequate means to perform such an analysis. This results in a situation whereby the functions of educational policy implementation and those of its financing are separated; the Ministry of Education and Science takes steps to develop education, but is deprived of the opportunity to reallocate the funds independently in order to finance education in compliance with the identified priorities. The Ministry of Finance allocates funds for education according to the established norms. but does not analyze the impact of funding on educational development.

In keeping with the Budget Code of Ukraine, within five years from its enforcement an intra-budget transfer from the state budget may be applied to decrease the actual disproportion between local budgets, caused by differences in the network of budget institutions. The size of this intra-budget transfer for the first year is established as 5% of the total volume of equalization subsidy from the state budget to local budgets. Every following year the transfer amount will decrease by 1% of the total volume of the equalization subsidy.

Presently allocation of this transfer does not take into account the position of the Ministry of Education and Science and that of local education departments. Without this consideration, additional finance may be distributed mechanically and encourage non-efficient utilization of funds, Instead, allocation of an additional transfer should take place in compliance with the priorities of educational policy.

4. List of Policy Options

To ensure an increase in efficiency of calculating the volume of financial resources channeled into educational services from local budgets the following options are proposed:

Policy Option A. To pass the rights and responsibility from the Ministry of Finance on to the Ministry of Education and Science to form the educational budget and the rules of intra-budget transfers between local budgets for the purpose of the formation of local education budgets.

Policy Option B. To improve the formula for allocation of intra-budget transfers to form local education budgets:

Pre-school educational expenditures:

Replace “per child” financing of pre-school education with financing “per child covered by pre-school education” with account of different types of pre-school education.

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fact that financing of an institution from the budget of a separate level significantly increases the volume of financial resources channeled into the local budget for educational funding.

Secondary educational expenditures at daytime schools of general education:

Eliminate reliance of financing the students of rural area schools according to class size and replace this with the following:

- **Scenario 1.** Financing on a "per student" basis with a unified ratio applied to all students of rural area schools of Ukraine.
- **Scenario 2.** Financing on a "per student" basis with a ratio applied to all students of rural area schools for each region (*oblast*).
- **Scenario 3.** Financing on a "per student" basis with a ratio applied to all students of rural area schools depending on the objective differences between regions of Ukraine that lead to different costs of education in rural schools.

Secondary educational expenditures at specialized schools of general education. at boarding and part-time schools

Introduce the quote ratios which foster an inclusive approach under which the students from these schools will study jointly with students from general educational schools. Transfer financing of children's accommodation at boarding schools from the educational budget to the social welfare budget.

Policy Option C. To establish mechanisms for involvement of central and local education management levels in decision-making on the allocation of additional intra-budget transfers.

5. Description of Policy Options

Policy Option A.

To pass the rights and responsibility from the Ministry of Finance on to the Ministry of Education and Science to form the educational budget and the rules of intra-budget transfers between local budgets for the purpose of the formation of local education budgets.

It is provided that the Ministry of Education and Science shall form a unit responsible for establishing the norms for allocation of financial resources for local budget educational expenditures in compliance with educational policy priorities. It is planned that this unit shall obtain and analyze changes in education of regions of Ukraine comparing the expected and attained results and. and in case of necessity. shall introduce changes into allocation norms. This unit should also have the function of allocating additional intra-budget transfers.

Policy Option B.

To improve the formula for allocation of intra-budget transfers to form local education budgets:

Pre-school educational expenditures:

We propose to replace "per child" financing of pre-school education with financing "per child. covered by pre-school education" with account of different types of pre-school education. This change shall allow us to stimulate the coverage of children by pre-school educational institutions.

The first step may include the switchover from "per child"- based financing to financing "per child. covered by pre-school education". Currently. we do not have enough data to assess the influence of such changes on each budget obtained through intra-budget transfer from the state budget. Annex 4 contains an assessment of the impact of such

reallocation on education budgets aggregated at regional (*oblast*) level. The resulting calculation shows that a decrease in volume of calculated expenditures on education will be observed only in those regions (*oblasts*) where the coverage level of children aged 3-6 years by the PEIs is lower compared to Ukraine's average.

The calculation of children covered by pre-school educational institutions may be further optimized through application of different quote ratios for children attending different types of PEIs which will stimulate the development of these types of PEIs, diversify educational services and promote their accessibility.

Secondary educational expenditures at daytime schools of general education:

We propose eliminating the principle of financing students of rural area schools according to class size and replacing this with the principle of financing on a "per student" basis. This will allow us to remove the negative incentive of increasing the number of classes and to support optimization of the school network. The scenarios shown below could be a reference point for taking into account the natural divergence of regions in Ukraine:

Scenario 1. Financing on a "per student" basis with a unified quote ratio applied to all students of rural area schools of Ukraine.

This approach takes into account only the differences in tuition cost per student in schools located in rural and in urban areas.

The drawback of this approach is that the introduction of a unified ratio shall entail considerable decrease in the volume of finance channeled into the regions where currently the highest quote ratios are applied (Annex 3).

Annex 5 demonstrates computation of changes in the calculated volume of educational expenses of regions in Ukraine in funds reallocation under scenario 1.

Scenario 2. Financing on a "per student" basis with a quote ratio applied for all students of rural area schools for each region (*oblast*).

This approach takes into account the differences in educational cost per student at schools located in rural areas of different regions (*oblasts*).

In Ukraine the average student per class ratio at rural schools of different regions tends to vary significantly even within one region (Annex 3). In regions (*oblasts*) where the highest variance is observed, such as Kyiv, Odessa, Zaporizhzhya and Kharkiv regions, the average class size between different districts (rayons) may differ almost two-fold; even in regions (*oblasts*) with the lowest variance in Ukraine – Khmelnitskyy and Chernihiv regions the difference reaches 40%.

Efficient development of secondary education in rural areas requires a thorough analysis of the social. economic. demographical. territorial. environmental differentials, definition of the components causing objective differences and implementation of measures to eliminate differences caused by subjective factors.

Figure 11 shows the distribution of student numbers in rural schools of Ukraine according to students per class ratio. In districts (*rayons*) with an average class size in rural schools ranging from 13.5 to 22 students, 89% of the students attend school (for 8% of the students the class size is smaller – 13.5 and for 3% – it is over 22). For this reason measures aimed to increase student per class ratio in these districts (*rayons*) will significantly affect

average indicators of class size and the efficiency of funds utilization in the entire system of education. In particular, such measures may be channeled into districts (*rayons*) with an average class size in a rural area school ranging between 13.5 and 15.5. These districts (*rayons*) combine a low student per class ratio and a large number of students: 25.5% of all students in rural schools study in 156 of these districts in Ukraine.

Differences in class size may be caused by a different spread of small schools in various districts (*rayons*) within one region (*oblast*). In this case it is feasible to include in the norm calculation formula individual quote components for students of large and small schools. Depending on the value of these components certain incentives can be created both to retain small schools and to optimize their network, as well as to decrease the number of small schools by way of their consolidation or through creation of public schools (Annex 5).

Scenario 3. Financing on a "per student" basis with a ratio applied for all students of rural area schools depending on objective differences between the regions of Ukraine that lead to different costs of education in rural schools.

With this scenario objective differences of separate districts (*rayons*) are taken into account. Funds channeled towards their education costs may support an individual model for school network optimization by means of establishing the rules to alter quote ratios over the course of several years. Such indicators as the density of the population, average size of a settlement and other demographic indicators may form the basis for the calculation of individual ratios.

Secondary education expenditures at specialized schools of general education. at boarding and part-time schools

We propose:

- To introduce quote ratios that promote an inclusive approach under which the students from these schools will study jointly with students from general educational schools.
- To transfer financing of children's accommodation at boarding schools from the educational budget to the social welfare budget.

Such a system may envision that children with special needs will be broken into three groups:

- children excluded from general secondary education;
- children excluded from general secondary educational schools but who study at specialized schools;
- children included in general secondary education.

The current quote ratios for the first group of students will remain unchanged. For the second group initially the ratios will be established at the same level, as they are for the first group of children, but they will gradually decrease. As to the third group, for these children the ratios defined will be higher, compared to the second group. Such a system will stipulate that financing of the students excluded from general school education will remain at the current level. At the same time financial incentives and reserves will be in place to stimulate inclusion of those students in general secondary education who can be included.

Policy option C. To establish mechanisms for involvement of central and local education management levels in decision-making on the allocation of additional intra-budget transfers.

The involvement mechanisms, first of all, should anticipate clear rules for allocation of such reserves. The share of reserves to be channeled for educational purposes must be allocated in line with transparent rules. Transparency can be maintained on condition that application bids are held with the participation of both central (Ministry of Education and Science) and local (bidders) levels of educational representatives.

6. Conclusion

The urgent problem of decentralization in Ukrainian education led to this piece of research. The resulting analysis makes it possible to assert that educational funding is carried out inefficiently today. However, on condition that optimizing mechanisms (proposed in the work) are put in place, it will be possible, even in a situation of under-financing in the educational sphere, to improve funding for key branches of education in pre-schools, general secondary schools, as well as specialized schools.

7. References

1. Бюджетний Кодекс України від 21 червня 2001 року. – К.: Атіка. 2001. – 472 с. ("Budget Code of Ukraine of 21 June 2001". – Kyiv: Atika. – 472 p).
2. Дані, використовувані при розрахунку обсягу фінансових ресурсів, що спрямовуються на виконання бюджетних програм місцевими бюджетами, отримані в Міністерстві освіти і науки України та Research Triangle Institute (RTI). (Data used for calculation of the volume of the financial resources directed at fulfillment of the budget programmes by local budgets were received at the Ministry of Education and Science of Ukraine and Research Triangle Institute (RTI)
3. Дані щодо розрахунку виконання місцевих бюджетів у 2002 році отримані з проекту "Група фіскального аналізу": www.fao.kiev.ua. (Data on calculation of local budgets fulfillment were received from the "Fiscal Analysis Group" Project": www.fao.kiev.ua.
4. Дошкільні заклади України у 2001 році. /Державний комітет статистики України. – К. – 2002. – 74 с. (Pre-school Educational Institutions of Ukraine in 2001. /State Statistics Committee of Ukraine. – Kyiv. – 74 p.).
5. Постанова Кабінету Міністрів України від 14 вересня 2002 р. № 1382 "Про внесення змін до постанови Кабінету Міністрів України від 5 вересня 2001 р. № 1195". (Cabinet of Ministers of Ukraine Resolution No. 1382 of 14 September 2002 "On Introduction of Amendments to the Resolution of the Cabinet of Ministers of Ukraine of 5 September 2001 No. 1195").
6. Статистичний збірник: Загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (1996-2000 рр.) /Міністерство освіти і науки України. – К.: ВВП "Компас". – 2001. – 136 с. (Statistical Digest: Educational Institutions of General, Extracurricular, Pre-school Education and of Professional and Vocational Training (1996-2000) /Ministry of Education and Science of Ukraine. – Kyiv: Kompas Publishing House. – 2001. – 136 p.).
7. Статистичний збірник: Загальноосвітні, позашкільні, дошкільні та професійно-технічні навчальні заклади (2000-2001 рр.) /Міністерство освіти і науки

України. – К.: ВВП "Компас". 2002. – 112 с. (Statistical Digest: Educational Institutions of General, Extracurricular, Pre-school Education and of Professional and Vocational Training (2000-2001). /Ministry of Education and Science of Ukraine. – Kyiv: Kompas Publishing House. – 2002. – 112 p.).

8. Annexes

Figures

Figure1. Dynamics of Birthrate in Ukraine

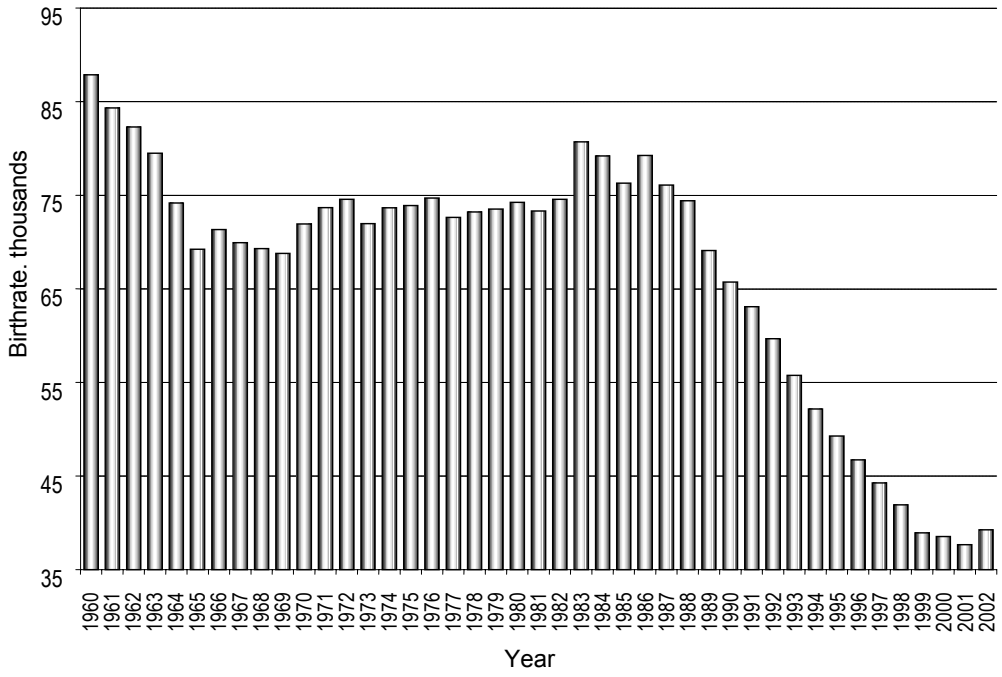
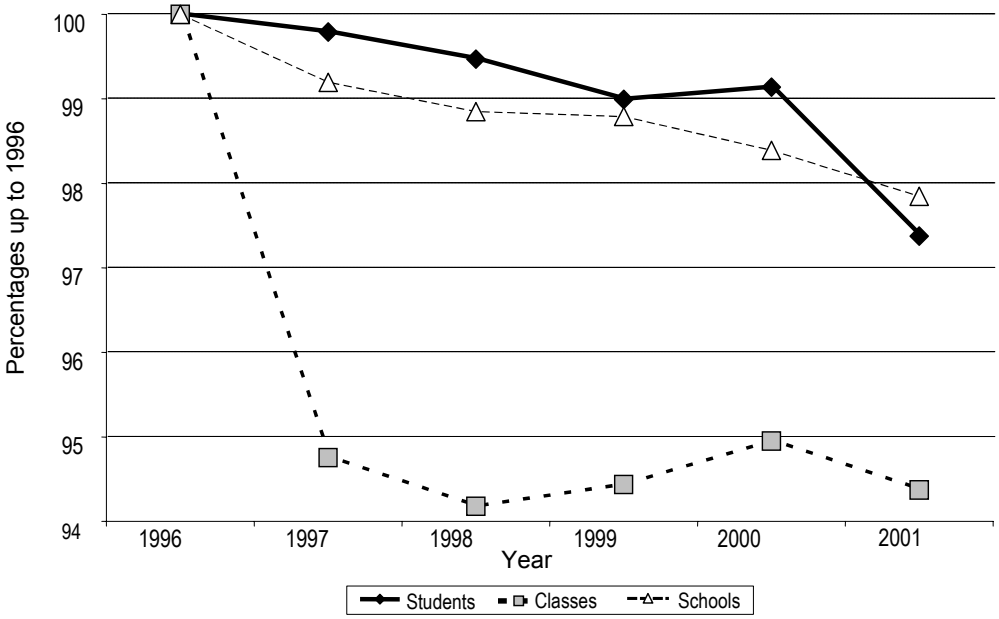
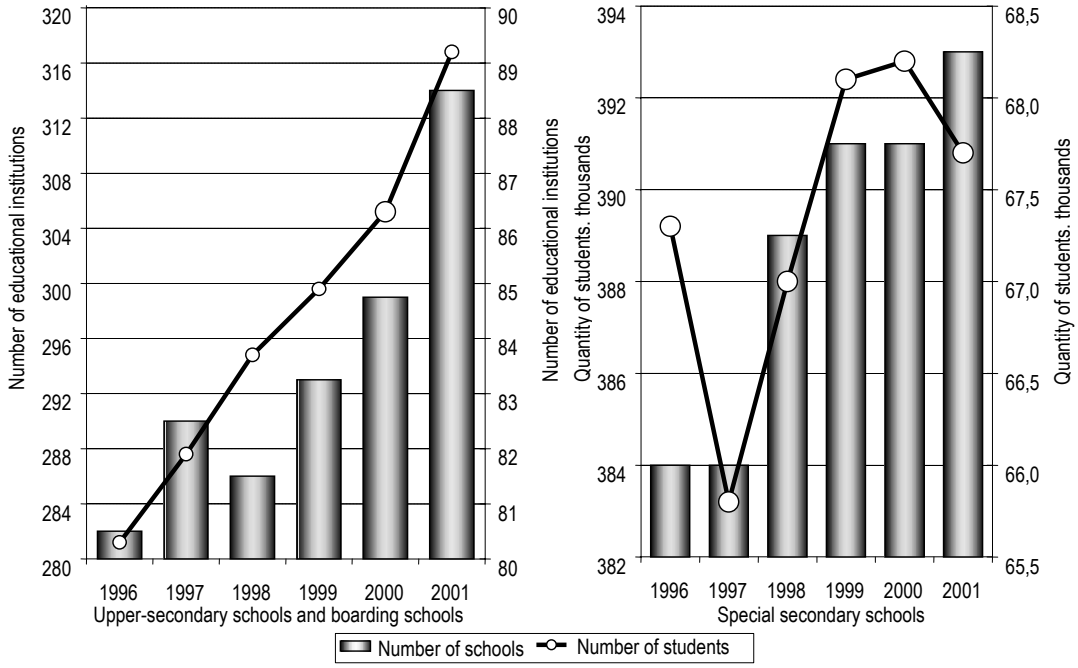


Figure 2. Dynamics of number of students. classes and schools in rural regions



Figures 3. Dynamics of number of boarding schools and special General Secondary Schools and number of students



Annex 1

Calculation of the Expenditures Rate on Education (according to the Cabinet of Ministers Decree issued on 14 September 2002 No 1382)

The calculation index of expenditures rate on education is defined according to the total volume of financial resources allocated for education from the local budgets. financial normative of budget provision per one student and adjusted contingent of students from different types of general secondary schools registered on 5 September that preceded the current budget period.

The calculation index of expenditures rate on education from city/town budgets of republican significance of the Autonomous Republic of Crimea and from that of regional (*oblast*) significance is defined by the following formula:

V(oi) = H(d)*D(i)*K(nm(r)) + H(o)*(U(gm)*K(gm) + U(gmr)*K(gmr) + U(gs)*K(gs) + U(m)*K(m) + U(mr)*K(mr) + U(s)*K(s) + U(bm(r))*K(bm(r)) + U(jm(r))*K(j) + U(f)*K(f) + U(w)*K(w) + U(gt)*K(gt) + U(t)*K(t) + U(gz)*K(gz) + U(z) + U(gc)*K(gc) + U(c)*K(c) + U(p)*K(p) + D(a)*K(a))

The calculation index of expenditures rate on education from the budget of Kyiv and Sevastopol is defined by the formula:

V(okyv(sev)) = H(d)*D(kyiv(sev))*K(nm) + H(o)*((U(kyiv(sev)*K(m) + U(s)*K(s) + U(bkyiv(sev))*K(bm) + U(jkyiv(sev))*K(j) + U(o)*K(ob) + U(f)*K(f) + U(t)*K(t) + U(z) + U(h)*K(h) + U(d)*K(d) + U(c)*K(c) + U(p)*K(p) + D(a)*K(a))

The calculation of expenditures volume allocated on education from the budget of the Autonomous Republic of Crimea is defined by formula:

V(oi) = H(o)*(U(o)*K(ob) + U(f)*K(f) + U(w)*K(w) + U(gt)*K(gt) + U(t)*K(t) + U(gz)*K(gz) + U(z) + U(h)*K(h) + U(gh)*K(gh) + U(d)*K(d) + U(gc)*K(gc) + U(c)*K(c) + U(p)*K(p)) + V(ark)

where

H(d) = financial norm of budget provision per one child of pre-school age;

D(kyiv (sev)) = number of children aged 3-6 years on 1 January of the previous budget period;

K(nm(r)) = coverage ratio of children aged 3-6 years by pre-school institutions in cities of republican significance of the Autonomous Republic of Crimea and those of oblast significance (K(nm)). In 2003 it constitutes 0.72; K(nr) – 0.33;

H(o) = financial norm of budget provision per one student;

U(s) = number of students in daytime general secondary schools in rural area (excluding students from mountainous settlements);

K(s) = adjustment ratio of the number of students in daytime general secondary schools in rural areas (excluding students from mountainous settlements) to the number of students from all general secondary schools in Ukraine. It has five meanings depending on the average student ratio per class and class-complex that was previous to the current budget period.

Adjustment rate of students of daytime general secondary schools in rural areas (excluding students from mountainous settlements) to the number of students of all general secondary schools of Ukraine in 2003

An average student ratio per class and class-complexes in daytime general secondary schools in rural area. students	Adjustment ratio (K(s))
Over 22.2	1.010
17.8-22.2	1.178
14.8-17.8	1.305
11.7-14.8	1.431
Under 11.7	1.684

District (*rayon*) reference to the groups with an average student rate in classes and class-complexes is carried out once every three years on the basis of the net and contingent of general secondary schools analysis;

U(gs) = number of daytime students in general secondary schools in mountainous settlements in rural areas;

K(gs) = adjustment ratio of daytime students in general secondary schools in mountainous settlements rural areas to number of students in all general secondary schools in Ukraine. It has five meanings depending on the average students rate per class and class-complexes in such schools registered on 5 September the year previous to the current budget period.

Extension of the adjustment ratio of daytime students in general secondary schools in mountainous settlements in rural areas to the number of students in all general secondary schools in Ukraine in 2003

Average student ratio per class and class-complexes in daytime general secondary schools in rural area. students	Adjustment ratio (K(gs))
Over 22.2	1.162
17.8-22.2	1.355
14.8-17.8	1.500
11.7-14.8	1.645
Under 11.7	1.936

District (*rayon*) reference to the group with the average ratio of students per class and class-complexes is carried out once every three years on the basis of analysis of the network and contingents in general secondary schools;

U(gm) = number of daytime students in general secondary schools in mountainous settlements in regional (*oblast*) subordination;

K(gm) = adjustment ratio of daytime students in general secondary schools in mountainous settlements of regional (*oblast*) subordination to the number of students in all general secondary schools in Ukraine. K(gm) comprises 0.968 in 2003;

U(gmr) = the number of students in general secondary schools in mountainous settlements in urban regions;

K(gmr) = adjustment student ratio of daytime general secondary schools in mountainous settlements in urban areas to the number of students in all general secondary schools in Ukraine. K(gmr) comprises 1.064 in 2003;

U(o) = the overall number of daytime students in the Autonomous Republic of Crimea, regions (*oblasts*), Kyiv and Sevastopol cities;

K(ob) = adjustment ratio of all regions (*oblast*) (urban. Kyiv and Sevastopol cities), all-republic in Autonomous Republic of Crimea expenditures on qualification upgrading and professional training of personnel (excluding workers and professional with higher educational degrees who work in higher education institutions – III-IV accredited level – of the Autonomous Republic of Crimea), and other measures of all-regional (*oblast*), all-republic in the Autonomous Republic of Crimea significance allocated to general education. K(ob) comprises 0.072 in 2003;

U(f) = number of students in boarding schools of general education (lyceums) for intensive military and physical training;

K(f) = adjustment ratio of student numbers in boarding schools of general education (lyceums) for intensive military and physical training to the number of students in general secondary schools. K(f) comprises 6.5 in 2003;

U(w) = number of students in Olympic reserve schools (including students in higher educational institutions), colleges, boarding schools (lyceums) for physical culture and sport;

K(w) = adjustment ratio of student numbers in Olympic reserve schools (including students in higher educational institutions), boarding schools (lyceums) for physical culture and sport to students in general secondary schools. K(w) comprises 8.4 in 2003;

U(gt) = number of students in general education boarding schools in mountainous settlements;

K(gt) = adjustment ratio of student numbers from general educational boarding schools in mountainous settlements to number of students in general secondary schools. K(gt) comprise 5.7 in 2003;

U(gz) = number of students attending general educational boarding schools in mountainous settlements;

K(gz) = adjustment ratio of student numbers attending general educational boarding schools in mountainous settlements to the number of general secondary school students. K(gz) comprised 1.1 in 2002;

U(t) = number of students in general educational boarding schools (excluding students from boarding schools (lyceums) for intensive military and physical training);

K(t) = adjustment ratio of student numbers from general educational boarding schools to the number of students from general secondary schools. K(t) comprises 5 in 2003;

U(z) = number of students from general educational boarding schools who attend classes;

U(gh) = number of students in specialized boarding schools for children requiring correction of mental and (or) physical development in mountainous settlements;

K(gh) = adjustment ratio of number of students from specialized boarding schools for children requiring correction of mental and (or) physical development in mountainous settlements to the number of students from general secondary schools. K(gh) comprises 7.5 in 2003;

U(h) = number of boarders at specialized boarding schools for children requiring correction of mental and (or) physical development;

K(h) = adjustment ratio of boarder numbers in specialized boarding schools for children requiring correction of mental and (or) physical development to the number of students in general secondary schools. K(h) comprises 6.6 in 2003;

U(d) = number of boarders at specialized boarding schools for children requiring correction of mental and (or) physical development who attend classes;

K(d) = adjustment ratio of students attending classes in specialized boarding schools for children requiring correction of mental and (or) physical development to the number of students in general secondary schools. K(d) comprises 2.5 in 2003;

U(gc) = number of boarders at boarding schools in mountainous settlements;

K(gc) = adjustment ratio of boarder numbers at boarding schools in mountainous settlements to the number of students in general secondary schools. K(gc) comprises 14.8 in 2003;

Um = number of students in daytime general secondary schools in cities of republican significance of the Autonomous Republic of Crimea, regional (*oblast*) significance (excluding students from schools in mountainous settlements);

U(kyiv(sev)) = number of students in daytime general secondary schools of Kyiv and Sevastopol (excluding students from rural areas);

K(m) = adjustment ratio of students in daytime general secondary schools in cities of republican significance of the Autonomous Republic of Crimea and regional (*oblast*) significance (excluding students from mountainous settlements) to the number of students in all general secondary schools in Ukraine. K(m) comprises 0.841 in 2003;

U(mr) = number of students in daytime general secondary schools in urban areas in the regions (excluding students from mountainous settlements);

K(mr) = adjustment ratio of student numbers in daytime general secondary schools in urban areas in the regions (excluding students from mountainous settlements) to the number of students in all general secondary schools in Ukraine. K(mr) comprises 0.926 in 2003;

U(c) = number of children in children's homes (excluding children's homes in mountainous settlements);

K(c) = adjustment ratio of number of children in children's homes to the number of students in general secondary schools. K9c) comprises 13 in 2003;

U(jm(r)) = number of students of specialized schools requiring correction of their mental and (or) physical development;

U(jkyiv(sev)) = number of students of specialized schools requiring correction of their mental and (or) physical development in Kyiv and Sevastopol;

K(j) = adjustment ratio of students from specialized schools requiring correction of their mental and (or) physical development to the number of students in all general secondary schools in Ukraine. K9j) comprises 2.5 in 2003;

U(bm(r)) = number of students in part-time general secondary schools in administrative territorial units;

U(bkyiv(sev)) = number of students in part-time general secondary schools in Kyiv and Sevastopol;

K(bm(r)) = adjustment ratio of students in part-time general secondary schools in administrative region to the number of students in all general secondary schools in Ukraine. K(bm) comprises 0.43 and K(br) – 0.29 in 2003.

U(p) = number of boarders in boarding schools for orphans;

K(p) = adjustment ratio of boarders in boarding schools for orphans to the number of students in general secondary schools in Ukraine. K(p) comprises 10m in 2003;

D(a) = number of children in foster-type children's homes;

K(a) = adjustment ratio of the number of children in foster-type children's homes to the number of students in general secondary schools in Ukraine. K(a) comprises 6.5 in 2003;

V(ark) = expenditures on workers training and professionals with higher educational degrees who work in higher educational institutions (III-IV accredited level) in the Autonomous Republic in Crimea which are determined according to individual calculations.

Annex 2.

Correlation between calculation index of expenditures volume on education and expenditures on education from local budgets affirmed by local councils in 2002

Administrative regions (oblasts)	Included into the State Budget on 2002	Affirmed by local councils for 2002	Correlation %
Kyiv City	263.3	481.1	182.7%
Sevastopol City	41.1	56.3	137.0%
Autonomous Republic of Crimea	273.2	335.7	122.9%
Dnipropetrovsk	413.9	470.3	113.6%

Donetsk	496.9	562.6	113.2%
Zaporizhzhya	230.3	258.3	112.2%
Cherkasy	177.4	197.1	111.1%
Kyiv	223.9	245.4	109.6%
Odessa	304.7	333.1	109.3%
Poltava	194.1	210.9	108.7%
Sumy	154.7	167.6	108.3%
Kherson	156.8	167.1	106.6%
Mykolayiv	168.2	178.4	106.1%
Khmelnitskyy	192.2	203.9	106.1%
Kirovohrad	145.6	152.9	105.0%
Zhytomyr	187.7	196.7	104.8%
Vinnytsya	227.4	236.7	104.1%
Chernihiv	151.6	156.9	103.5%
Luhansk	266.6	275.7	103.4%
Transcarpathia(n)	189.7	195.9	103.3%
Kharkiv	308.3	318.2	103.2%
Chernivtsi	123.3	127.3	103.2%
Lviv	342.6	346.7	101.2%
Volyn	152.2	153.9	101.1%
Rivne	170.7	172.5	101.1%
Ternopil	149.4	146.6	98.1%
Ivano-Frankivsk	207.6	192.8	92.9%
TOTAL IN UKRAINE:	**5, 913.4**	**6, 540.6**	**110.6%**

The article shows the summarized data of educational financing from all regional (*oblast*) local budgets that is from the district (*rayon*) budgets, cities/towns of regional (*oblast*) subordination and regional (*oblast*) budgets. It is clear that these summarized data show only the average tendency for all local budgets in the boarders of one region (*oblast*); for some local budgets the showed correlation can differ sufficiently from such average indexes. Thus in Enorgodar and Netishyn local councils affirmed costs on education exceeded the calculated one by half.

Annex 3

Number of students in classes of rural general secondary schools

The table shows the number of students of rural general secondary schools that are financed from district (*rayon*) budgets (95% of rural school students). The rest of rural school students are financed from city budgets or study in mountainous settlements.

Number of students to whom different adjustment ratios are applied

Adjustment ratio	Number of regions	Number of rural school students		Index of the average student number per class in rural secondary schools		
		Per thousand.	%	minimum	average	maximum
1.010	8	55.3	3%	22.0	23.0	24.4
1.178	116	759.3	37%	16.5	19.5	21.9
1.305	203	761.2	37%	12.7	16.0	22.3
1.431	148	453.7	22%	11.3	13.7	15.8
1.684	13	26.8	1%	8.3	11.0	11.8
1. 283	**488**	**2, 056.3**	**100%**	**8.3**	**16.6**	**24.4**

Average student number in rural secondary schools in different regions in Ukraine

Oblast	Number of students in rural schools Per thousand	Average student number in rural schools in regions of the oblast		
		In region with the least number of students	Average in oblast	In region with the most number of students
Autonomous Republic of Crimea	100.1	17.9	21.2	24.4
Cherkasy	82.6	12.2	15.5	20.9
Chernihiv	56.6	10.2	12.8	14.3
Chernivtsi	74.2	17.5	19.8	21.6
Dnipropetrovsk	83.0	14.2	18.3	21.8
Donetsk	54.6	13.6	16.4	19.7
Ivano-Frankivsk	81.7	14.2	18.6	21.1
Kharkiv	74.8	11.5	15.1	20.6
Kherson	68.1	12.7	17.6	20.6

Khmelnitskyy	87.6	12.2	14.3	15.7
Kirovohrad	59.5	10.7	14.3	16.8
Kyiv	97.9	11.9	16.5	22.6
Luhansk	41.5	13.3	16.3	19.3
Lviv	134.2	13.4	17.5	21.0
Mykolayiv	63.6	13.3	16.0	18.2
Odessa	127.7	13.5	17.7	23.0
Poltava	85.7	11.8	15.5	20.2
Rivne	98.7	14.8	17.6	20.1
Sumy	54.5	8.3	13.4	16.6
Ternopil	87.5	14.0	16.4	18.7
Transcarpathia(n)	96.4	15.3	19.7	22.8
Vinnitsya	118.8	11.6	15.2	19.4
Volyn	79.5	12.1	16.1	19.4
Zaporizhzhya	65.9	13.2	17.2	23.5
Zhytomyr	81.5	11.3	14.6	17.9
Ukraine	**2,056.3**	**8.3**	**16.6**	**24.4**

Annex 4.

Calculation of the effect rate caused by the changes in calculation of the expenditures norm on financing of pre-school education that influence the calculation volume of expenditures allocated on education in regions (*oblasts*) of Ukraine

Administrative region (oblast)	Number of 3-6 year old children				Coverage		Calculation budget of pre-school education in 2003				Calculation budget of education in 2003		
	Total	In cities[83]	In districts (rayons)	In pre-school educational institutions	Actual. %	Calculated. %[84]	According to the existing calculation formula. thousand UAH.[85]	According to the formula suggested. thousand UAH.[86]	Difference thousand UAH.[87]	Difference. %[88]	According to the existing calculation formula. thousand UAH.	According to the formula suggested. thousand UAH	Difference. %
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
Autonomous Republic of Crimea	71,137	34,259	36,878	31,223	43.9%	51.8%	44,469.5	43, 967.3	-502.2	-1.1%	267,182.0	266,679.7	-0.2%
Vinnitsya	76,814	22,600	54,214	32,164	41.9%	44.5%	41,241.9	45,292.4	4,050.5	9.8%	261,902.0	265,952.5	1.5%

[83] In cities of republican significance of the Autonomous Republic of Crimea. regional (oblast) significance. Kyi,v and Sevastopol.

[84] According to the formula applied in calculation of expenditures on education: (column 3 * 0.72 + column 4* 0.33) / column 2.

[85] According to the formula applied in calculation of expenditures on education: (column 3 * 0.72 + column 4* 0.33) * 1207.22 (norm of financial provision per one child of school age).

[86] According to the formula applied in calculation of expenditures on education: (column 3 * 0.72 + column 4* 0.33) * 1207.22 (norm of financial provision per one child of school age).

[87] Index difference between columns 9 and 8.

[88] Column 10 / column 8.

Administrative region (oblast)	Number of 3-6 year old children				Coverage		Calculation budget of pre-school education in 2003				Calculation budget of education in 2003		
	Total	In cities[83]	In districts (rayons)	In pre-school educational institutions	Actual. %	Calculated. %[84]	According to the existing calculation formula. thousand UAH.[85]	According to the formula suggested. thousand UAH.[86]	Difference thousand UAH.[87]	Difference. %[88]	According to the existing calculation formula. thousand UAH.	According to the formula suggested. thousand UAH	Difference. %
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
Volyn	53,378	17,459	35,919	15,339	28.7%	45.8%	29,484.9	21,599.9	-7,885.0	-26.7%	176,958.7	169,073.7	-4.5%
Dnipropetrovsk	126,515	87,743	38,772	65,893	52.1%	60.0%	91,712.3	92,788.5	1,076.2	1.2%	466,771.5	467,847.7	0.2%
Donetsk	148,686	120,185	28,501	88,224	59.3%	64.5%	115,819.1	124,234.3	8,415.2	7.3%	539,352.3	547,767.5	1.6%
Zhytomyr	63,503	20,756	42,747	23,776	37.4%	45.7%	35,070.8	33,480.6	-1,590.2	-4.5%	210,713.8	209,123.7	-0.8%
Transcarpathia(n)	65,383	10,642	54,741	18,263	27.9%	39.3%	31,057.9	25,717.4	-5,340.5	-17.2%	218,693.8	213,353.3	-2.4%
Zaporizhzhya	68,097	38,887	29,210	36,925	54.2%	55.3%	45,437.4	51,996.7	6,559.3	14.4%	243,320.3	249,879.6	2.7%
Ivano-Frankivsk	70,933	18,716	52,217	14,849	20.9%	43.3%	37,070.3	20,909.9	-16,160.4	-43.6%	239,027.8	222,867.4	-6.8%
Kyiv	70,335	24,265	46,070	38,591	54.9%	46.5%	39,444.7	54,342.7	14,898.0	37.8%	257,975.5	272,873.5	5.8%
Kirovohrad	46,494	16,995	29,499	18,964	40.8%	47.3%	26,524.0	26,704.5	180.6	0.7%	165,210.6	165,391.1	0.1%
Luhansk	80,877	54,090	26,787	34,405	42.5%	59.1%	57,686.5	48,448.1	-9,238.4	-16.0%	290,068.1	280,829.7	-3.2%
Lviv	119,694	45,099	74,595	30,043	25.1%	47.7%	68,917.4	42,305.6	-26,611.8	-38.6%	398,565.1	371,953.3	-6.7%
Mykolayiv	52,211	23,927	28,284	23,507	45.0%	50.9%	32,065.2	33,101.8	1,036.6	3.2%	181,598.7	182,635.3	0.6%
Odessa	94,890	41,475	53,415	35,652	37.6%	50.0%	57,329.7	50,204.1	-7,125.7	-12.4%	342,115.8	334,990.2	-2.1%
Poltava	61,103	24,256	36,847	29,913	49.0%	48.5%	35,762.5	42,122.6	6,360.0	17.8%	219,377.1	225,737.1	2.9%

Administrative region (oblast)	Number of 3-6 year old children				Coverage		Calculation budget of pre-school education in 2003				Calculation budget of education in 2003		
	Total	In cities[83]	In districts (rayons)	In pre-school educational institutions	Actual. %	Calculated. %[84]	According to the existing calculation formula. thousand UAH.[85]	According to the formula suggested. thousand UAH.[86]	Difference thousand UAH.[87]	Difference. %[88]	According to the existing calculation formula. thousand UAH.	According to the formula suggested. thousand UAH	Difference. %
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
Rivne	63,604	15,223	48,381	16,915	26.6%	42.3%	32,506.0	23,819.2	-8,686.8	-26.7%	199,519.7	190,832.8	-4.4%
Sumy	47,176	22,695	24,481	26,145	55.4%	51.8%	29,479.3	36,816.6	7,337.3	24.9%	171,064.7	178,401.9	4.3%
Ternopil	53,957	10,772	43,185	16,714	31.0%	40.8%	26,567.2	23,536.1	-3,031.1	-11.4%	175,688.8	172,657.8	-1.7%
Kharkiv	93,652	50,654	42,998	43,409	46.4%	54.1%	61,158.1	61,127.2	-30.9	-0.1%	343,905.4	343,874.5	0.0%
Kherson	50,595	17,327	33,268	22,465	44.4%	46.4%	28,314.0	31,634.5	3,320.5	11.7%	173,046.4	176,366.9	1.9%
Khmelnitskyy	62,678	22,068	40,610	30,806	49.1%	46.7%	35,359.8	43,380.1	8,020.2	22.7%	217,591.1	225,611.3	3.7%
Cherkasy	56,516	20,028	36,488	30,352	53.7%	46.8%	31,944.5	42,740.8	10,796.2	33.8%	201,811.3	212,607.5	5.3%
Chernivtsi	44,876	9,605	35,271	14,638	32.6%	41.3%	22,400.0	20,612.8	-1,787.3	-8.0%	139,905.2	138,117.9	-1.3%
Chernihiv	43,991	15,801	28,190	19,184	43.6%	47.0%	24,964.7	27,014.3	2,049.7	8.2%	165,673.0	167,722.7	1.2%
Kyiv City	82,950	82,950	-	59,856	72.2%	72.0%	72,100.1	84,287.4	12,187.3	16.9%	338,742.8	350,930.0	3.6%
Sevastopol City	11,324	11,324	-	8,199	72.4%	72.0%	9,842.8	11,545.6	1,702.8	17.3%	52,660.9	54,363.7	3.2%
TOTAL IN UKRAINE:	**1,881,369**	**879,801**	**1,001,568**	**826,414**	**43.9%**	**51.2%**	**1,163,730.9**	**1,163,30.9**	**0.0**	**0.0%**	**6, 658,442.2**	**6,658,442.2**	**0.0%**

Annex 5.

Calculation of the effect rate caused by the changes in calculation of the expenditures norm on financing students who attend rural secondary schools. and its influence on calculation volume of expenditures on education in regions of Ukraine

The number of rural school students that are financed from the district (*rayon*) budgets (95% of rural school students) are considered. The remaining rural schools students are financed from city/town budgets (it is suggested that the same adjustment ratio to these students be applied as in the case of rural school students in regional urban areas) or attend schools in mountainous settlements (it is suggested that a calculation of adjustment ratio for these students according to one of the schemes described in option 1-3 be conducted).

Adjusted results

Changes in educational budget	Option 1		Option 2	
	Number of students in regions		Number of students in regions	
	per thousand	% to the total number	per thousand	% of the total number
Decrease on 16-20%	11.3	0.5%	1.6	0.1%
Decrease on 12-16%	14.1	0.7%	6.7	0.3%
Decrease on 8-12%	85.5	4.2%	48.6	2.4%
Decrease on 4-8%	363.6	17.7%	231.7	11.3%
Decrease on 0-4%	767.2	37.3%	622.4	30.3%
Total decrease:	***1,241.7***	***60.4%***	***911.0***	***44.3%***
Without changes and increase 0-4%	51.8	2.5%	776.8	37.8%
Increase on 4-8%	710.3	34.5%	275.8	13.4%
Increase on 8-12%	0.0	0.0%	70.4	3.4%
Increase on 12-16%	17.0	0.8%	14.3	0.7%
Increase on 16-20%	27.5	1.3%	8.0	0.4%
Increase on 20-24%	8.0	0.4%	0.0	0.0%
Total increase:	***814.6***	***39.6%***	***1,145.3***	***55.7%***

Effect of the suggested changes on calculated expenditures on education from the budgets of regions of Ukraine in 2003

Oblast.[89]	District (Rayon)	Students[90]	Average student number per class	K(s)[91]	K2[92]	Valid calculation for district (rayon) educational budget thousand UAH	Calculation for educational budget according to Option 1 thousand UAH	Difference with the valid calculation. thousand UAH	Difference with valid calculation, %	Calculation for district (rayon) educational budget according to Option 2 thousand UAH	Difference with valid calculation, thousand UAH	Difference with valid calculation, %
1	Bakhchisaraysky	6, 909	24.4	1.010	1.127	11, 922.0	13, 469.9	1, 547.9	13.0%	12, 587.6	665.7	5.6%
1	Bilogirsky	6, 055	19.9	1.178	1.127	9, 696.0	10, 217.4	521.5	5.4%	9, 444.2	-251.7	-2.6%
1	Dzhankoysky	11, 804	21.2	1.178	1.127	13, 693.8	14, 710.4	1, 016.6	7.4%	13, 203.1	-490.7	-3.6%
1	Kirovsky	5, 766	23.6	1.010	1.127	8, 058.1	9, 349.9	1, 291.8	16.0%	8, 613.6	555.5	6.9%
1	Krasnogvardiysky	10, 627	23.0	1.010	1.127	13, 133.1	15, 514.0	2, 380.9	18.1%	14, 157.0	1, 023.9	7.8%
1	Krasnoperekopsky	4, 805	20.7	1.178	1.127	5, 225.2	5, 639.0	413.8	7.9%	5, 025.4	-199.8	-3.8%
1	Leninsky	5, 883	19.6	1.178	1.127	9, 837.4	10, 344.0	506.7	5.2%	9, 592.8	-244.6	-2.5%
1	Nyzhnyogirsky	6, 874	22.0	1.010	1.127	8, 333.0	9, 873.1	1, 540.1	18.5%	8, 995.3	662.3	7.9%
1	Pervomaysky	5, 020	19.8	1.178	1.127	6, 715.6	7, 147.9	432.3	6.4%	6, 506.9	-208.7	-3.1%

[89] Oblast codes. Autonomous Republic of Crimea

[90] Number of students in rural areas (excluding s,ettlements which according to their status fall into the category of mountainous area). In mountainous areas the number of such students comprises 0.

[91] The rate of valid ratio of adjustment student number in daytime rural secondary schools (excluding students from settlements which according to their status fall into the category of mountainous area) to the number of students in all general secondary schools in Ukraine.

[92] Adjustment rate applied in district (rayon) for calculation of Option 2. It is calculated as an average ratio K(s) for regional (oblast) districts multiplied by the number of students. An analogous option for calculation is applied for all districts (rayons) as used in Option 1 calculation. K(s) for Option 1 comprises 1.283.

Oblast.[89]	District (Rayon)	Students[90]	Average student number per class	K(s)[91]	K2[92]	Valid calculation for district (rayon) educational budget thousand UAH	Calculation for educational budget according to Option 1 thousand UAH	Difference with the valid calculation. thousand UAH	Difference with valid calculation, %	Calculation for district (rayon) educational budget according to Option 2 thousand UAH	Difference with valid calculation, thousand UAH	Difference with valid calculation, %
1	Razdolnetsky	3, 946	19.1	1.178	1.127	6, 056.9	6, 396.7	339.8	5.6%	5, 892.9	-164.0	-2.7%
1	Saksky	10, 437	20.6	1.178	1.127	11, 700.3	12, 599.2	898.9	7.7%	11, 266.5	-433.9	-3.7%
1	Simferopolsky	14, 586	21.5	1.178	1.127	19, 183.2	20, 439.4	1, 256.2	6.5%	18, 576.8	-606.4	-3.2%
1	Sovetsky	4, 238	20.3	1.178	1.127	6, 139.8	6, 504.8	365.0	5.9%	5, 963.6	-176.2	-2.9%
1	Chornomorsky	3, 163	17.9	1.178	1.127	5, 278.0	5, 550.4	272.4	5.2%	5, 146.5	-131.5	-2.5%
2	Barsky	5, 212	16.1	1.305	1.350	9, 306.2	9, 211.7	-94.5	-1.0%	9, 497.1	190.9	2.1%
2	Bershadsky	7, 322	18.0	1.178	1.350	9, 905.2	10, 535.8	630.6	6.4%	10, 936.8	1, 031.6	10.4%
2	Vinnytsky	6, 867	19.4	1.178	1.350	9, 693.2	10, 284.6	591.4	6.1%	10, 660.7	967.5	10.0%
2	Gaysyysky	4, 795	15.7	1.305	1.350	9, 739.2	9, 652.3	-87.0	-0.9%	9, 914.9	175.6	1.8%
2	Zhmerynsky	4, 391	13.8	1.431	1.350	6, 502.3	5, 968.4	-533.8	-8.2%	6, 208.9	-293.4	-4.5%
2	Illinetsky	3, 772	14.4	1.431	1.350	7, 122.3	6, 663.7	-458.6	-6.4%	6, 870.3	-252.0	-3.5%
2	Kalynivsky	6, 091	16.1	1.305	1.350	10, 110.2	9, 999.7	-110.5	-1.1%	10, 333.3	223.1	2.2%
2	Kozyatynsky	5, 402	14.5	1.431	1.350	8, 521.5	7, 864.7	-656.8	-7.7%	8, 160.6	-360.9	-4.2%
2	Kryzhopilsky	3, 537	16.0	1.305	1.350	5, 837.3	5, 773.1	-64.2	-1.1%	5, 966.8	129.6	2.2%
2	Lypovetsky	3, 268	13.6	1.431	1.350	6, 655.6	6, 258.3	-397.3	-6.0%	6, 437.3	-218.3	-3.3%
2	Litynsky	4, 652	14.7	1.431	1.350	7, 220.8	6, 655.2	-565.6	-7.8%	6, 910.0	-310.8	-4.3%
2	Mogyliv-Podilsky	3, 907	13.2	1.431	1.350	5, 738.8	5, 263.8	-475.0	-8.3%	5, 477.8	-261.0	-4.5%
2	Murovanokurylovetsky	3, 301	12.9	1.431	1.350	5, 205.7	4, 804.4	-401.3	-7.7%	4, 985.2	-220.5	-4.2%

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2	Nemyrivsky	4, 741	11.9	1.431	1.350	8, 496.4	7, 920.0	-576.4	-6.8%	8, 179.6	-316.7	-3.7%
2	Orativsky	3, 274	12.1	1.431	1.350	4, 935.2	4, 537.2	-398.0	-8.1%	4, 716.5	-218.7	-4.4%
2	Pischansky	2, 050	14.9	1.431	1.350	3, 699.9	3, 450.6	-249.2	-6.7%	3, 562.9	-137.0	-3.7%
2	Pogrebyschensky	3, 528	11.6	1.684	1.350	6, 661.3	5, 499.6	-1, 161.7	-17.4%	5, 692.8	-968.5	-14.5%
2	Teplytsky	3, 799	15.0	1.431	1.350	5, 917.4	5, 455.5	-461.9	-7.8%	5, 663.6	-253.8	-4.3%
2	Tyvrivsky	2, 824	14.3	1.431	1.350	8, 271.7	7, 928.3	-343.3	-4.2%	8, 083.0	-188.7	-2.3%
2	Tomashpilsky	3, 107	14.3	1.431	1.350	6, 273.8	5, 896.1	-377.7	-6.0%	6, 066.2	-207.6	-3.3%
2	Trostyanetsky	4, 283	17.5	1.305	1.350	5, 996.7	5, 919.0	-77.7	-1.3%	6, 153.6	156.9	2.6%
2	Tulchynsky	4, 225	15.9	1.305	1.350	8, 362.3	8, 285.6	-76.6	-0.9%	8, 517.0	154.8	1.9%
2	Khmelnitsky	5, 953	13.8	1.431	1.350	7, 797.8	7, 074.0	-723.7	-9.3%	7, 400.1	-397.7	-5.1%
2	Chernivetsky	2, 993	15.0	1.305	1.350	4, 133.9	4, 079.7	-54.3	-1.3%	4, 243.6	109.6	2.7%
2	Chechelnitsky	2, 637	16.4	1.305	1.350	4, 108.1	4, 060.3	-47.8	-1.2%	4, 204.7	96.6	2.4%
2	Shargorodsky	8, 599	18.7	1.178	1.350	10, 655.9	11, 396.5	740.6	6.9%	11, 867.4	1, 211.5	11.4%
2	Yampilsky	4, 308	17.3	1.305	1.350	6, 800.7	6, 722.6	-78.1	-1.1%	6, 958.5	157.8	2.3%
3	Volodymyr-Volynsky	3, 466	15.6	1.305	1.312	4, 526.4	4, 463.6	-62.9	-1.4%	4, 547.2	20.8	0.5%
3	Gorokhivsky	5, 408	14.2	1.431	1.312	9, 240.3	8, 582.9	-657.5	-7.1%	8, 713.4	-527.0	-5.7%
3	Ivanychivsky	4, 011	15.4	1.305	1.312	5, 861.3	5, 788.6	-72.7	-1.2%	5, 885.4	24.1	0.4%
3	Kamin-Kashyrsky	9, 129	19.4	1.178	1.312	11, 946.1	12, 732.3	786.2	6.6%	12, 952.7	1, 006.6	8.4%

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3	Kiverstivsky	6, 000	16.9	1.305	1.312	11, 167.0	11, 058.1	-108.8	-1.0%	11, 203.0	36.0	0.3%
3	Kovelsky	5, 370	14.8	1.431	1.312	8, 178.8	7, 525.9	-652.9	-8.0%	7, 655.6	-523.2	-6.4%
3	Lokachynsky	2, 931	14.3	1.431	1.312	4, 471.3	4, 114.9	-356.3	-8.0%	4, 185.7	-285.6	-6.4%
3	Lutsky	6, 688	17.6	1.305	1.312	9, 001.9	8, 880.6	-121.3	-1.3%	9, 042.0	40.1	0.4%
3	Lyubeshivsky	5, 156	17.0	1.305	1.312	7, 479.9	7, 386.3	-93.5	-1.3%	7, 510.8	30.9	0.4%
3	Lyubomlisky	4, 118	14.4	1.431	1.312	7, 400.6	6, 899.9	-500.7	-6.8%	6, 999.3	-401.3	-5.4%
3	Manevytsky	7, 107	16.9	1.305	1.312	10, 976.8	10, 847.9	-128.9	-1.2%	11, 019.4	42.6	0.4%
3	Ratnivsky	6, 820	18.1	1.178	1.312	9, 720.4	10, 307.8	587.4	6.0%	10, 472.4	752.0	7.7%
3	Rozhyschensky	4, 202	15.0	1.305	1.312	7, 332.2	7, 256.0	-76.2	-1.0%	7, 357.4	25.2	0.3%
3	Starovyzhyvsky	4, 516	15.8	1.305	1.312	6, 291.5	6, 209.6	-81.9	-1.3%	6, 318.6	27.1	0.4%
3	Turiysky	2, 861	12.1	1.431	1.312	5, 123.9	4, 776.1	-347.8	-6.8%	4, 845.1	-278.8	-5.4%
3	Shatsky	1, 735	15.9	1.305	1.312	2, 802.8	2, 771.3	-31.5	-1.1%	2, 813.2	10.4	0.4%
4	Apostolivsky	5, 071	21.0	1.178	1.242	10, 312.7	10, 749.4	436.7	4.2%	10, 577.6	264.9	2.6%
4	Vasylkivsky	2, 610	16.3	1.305	1.242	6, 007.1	5, 959.8	-47.3	-0.8%	5, 871.3	-135.8	-2.3%
4	Verkhnodniprovsky	2, 056	15.6	1.305	1.242	7, 160.2	7, 122.9	-37.3	-0.5%	7, 053.3	-107.0	-1.5%
4	Dnipropetrovsky	4, 947	21.5	1.178	1.242	10, 299.7	10, 725.8	426.1	4.1%	10, 558.2	258.4	2.5%
4	Kryvorizky	5, 129	21.3	1.178	1.242	6, 276.1	6, 717.8	441.7	7.0%	6, 544.0	267.9	4.3%
4	Krynychansky	3, 330	16.9	1.305	1.242	6, 187.6	6, 127.2	-60.4	-1.0%	6, 014.4	-173.2	-2.8%

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4	Magdalynivsky	4, 631	16.3	1.305	1.242	6, 464.0	6, 380.0	-84.0	-1.3%	6, 223.1	-240.9	-3.7%
4	Mezhyvsky	2, 904	17.4	1.305	1.242	4, 618.9	4, 566.2	-52.7	-1.1%	4, 467.8	-151.1	-3.3%
4	Nikopolsky	5, 719	20.7	1.178	1.242	6, 892.1	7, 384.7	492.5	7.1%	7, 190.9	298.8	4.3%
4	Novomoskovsky	6, 861	18.8	1.178	1.242	11, 135.1	11, 726.0	590.9	5.3%	11, 493.5	358.4	3.2%
4	Pavlogradsky	4, 728	21.8	1.178	1.242	5, 135.2	5, 542.4	407.2	7.9%	5, 382.2	247.0	4.8%
4	Petrikivsky	2, 100	21.2	1.178	1.242	3, 381.9	3, 562.7	180.9	5.3%	3, 491.6	109.7	3.2%
4	Petropavlovsky	3, 729	19.4	1.178	1.242	5, 413.4	5, 734.6	321.2	5.9%	5, 608.3	194.8	3.6%
4	Pokrovsky	3, 067	19.8	1.178	1.242	6, 012.4	6, 276.5	264.1	4.4%	6, 172.6	160.2	2.7%
4	Pyatykhatsky	3, 778	14.8	1.305	1.242	7, 395.4	7, 326.9	-68.5	-0.9%	7, 198.9	-196.5	-2.7%
4	Sinyelnikovsky	3, 686	17.8	1.305	1.242	6, 869.7	6, 802.9	-66.9	-1.0%	6, 678.0	-191.7	-2.8%
4	Solonyansky	4, 911	16.7	1.305	1.242	7, 367.0	7, 278.0	-89.1	-1.2%	7, 111.6	-255.5	-3.5%
4	Sophiyvsky	3, 053	14.2	1.431	1.242	5, 013.0	4, 641.8	-371.2	-7.4%	4, 538.4	-474.6	-9.5%
4	Tomakivsky	3, 007	18.1	1.305	1.242	4, 746.2	4, 691.7	-54.5	-1.1%	4, 589.8	-156.4	-3.3%
4	Zarychansky	3, 113	17.6	1.178	1.242	4, 532.8	4, 800.9	268.1	5.9%	4, 695.4	162.6	3.6%
4	Shyrokivsky	2, 732	17.0	1.305	1.242	4, 721.5	4, 671.9	-49.6	-1.0%	4, 579.4	-142.1	-3.0%
4	Yuriyvsky	1, 883	17.3	1.305	1.242	2, 646.2	2, 612.1	-34.2	-1.3%	2, 548.3	-98.0	-3.7%
5	Amrosiyvsky	3, 444	16.4	1.305	1.299	7, 289.7	7, 227.3	-62.5	-0.9%	7, 272.2	-17.6	-0.2%
5	Aretemivsky	4, 290	17.0	1.305	1.299	6, 754.7	6, 676.9	-77.8	-1.2%	6, 732.8	-21.9	-0.3%

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5	Vylykonovosilkivskyp	5, 517	19.7	1.178	1.299	7, 125.8	7, 600.9	475.1	6.7%	7, 672.9	547.1	7.7%
5	Volnovasky	5, 354	15.4	1.305	1.299	14, 204.7	14, 107.6	-97.1	-0.7%	14, 177.4	-27.3	-0.2%
5	Volodarsky	3, 136	15.4	1.305	1.299	4, 870.9	4, 814.0	-56.9	-1.2%	4, 854.9	-16.0	-0.3%
5	Dobropilsky	2, 288	18.0	1.305	1.299	2, 974.5	2, 933.0	-41.5	-1.4%	2, 962.8	-11.7	-0.4%
5	Kostyantynivsky	2, 861	13.8	1.431	1.299	3, 718.8	3, 371.0	-347.8	-9.4%	3, 408.3	-310.5	-8.4%
5	Krasnoarmeysky	2, 802	16.0	1.305	1.299	4, 471.5	4, 420.7	-50.8	-1.1%	4, 457.2	-14.3	-0.3%
5	Marynsky	4, 196	18.2	1.178	1.299	11, 024.6	11, 386.0	361.4	3.3%	11, 440.7	416.1	3.8%
5	Novoazovsky	3, 111	16.5	1.305	1.299	5, 620.4	5, 564.0	-56.4	-1.0%	5, 604.6	-15.9	-0.3%
5	Olexandrivsky	2, 377	14.9	1.431	1.299	3, 875.9	3, 586.9	-289.0	-7.5%	3, 617.9	-258.0	-6.7%
5	Pershotravnevy	1, 496	13.6	1.431	1.299	3, 614.2	3, 432.3	-181.9	-5.0%	3, 451.8	-162.4	-4.5%
5	Slovyansky	2, 359	14.6	1.431	1.299	4, 746.7	4, 459.9	-286.8	-6.0%	4, 490.6	-256.0	-5.4%
5	Starobelsky	3, 257	17.8	1.305	1.299	8, 150.7	8, 091.7	-59.1	-0.7%	8, 134.1	-16.6	-0.2%
5	Telmanivsky	3, 165	15.2	1.305	1.299	5, 090.4	5, 033.0	-57.4	-1.1%	5, 074.2	-16.1	-0.3%
5	Shakhtarsky	2, 988	17.2	1.305	1.299	3, 574.9	3, 520.7	-54.2	-1.5%	3, 559.7	-15.2	-0.4%
5	Yasynuvatsky	1, 981	17.5	1.178	1.299	3, 432.2	3, 602.8	170.6	5.0%	3, 628.7	196.4	5.7%
6	Andrushivsky	3, 150	16.2	1.305	1.365	5, 970.5	5, 913.4	-57.1	-1.0%	6, 126.4	155.9	2.6%
6	Baranivsky	2, 408	15.5	1.305	1.365	7, 106.8	7, 063.2	-43.7	-0.6%	7, 226.0	119.2	1.7%
6	Berdychivsky	4, 107	14.9	1.305	1.365	5, 479.5	5, 405.0	-74.5	-1.4%	5, 682.8	203.2	3.7%

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6	Brusylivsky	1, 932	13.1	1.431	1.365	3, 399.5	3, 164.6	-234.9	-6.9%	3, 295.2	-104.2	-3.1%
6	Volodarsko-Volynsky	2, 401	13.5	1.431	1.365	6, 305.5	6, 013.6	-291.9	-4.6%	6, 175.9	-129.5	-2.1%
6	Dzerzynsky	2, 571	13.0	1.431	1.365	5, 800.6	5, 488.0	-312.6	-5.4%	5, 661.9	-138.7	-2.4%
6	Yemilchynsy	5, 098	13.9	1.431	1.365	8, 303.3	7, 683.5	-619.8	-7.5%	8, 028.2	-275.1	-3.3%
6	Zhytomyrsky	6, 588	17.9	1.178	1.365	8, 886.0	9, 453.4	567.4	6.4%	9, 898.9	1, 012.9	11.4%
6	Korostensky	4, 300	14.0	1.431	1.365	5, 592.5	5, 069.8	-522.8	-9.3%	5, 360.5	-232.0	-4.1%
6	Korostyshyvsky	2, 225	13.3	1.431	1.365	6, 185.6	5, 915.1	-270.5	-4.4%	6, 065.5	-120.1	-1.9%
6	Lugynsky	2, 015	14.7	1.305	1.365	3, 428.8	3, 392.2	-36.5	-1.1%	3, 528.5	99.7	2.9%
6	Lyubarsky	3, 532	14.9	1.305	1.365	5, 310.8	5, 246.7	-64.1	-1.2%	5, 485.6	174.8	3.3%
6	Malynsky	2, 461	11.7	1.431	1.365	7, 764.1	7, 464.9	-299.2	-3.9%	7, 631.3	-132.8	-1.7%
6	Narodytsky	1, 048	11.3	1.431	1.365	1, 783.7	1, 656.3	-127.4	-7.1%	1, 727.2	-56.5	-3.2%
6	Novigrad-Volynsky	6, 909	14.5	1.431	1.365	9, 933.0	9, 093.0	-840.0	-8.5%	9, 560.2	-372.8	-3.8%
6	Ovrutsky	5, 332	15.6	1.305	1.365	9, 707.4	9, 610.7	-96.7	-1.0%	9, 971.3	263.9	2.7%
6	Olevsky	5, 017	17.0	1.305	1.365	8, 885.4	8, 794.4	-91.0	-1.0%	9, 133.6	248.3	2.8%
6	Popilnynsky	4, 027	14.3	1.431	1.365	6, 459.1	5, 969.5	-489.6	-7.6%	6, 241.8	-217.3	-3.4%
6	Radomyshlisky	3, 085	13.5	1.431	1.365	6, 330.4	5, 955.4	-375.1	-5.9%	6, 164.0	-166.5	-2.6%
6	Ruzhynsky	3, 722	15.3	1.305	1.365	5, 325.4	5, 257.9	-67.5	-1.3%	5, 509.6	184.2	3.5%
6	Chervonoarmiysky	3, 033	14.4	1.431	1.365	4, 804.8	4, 436.0	-368.7	-7.7%	4, 641.1	-163.6	-3.4%

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6	Chernyakhivsky	2, 919	13.9	1.431	1.365	5, 722.0	5, 367.2	-354.9	-6.2%	5, 564.6	-157.5	-2.8%
6	Chudnivsky	3, 620	14.6	1.431	1.365	7, 070.5	6, 630.4	-440.1	-6.2%	6, 875.2	-195.3	-2.8%
7	Beregivsky	6, 771	17.4	1.305	1.193	10, 316.2	10, 193.4	-122.8	-1.2%	9, 693.3	-622.9	-6.0%
7	Velykoberesnyansky	589	15.3	1.305	1.193	4, 917.6	4, 907.0	-10.7	-0.2%	4, 863.5	-54.2	-1.1%
7	Vynogradivsky	13, 454	21.0	1.178	1.193	20, 154.1	21, 312.8	1, 158.7	5.7%	20, 319.0	165.0	0.8%
7	Volovetsky	0	16.0	1.305	1.193	5, 376.4	5, 376.4	0.0	0.0%	5, 376.4	0.0	0.0%
7	Irshavsky	13, 311	19.9	1.178	1.193	20, 072.5	21, 218.8	1, 146.4	5.7%	20, 235.7	163.2	0.8%
7	Mizhgirsky	0	17.1	1.305	1.193	10, 760.9	10, 760.9	0.0	0.0%	10, 760.9	0.0	0.0%
7	Mukachivsky	13, 148	18.9	1.178	1.193	16, 773.2	17, 905.6	1, 132.4	6.8%	16, 934.4	161.2	1.0%
7	Perechynsky	3, 497	18.7	1.178	1.193	5, 065.2	5, 366.4	301.2	5.9%	5, 108.1	42.9	0.8%
7	Rakhivsky	2, 807	22.8	1.010	1.193	18, 053.2	18, 682.1	628.9	3.5%	18, 474.7	421.6	2.3%
7	Svalyavsky	4, 972	20.3	1.178	1.193	8, 653.5	9, 081.7	428.2	4.9%	8, 714.5	61.0	0.7%
7	Tyachivsky	17, 564	21.3	1.178	1.193	31, 592.8	33, 105.4	1, 512.7	4.8%	31, 808.1	215.4	0.7%
7	Uzhgorodsky	7, 693	17.2	1.305	1.193	11, 233.7	11, 094.2	-139.5	-1.2%	10, 526.0	-707.7	-6.3%
7	Hustsky	12, 611	21.3	1.178	1.193	18, 130.6	19, 216.7	1, 086.1	6.0%	18, 285.2	154.6	0.9%
8	Berdynsky	3, 896	18.3	1.178	1.258	4, 685.2	5, 020.7	335.5	7.2%	4, 942.3	257.1	5.5%
8	Vasylivsky	3, 948	17.7	1.305	1.258	10, 454.2	10, 382.6	-71.6	-0.7%	10, 303.2	-151.1	-1.4%
8	Velykobelozirsky	1, 264	16.9	1.305	1.258	1, 498.0	1, 475.1	-22.9	-1.5%	1, 449.6	-48.4	-3.2%

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8	Vesyolovsky	2, 464	13.3	1.431	1.258	4, 703.5	4, 404.0	-299.6	-6.4%	4, 354.4	-349.1	-7.4%
8	Vilnyansky	4, 382	17.2	1.305	1.258	7, 741.3	7, 661.8	-79.5	-1.0%	7, 573.6	-167.7	-2.2%
8	Gulyapolsky	2, 255	15.7	1.305	1.258	5, 116.8	5, 075.9	-40.9	-0.8%	5, 030.6	-86.3	-1.7%
8	Zaporizsky	4, 872	19.8	1.178	1.258	7, 143.2	7, 562.8	419.6	5.9%	7, 464.7	321.6	4.5%
8	Kamyanets-Dnoprovsky	4, 229	23.5	1.010	1.258	5, 724.6	6, 672.1	947.5	16.6%	6, 587.0	862.4	15.1%
8	Kuybyshivsky	2, 437	15.5	1.305	1.258	4, 308.4	4, 264.2	-44.2	-1.0%	4, 215.2	-93.2	-2.2%
8	Melitopolsky	7, 551	20.1	1.178	1.258	8, 578.8	9, 229.2	650.3	7.6%	9, 077.2	498.4	5.8%
8	Mykhaylivsky	2, 206	19.9	1.178	1.258	4, 566.7	4, 756.7	190.0	4.2%	4, 712.3	145.6	3.2%
8	Novomykolayvsky	1, 566	13.3	1.431	1.258	3, 124.4	2, 934.0	-190.4	-6.1%	2, 902.5	-221.9	-7.1%
8	Orikhivsky	4, 221	16.4	1.305	1.258	7, 938.4	7, 861.8	-76.6	-1.0%	7, 776.9	-161.5	-2.0%
8	Pologivsky	3, 957	17.0	1.305	1.258	7, 651.4	7, 579.6	-71.8	-0.9%	7, 500.0	-151.4	-2.0%
8	Pryazovsky	3, 204	13.7	1.431	1.258	5, 674.3	5, 284.7	-389.5	-6.9%	5, 220.2	-454.0	-8.0%
8	Prymorsky	3, 172	16.4	1.305	1.258	5, 508.3	5, 450.8	-57.5	-1.0%	5, 386.9	-121.4	-2.2%
8	Rozivsky	1, 026	13.2	1.431	1.258	2, 005.2	1, 880.4	-124.7	-6.2%	1, 859.8	-145.4	-7.3%
8	Tokmatsky	2, 950	15.6	1.305	1.258	4, 404.6	4, 351.1	-53.5	-1.2%	4, 291.7	-112.9	-2.6%
8	Chrnigivsky	2, 257	15.6	1.305	1.258	3, 606.5	3, 565.6	-40.9	-1.1%	3, 520.2	-86.4	-2.4%
8	Yakimivsky	4, 022	17.7	1.178	1.258	5, 955.4	6, 301.8	346.4	5.8%	6, 220.8	265.5	4.5%
9	Bogorodchansky	5, 068	19.3	1.178	1.210	12, 941.7	13, 378.2	436.5	3.4%	13, 075.0	133.3	1.0%

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9	Verkhovynsky	0	15.1	1.305	1.210	8, 109.9	8, 109.9	0.0	0.0%	8, 109.9	0.0	0.0%
9	Galytsky	5, 638	15.2	1.305	1.210	10, 527.7	10, 425.5	-102.3	-1.0%	10, 088.2	-439.5	-4.2%
9	Gorodenkivsky	6, 985	17.8	1.178	1.210	9, 791.5	10, 393.1	601.6	6.1%	9, 975.2	183.7	1.9%
9	Dolynsky	2, 361	18.4	1.178	1.210	15, 189.7	15, 393.0	203.3	1.3%	15, 251.8	62.1	0.4%
9	Kulutsky	8, 785	19.4	1.178	1.210	10, 194.5	10, 951.1	756.6	7.4%	10, 425.5	231.0	2.3%
9	Kolomyysky	11, 264	19.8	1.178	1.210	17, 513.1	18, 483.2	970.1	5.5%	17, 809.3	296.2	1.7%
9	Kosivsky	3, 562	19.0	1.178	1.210	16, 671.0	16, 977.8	306.8	1.8%	16, 764.7	93.7	0.6%
9	Nadvirnyansky	5, 801	21.1	1.178	1.210	22, 027.7	22, 527.3	499.6	2.3%	22, 180.3	152.6	0.7%
9	Rogatynsky	4, 769	14.2	1.431	1.210	8, 127.2	7, 547.4	-579.8	-7.1%	7, 262.1	-865.1	-10.6%
9	Rozhnyativsky	3, 822	20.3	1.178	1.210	13, 739.2	14, 068.4	329.2	2.4%	13, 839.7	100.5	0.7%
9	Snyativsky	7, 955	19.4	1.178	1.210	12, 120.0	12, 805.1	685.1	5.7%	12, 329.2	209.2	1.7%
9	Tysmenytsky	10, 241	20.2	1.178	1.210	13, 130.3	14, 012.3	882.0	6.7%	13, 399.7	269.3	2.1%
9	Tlumatsky	5, 478	16.6	1.305	1.210	8, 626.7	8, 527.3	-99.4	-1.2%	8, 199.6	-427.1	-5.0%
10	Baryshyvsky	3, 714	16.4	1.305	1.276	6, 284.4	6, 217.0	-67.4	-1.1%	6, 196.2	-88.2	-1.4%
10	Bilotserkisky	4, 891	13.9	1.431	1.276	8, 481.1	7, 886.4	-594.6	-7.0%	7, 859.0	-622.1	-7.3%
10	Boguslavsky	2, 783	14.6	1.305	1.276	5, 716.7	5, 666.3	-50.5	-0.9%	5, 650.7	-66.1	-1.2%
10	Boryspilsky	7, 646	21.2	1.178	1.276	8, 431.8	9, 090.3	658.5	7.8%	9, 047.4	615.6	7.3%
10	Borodyansky	2, 904	16.9	1.305	1.276	7, 724.1	7, 671.5	-52.7	-0.7%	7, 655.2	-69.0	-0.9%

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10	Brovarsky	8, 207	21.6	1.178	1.276	10, 893.8	11, 600.6	706.8	6.5%	11, 554.5	660.8	6.1%
10	Vasylkivsky	5, 381	15.8	1.305	1.276	9, 626.8	9, 529.2	-97.6	-1.0%	9, 499.1	-127.8	-1.3%
10	Vyshgorodsky	5, 606	19.1	1.178	1.276	10, 081.2	10, 564.0	482.8	4.8%	10, 532.6	451.4	4.5%
10	Volodarsky	2, 114	12.7	1.431	1.276	3, 836.9	3, 579.9	-257.0	-6.7%	3, 568.0	-268.9	-7.0%
10	Zgurivsky	2, 004	12.2	1.431	1.276	3, 503.3	3, 259.7	-243.6	-7.0%	3, 248.5	-254.9	-7.3%
10	Ivanivsky	2, 898	13.3	1.431	1.276	5, 681.2	5, 328.9	-352.3	-6.2%	5, 312.6	-368.6	-6.5%
10	Kagarlytsky	2, 875	13.8	1.431	1.276	5, 676.1	5, 326.6	-349.5	-6.2%	5, 310.4	-365.7	-6.4%
10	Kyivo-Svyatoshynsky	10, 089	22.6	1.010	1.276	18, 060.1	20, 320.5	2, 260.4	12.5%	20, 263.9	2, 203.8	12.2%
10	Makarivsky	4, 451	14.2	1.431	1.276	8, 039.1	7, 498.0	-541.1	-6.7%	7, 473.0	-566.1	-7.0%
10	Myronivsky	3, 316	15.8	1.305	1.276	5, 824.0	5, 763.8	-60.1	-1.0%	5, 745.2	-78.7	-1.4%
10	Obukhivsky	2, 424	13.5	1.431	1.276	10, 570.0	10, 275.3	-294.7	-2.8%	10, 261.7	-308.3	-2.9%
10	Pereyaslavl-Khmelnitsky	4, 402	16.2	1.305	1.276	5, 382.1	5, 302.3	-79.8	-1.5%	5, 277.6	-104.5	-1.9%
10	Polisky	1, 057	11.9	1.431	1.276	1, 594.4	1, 465.9	-128.5	-8.1%	1, 459.9	-134.4	-8.4%
10	Rokytnyansky	2, 946	18.0	1.178	1.276	5, 185.5	5, 439.3	253.7	4.9%	5, 422.7	237.2	4.6%
10	Skvyrsky	3, 098	14.8	1.305	1.276	6, 301.7	6, 245.5	-56.2	-0.9%	6, 228.1	-73.6	-1.2%
10	Stavyshcensky	3, 040	15.3	1.305	1.276	4, 996.6	4, 941.5	-55.1	-1.1%	4, 924.4	-72.2	-1.4%
10	Tarashcenivsky	3, 032	13.4	1.431	1.276	5, 760.6	5, 392.0	-368.6	-6.4%	5, 375.0	-385.6	-6.7%
10	Teiyvsky	3, 222	16.5	1.305	1.276	6, 210.1	6, 151.7	-58.4	-0.9%	6, 133.6	-76.5	-1.2%

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10	Fastivsky	3, 410	16.4	1.305	1.276	5, 388.0	5, 326.1	-61.8	-1.1%	5, 307.0	-81.0	-1.5%
10	Yagotynsky	2, 379	14.4	1.305	1.276	5, 833.9	5, 790.8	-43.1	-0.7%	5, 777.4	-56.5	-1.0%
11	Bobrynetsky	2, 795	11.6	1.684	1.392	5, 790.4	4, 870.0	-920.3	-15.9%	5 119.4	-671.0	-11.6%
11	Vilshansky	1, 471	10.7	1.684	1.392	3, 026.7	2, 542.4	-484.4	-16.0%	2, 673.6	-353.1	-11.7%
11	Gayvoronsky	2, 462	16.0	1.305	1.392	5, 672.4	5, 627.7	-44.7	-0.8%	5, 847.4	175.0	3.1%
11	Golovanivsky	3, 083	12.6	1.431	1.392	5, 489.7	5, 114.9	-374.8	-6.8%	5, 389.9	-99.8	-1.8%
11	Dobrovelychivsky	3, 415	13.9	1.431	1.392	6, 782.1	6, 366.9	-415.2	-6.1%	6, 671.6	-110.5	-1.6%
11	Dolynsky	2, 236	14.0	1.431	1.392	6, 088.2	5, 816.4	-271.8	-4.5%	6, 015.9	-72.3	-1.2%
11	Znyamyansky	4, 258	16.3	1.305	1.392	5, 080.8	5, 003.6	-77.2	-1.5%	5, 383.5	302.7	6.0%
11	Kirovogradsky	4, 999	13.8	1.431	1.392	6, 596.5	5, 988.7	-607.8	-9.2%	6, 434.7	-161.7	-2.5%
11	Kompaniyvsky	2, 006	12.5	1.431	1.392	3, 313.0	3, 069.1	-243.9	-7.4%	3, 248.1	-64.9	-2.0%
11	Malovyskivsky	3, 651	16.8	1.305	1.392	7, 300.1	7, 233.9	-66.2	-0.9%	7, 559.6	259.5	3.6%
11	Novgorodkivsky	1, 827	13.9	1.431	1.392	3, 265.5	3, 043.4	-222.1	-6.8%	3, 206.4	-59.1	-1.8%
11	Novoarkhangelskyp -	3, 310	14.6	1.431	1.392	5, 340.6	4, 938.2	-402.4	-7.5%	5, 233.5	-107.1	-2.0%
11	Novomyrgoroidsky	2, 330	13.3	1.431	1.392	5, 404.4	5, 121.2	-283.3	-5.2%	5, 329.1	-75.4	-1.4%
11	Novoukraynsky	3, 937	16.1	1.305	1.392	7, 305.8	7, 234.4	-71.4	-1.0%	7, 585.7	279.9	3.8%
11	Olexandrivsky	2, 883	14.1	1.431	1.392	5, 424.7	5, 074.2	-350.5	-6.5%	5, 331.4	-93.3	-1.7%
11	Olexandriysky	3, 913	14.5	1.305	1.392	6, 203.3	6, 132.4	-71.0	-1.1%	6, 481.5	278.2	4.5%

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11	Onufriyvsky	1, 715	15.6	1.305	1.392	3, 261.9	3, 230.8	-31.1	-1.0%	3, 383.8	121.9	3.7%
11	Petrivsky	2, 436	16.1	1.305	1.392	4, 236.5	4, 192.3	-44.2	-1.0%	4, 409.7	173.2	4.1%
11	Svitlovodsky	2, 035	14.9	1.305	1.392	2, 410.4	2, 373.5	-36.9	-1.5%	2, 555.1	144.7	6.0%
11	Ulyanovsky	2, 758	15.7	1.305	1.392	4, 230.9	4, 180.9	-50.0	-1.2%	4, 427.0	196.1	4.6%
11	Ustynivsky	1, 942	13.5	1.431	1.392	3, 099.8	2, 863.7	-236.1	-7.6%	3, 037.0	-62.8	-2.0%
12	Antratsytivsky	2, 145	19.3	1.178	1.270	4, 698.7	4, 883.5	184.7	3.9%	4, 860.0	161.2	3.4%
12	Bilovodsky	2, 532	17.3	1.305	1.270	4, 407.8	4, 361.8	-45.9	-1.0%	4, 334.1	-73.7	-1.7%
12	Bilokurakinsky	2, 144	13.5	1.431	1.270	4, 077.7	3, 817.1	-260.7	-6.4%	3, 793.6	-284.1	-7.0%
12	Krasnodonsky	2, 500	17.4	1.305	1.270	4, 261.7	4, 216.3	-45.3	-1.1%	4, 188.9	-72.7	-1.7%
12	Kreminsky	2, 318	15.2	1.305	1.270	6, 204.3	6, 162.3	-42.0	-0.7%	6, 136.9	-67.4	-1.1%
12	Lutuginsky	2, 193	18.3	1.178	1.270	9, 442.2	9, 631.1	188.9	2.0%	9, 607.1	164.9	1.7%
12	Markivsky	1, 846	15.1	1.305	1.270	3, 172.0	3, 138.6	-33.5	-1.1%	3, 118.3	-53.7	-1.7%
12	Milovsky	1, 622	15.6	1.305	1.270	2, 635.4	2, 606.0	-29.4	-1.1%	2, 588.2	-47.2	-1.8%
12	Novoaydarsky	2, 316	14.2	1.431	1.270	3, 897.3	3, 615.7	-281.6	-7.2%	3, 590.4	-306.9	-7.9%
12	Novopskovsky	3, 443	18.1	1.178	1.270	5, 647.2	5, 943.8	296.5	5.3%	5, 906.1	258.8	4.6%
12	Perevalsky	760	13.8	1.305	1.270	8, 382.3	8, 368.5	-13.8	-0.2%	8, 360.2	-22.1	-0.3%
12	Popasnyansky	1,088	13.8	1.431	1.270	5, 435.9	5, 303.6	-132.3	-2.4%	5, 291.7	-144.2	-2.7%
12	Svativsky	2, 690	14.9	1.305	1.270	6, 009.8	5, 961.0	-48.8	-0.8%	5, 931.6	-78.2	-1.3%

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12	Slovyanoserbsky	2, 694	18.6	1.178	1.270	7, 156.9	7, 388.9	232.0	3.2%	7, 359.4	202.5	2.8%
12	Stanychno-Lugansky	4, 542	18.0	1.178	1.270	7, 230.7	7, 621.9	391.2	5.4%	7, 572.2	341.4	4.7%
12	Starobilsky	4, 379	18.0	1.178	1.270	7, 616.0	7, 993.1	377.1	5.0%	7, 945.2	329.2	4.3%
12	Troitsky	2, 322	13.3	1.431	1.270	4, 084.4	3, 802.1	-282.3	-6.9%	3, 776.6	-307.7	-7.5%
13	Brodivsky	5, 406	16.0	1.305	1.233	10, 435.8	10, 337.7	-98.0	-0.9%	10, 115.3	-320.4	-3.1%
13	Busky	4, 879	17.4	1.305	1.233	8, 938.2	8, 849.8	-88.5	-1.0%	8, 649.1	-289.2	-3.2%
13	Gorodsky	7, 173	18.2	1.178	1.233	11, 729.7	12, 347.4	617.8	5.3%	12, 052.4	322.7	2.8%
13	Droghobytsky	7, 941	18.6	1.178	1.233	11, 409.1	12, 093.0	683.9	6.0%	11, 766.4	357.3	3.1%
13	Zhydachivsky	6, 575	14.9	1.305	1.233	12, 238.7	12, 119.5	-119.3	-1.0%	11, 849.0	-389.7	-3.2%
13	Zhovkivsky	11, 340	19.5	1.178	1.233	19, 522.2	20, 498.8	976.6	5.0%	20, 032.4	510.2	2.6%
13	Zolochyvsky	6, 152	17.4	1.305	1.233	11, 914.6	11, 803.0	-111.6	-0.9%	11, 549.9	-364.6	-3.1%
13	Kamyanka-Buzky	5, 053	18.4	1.178	1.233	9, 912.5	10, 347.7	435.2	4.4%	10, 139.8	227.3	2.3%
13	Mykolayvsky	7, 230	21.0	1.178	1.233	14, 687.7	15, 310.4	622.7	4.2%	15, 013.0	325.3	2.2%
13	Mostytsky	7, 036	17.1	1.305	1.233	11, 167.8	11, 040.1	-127.6	-1.1%	10, 750.7	-417.0	-3.7%
13	Peremyshlyansky	4, 541	13.4	1.431	1.233	8, 085.5	7, 533.4	-552.1	-6.8%	7, 346.6	-738.9	-9.1%
13	Pustomytivsky	12, 634	19.1	1.178	1.233	16, 043.2	17, 131.3	1, 088.1	6.8%	16, 611.6	568.4	3.5%
13	Radekhivsky	6, 156	17.5	1.305	1.233	9, 468.5	9, 356.8	-111.7	-1.2%	9, 103.6	-364.9	-3.9%
13	Sambirsky	9, 829	17.5	1.178	1.233	12, 839.1	13, 685.6	846.5	6.6%	13, 281.3	442.2	3.4%

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13	Skolivsky	158	14.6	1.305	1.233	11, 454.7	11, 451.8	-2.9	0.0%	11, 445.3	-9.4	-0.1%
13	Sokalsky	9, 073	18.4	1.178	1.233	15, 231.5	16, 012.9	781.4	5.1%	15, 639.7	408.2	2.7%
13	Starosambirsky	4, 051	15.8	1.305	1.233	16, 856.7	16, 783.2	-73.5	-0.4%	16, 616.6	-240.1	-1.4%
13	Stryysky	8, 431	17.1	1.305	1.233	11, 337.9	11, 185.0	-152.9	-1.3%	10, 838.2	-499.7	-4.4%
13	Turkivsky	0	17.0	1.305	1.233	12, 399.9	12, 399.9	0.0	0.0%	12, 399.9	0.0	0.0%
13	Yavorivsky	10, 498	19.3	1.178	1.233	20, 352.4	21, 256.5	904.1	4.4%	20, 824.7	472.3	2.3%
14	Arbuzynsky	2, 223	14.0	1.431	1.302	4, 278.0	4, 007.8	-270.3	-6.3%	4, 042.5	-235.5	-5.5%
14	Bashtansky	4, 444	17.6	1.178	1.302	6, 873.5	7, 256.3	382.7	5.6%	7, 325.7	452.2	6.6%
14	Berezansky	3, 245	16.1	1.305	1.302	4, 556.3	4, 497.5	-58.9	-1.3%	4, 548.2	-8.1	-0.2%
14	Berezgunatsky	2, 484	15.1	1.305	1.302	4, 015.8	3, 970.7	-45.1	-1.1%	4, 009.6	-6.2	-0.2%
14	Bratsky	2, 359	14.2	1.431	1.302	4, 069.3	3, 782.5	-286.8	-7.0%	3, 819.3	-249.9	-6.1%
14	Veselynivsky	2, 509	14.0	1.431	1.302	4, 757.2	4, 452.1	-305.0	-6.4%	4, 491.4	-265.8	-5.6%
14	Voznesensky	3, 942	18.1	1.178	1.302	5, 284.7	5, 624.2	339.5	6.4%	5, 685.8	401.1	7.6%
14	Vradivsky	1, 835	13.3	1.431	1.302	3, 731.9	3, 508.8	-223.1	-6.0%	3, 537.5	-194.4	-5.2%
14	Domanivsky	3, 367	15.4	1.305	1.302	5, 230.8	5, 169.7	-61.1	-1.2%	5, 222.3	-8.4	-0.2%
14	Yelanetsky	2, 161	14.6	1.431	1.302	3, 661.7	3, 399.0	-262.7	-7.2%	3, 432.7	-229.0	-6.3%
14	Zhovtnevy	6, 638	17.3	1.178	1.302	8, 291.6	8, 863.3	571.7	6.9%	8, 967.0	675.4	8.1%
14	Kazankivsky	2, 514	14.5	1.431	1.302	5, 085.4	4, 779.8	-305.6	-6.0%	4, 819.1	-266.4	-5.2%

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14	Kryvoozersky	3, 016	16.0	1.305	1.302	4, 604.8	4, 550.1	-54.7	-1.2%	4, 597.2	-7.6	-0.2%
14	Mykolaysky	4, 219	16.3	1.305	1.302	5, 701.7	5, 625.2	-76.5	-1.3%	5, 691.1	-10.6	-0.2%
14	Novobusky	2, 850	13.9	1.305	1.302	5, 646.7	5, 595.0	-51.7	-0.9%	5, 639.6	-7.1	-0.1%
14	Novoodesky	3, 491	16.5	1.305	1.302	6, 495.8	6, 432.5	-63.3	-1.0%	6, 487.0	-8.8	-0.1%
14	Ochkivsky	2, 567	18.2	1.305	1.302	3, 068.8	3, 022.3	-46.6	-1.5%	3, 062.4	-6.4	-0.2%
14	Pervomaysky	4, 815	17.3	1.305	1.302	6, 171.3	6, 084.0	-87.3	-1.4%	6, 159.2	-12.1	-0.2%
14	Snigurivsky	4, 932	16.8	1.305	1.302	7, 921.4	7, 832.0	-89.5	-1.1%	7, 909.1	-12.4	-0.2%
15	Ananivsky	3, 123	13.8	1.305	1.250	4, 869.7	4, 813.1	-56.6	-1.2%	4, 727.9	-141.8	-2.9%
15	Artsyzky	5, 483	18.4	1.178	1.250	8, 390.1	8, 862.4	472.2	5.6%	8, 712.9	322.7	3.8%
15	Baltsky	3, 854	15.7	1.305	1.250	7, 160.8	7, 090.9	-69.9	-1.0%	6, 985.8	-175.0	-2.4%
15	Berezivsky	4, 161	14.5	1.431	1.250	6, 735.3	6, 229.4	-505.9	-7.5%	6, 116.0	-619.3	-9.2%
15	Bilgorod-Dnistrovsky	9, 530	19.0	1.178	1.250	10, 383.1	11, 203.9	820.8	7.9%	10, 944.0	560.9	5.4%
15	Bilyyvsky	12, 373	21.9	1.178	1.250	15, 707.5	16, 773.1	1, 065.6	6.8%	16, 435.8	728.3	4.6%
15	Boldgradsky	8, 901	21.6	1.178	1.250	12, 666.3	13, 432.9	766.6	6.1%	13, 190.2	523.9	4.1%
15	Velykomychaylivsky	3, 650	16.1	1.305	1.250	5, 744.0	5, 677.8	-66.2	-1.2%	5, 578.3	-165.7	-2.9%
15	Ivanivsky	3, 154	16.3	1.305	1.250	5, 465.0	5, 407.8	-57.2	-1.0%	5, 321.8	-143.2	-2.6%
15	Izmailsky	7, 979	23.0	1.010	1.250	8, 165.8	9, 953.5	1, 787.6	21.9%	9, 735.9	1 570.1	19.2%
15	Kiliysky	4, 615	20.4	1.178	1.250	9, 586.6	9, 984.1	397.5	4.1%	9, 858.3	271.6	2.8%

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15	Kodymsky	3, 289	16.1	1.305	1.250	5, 467.7	5, 408.1	-59.7	-1.1%	5, 318.4	-149.3	-2.7%
15	Kominternivsky	6, 193	17.3	1.305	1.250	9, 237.6	9, 125.2	-112.3	-1.2%	8, 956.4	-281.2	-3.0%
15	Kotovsky	3, 986	13.5	1.431	1.250	5, 131.9	4, 647.3	-484.6	-9.4%	4, 538.6	-593.3	-11.6%
15	Krasnooknyansky	2, 747	14.7	1.431	1.250	4, 307.4	3, 973.4	-334.0	-7.8%	3, 898.5	-408.9	-9.5%
15	Lyubashivsky	2, 993	14.3	1.431	1.250	5, 718.7	5, 354.8	-363.9	-6.4%	5, 273.2	-445.5	-7.8%
15	Mykolayvsky	2, 490	14.1	1.431	1.250	3, 741.8	3, 439.0	-302.7	-8.1%	3, 371.1	-370.6	-9.9%
15	Ovidiopolsky	4, 604	17.1	1.305	1.250	9, 086.4	9, 002.9	-83.5	-0.9%	8, 877.4	-209.0	-2.3%
15	Reniysky	3, 363	22.3	1.305	1.250	7, 080.8	7, 019.8	-61.0	-0.9%	6, 928.1	-152.7	-2.2%
15	Rozdilnyansky	5, 200	18.0	1.305	1.250	9, 944.3	9, 850.0	-94.3	-0.9%	9, 708.2	-236.1	-2.4%
15	Savransky	2, 195	16.8	1.178	1.250	3, 271.9	3, 461.0	189.0	5.8%	3, 401.1	129.2	3.9%
15	Saratsky	7, 380	18.3	1.178	1.250	8, 676.2	9, 311.7	635.6	7.3%	9, 110.5	434.4	5.0%
15	Tarutinsky	5, 693	16.0	1.305	1.250	8, 744.2	8, 640.9	-103.3	-1.2%	8, 485.7	-258.5	-3.0%
15	Tatarbunarsky	4, 887	19.5	1.178	1.250	6, 866.9	7, 287.8	420.9	6.1%	7, 154.5	287.6	4.2%
15	Franzusky	2, 065	15.0	1.431	1.250	4, 100.1	3, 849.0	-251.1	-6.1%	3, 792.7	-307.4	-7.5%
15	Shyryayvsky	3, 774	15.3	1.305	1.250	5, 470.0	5, 401.6	-68.4	-1.3%	5, 298.7	-171.3	-3.1%
16	Velykobagachansky	2, 714	14.4	1.431	1.320	4, 714.4	4, 384.4	-330.0	-7.0%	4, 468.2	-246.2	-5.2%
16	Gadyatsky	5, 050	15.1	1.305	1.320	8, 633.8	8, 542.2	-91.6	-1.1%	8, 698.0	64.2	0.7%
16	Globinsky	5, 241	15.3	1.305	1.320	8, 821.3	8, 726.2	-95.1	-1.1%	8, 888.0	66.7	0.8%

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16	Grebninkivsky	1, 906	13.1	1.431	1.320	4, 166.7	3, 935.0	-231.7	-5.6%	3, 993.8	-172.9	-4.1%
16	Dykanskyy	1, 924	15.3	1.305	1.320	3, 402.7	3, 367.8	-34.9	-1.0%	3, 427.2	24.5	0.7%
16	Zinkivsky	3, 215	14.0	1.431	1.320	6, 252.1	5, 861.2	-390.9	-6.3%	5, 960.4	-291.7	-4.7%
16	Karlivsky	3, 386	18.8	1.178	1.320	6, 092.7	6, 384.3	291.6	4.8%	6, 488.8	396.1	6.5%
16	Kobelyatsky	4, 871	16.1	1.305	1.320	8, 384.6	8, 296.3	-88.3	-1.1%	8, 446.6	62.0	0.7%
16	Kozelshynsky	2, 320	13.7	1.431	1.320	4, 063.8	3, 781.8	-282.1	-6.9%	3, 853.4	-210.5	-5.2%
16	Kotelevsky	1, 202	13.1	1.431	1.320	3, 333.0	3, 186.9	-146.1	-4.4%	3, 224.0	-109.0	-3.3%
16	Kremenchutsky	4, 531	18.1	1.178	1.320	4, 972.8	5, 363.0	390.2	7.8%	5, 502.8	530.0	10.7%
16	Lokhvitsky	3, 918	15.7	1.305	1.320	7, 341.7	7, 270.7	-71.1	-1.0%	7, 391.6	49.8	0.7%
16	Lubensky	5, 081	15.7	1.305	1.320	6, 022.6	5, 930.4	-92.2	-1.5%	6, 087.2	64.6	1.1%
16	Mashyvsky	2, 736	16.5	1.305	1.320	3, 821.7	3, 772.1	-49.6	-1.3%	3, 856.5	34.8	0.9%
16	Myrgorodsky	4, 633	15.8	1.305	1.320	6, 179.3	6, 095.3	-84.0	-1.4%	6, 238.2	58.9	1.0%
16	Novosanzharsky	4, 271	15.0	1.305	1.320	6, 263.2	6, 185.7	-77.5	-1.2%	6, 317.5	54.3	0.9%
16	Orzhytsky	3, 097	15.4	1.305	1.320	4, 687.9	4, 631.8	-56.2	-1.2%	4, 727.3	39.4	0.8%
16	Piryatynsky	2, 575	14.7	1.431	1.320	5, 561.3	5, 248.3	-313.1	-5.6%	5, 327.7	-233.6	-4.2%
16	Poltavsky	6, 789	20.2	1.178	1.320	7, 498.1	8, 082.8	584.7	7.8%	8, 292.3	794.2	10.6%
16	Reshetilivsky	3, 217	13.9	1.431	1.320	5, 584.3	5, 193.2	-391.1	-7.0%	5, 292.5	-291.8	-5.2%
16	Semenivsky	3, 278	14.2	1.431	1.320	5, 372.1	4, 973.5	-398.5	-7.4%	5, 074.7	-297.4	-5.5%

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16	Khorolsky	3, 533	16.5	1.305	1.320	5, 970.9	5, 906.8	-64.1	-1.1%	6, 015.9	44.9	0.8%
16	Chornukhinsky	1, 642	11.8	1.684	1.320	2, 923.0	2, 382.3	-540.7	-18.5%	2, 433.0	-490.0	-16.8%
16	Chutivsky	2, 163	14.9	1.305	1.320	3, 955.7	3, 916.5	-39.2	-1.0%	3, 983.2	27.5	0.7%
16	Shyshatsky	2, 431	14.5	1.305	1.320	3, 753.4	3, 709.3	-44.1	-1.2%	3, 784.3	30.9	0.8%
17	Beresnivsky	8, 250	19.6	1.178	1.250	12, 870.8	13, 581.3	710.5	5.5%	13, 357.8	487.0	3.8%
17	Volodymyretsky	9, 553	19.1	1.178	1.250	13, 533.5	14, 356.3	822.7	6.1%	14, 097.5	563.9	4.2%
17	Goshansky	4, 546	14.8	1.431	1.250	6, 656.7	6, 104.0	-552.7	-8.3%	5, 980.9	-675.8	-10.2%
17	Demidivskyн	1, 750	15.8	1.305	1.250	2, 634.5	2, 602.7	-31.7	-1.2%	2, 555.3	-79.1	-3.0%
17	Dubensky	5, 862	15.6	1.305	1.250	7, 749.4	7, 643.0	-106.3	-1.4%	7, 484.2	-265.1	-3.4%
17	Dubrovitsky	6, 850	16.5	1.305	1.250	10, 102.9	9, 978.7	-124.2	-1.2%	9, 793.1	-309.8	-3.1%
17	Zarichnensky	4, 824	16.7	1.305	1.250	6, 890.8	6, 803.4	-87.5	-1.3%	6, 672.7	-218.2	-3.2%
17	Zdolbunivsky	3, 875	17.1	1.305	1.250	9, 022.2	8, 951.9	-70.3	-0.8%	8, 846.9	-175.3	-1.9%
17	Koratsky	4, 482	16.1	1.305	1.250	6, 698.2	6, 616.9	-81.3	-1.2%	6, 495.4	-202.7	-3.0%
17	Kostopilsky	5, 375	16.7	1.305	1.250	11, 079.0	10, 981.5	-97.5	-0.9%	10, 835.9	-243.1	-2.2%
17	Mlynivsky	5, 064	16.5	1.305	1.250	7, 572.8	7, 480.9	-91.8	-1.2%	7, 343.7	-229.0	-3.0%
17	Ostrozky	4, 734	15.8	1.305	1.250	5, 729.0	5, 643.2	-85.9	-1.5%	5, 514.9	-214.1	-3.7%
17	Radyvilivsky	4, 005	16.4	1.305	1.250	6, 708.2	6, 635.6	-72.6	-1.1%	6, 527.1	-181.1	-2.7%
17	Rivnensky	9, 750	18.9	1.178	1.250	13, 819.7	14, 659.4	839.7	6.1%	14, 395.2	575.6	4.2%

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17	Rokytnivsky	8, 234	19.7	1.178	1.250	10, 957.9	11, 667.0	709.1	6.5%	11, 443.9	486.1	4.4%
17	Sarnensky	11, 534	20.1	1.178	1.250	19, 049.2	20, 042.5	993.3	5.2%	19, 730.0	680.9	3.6%
18	Bilopilsky	2, 953	13.1	1.431	1.432	7, 473.3	7, 114.3	-359.0	-4.8%	7, 475.3	2.0	0.0%
18	Burynsky	2, 960	14.1	1.431	1.432	5, 468.8	5, 108.9	-359.9	-6.6%	5, 470.8	2.0	0.0%
18	Velykopysarivsky	2, 507	15.0	1.305	1.432	3, 985.1	3, 939.6	-45.5	-1.1%	4, 246.1	261.0	6.5%
18	Gluhivsky	3, 134	11.1	1.684	1.432	5, 263.1	4, 231.1	-1, 032.0	-19.6%	4, 614.2	-648.8	-12.3%
18	Konotopsky	3, 885	13.4	1.431	1.432	5, 417.1	4, 944.8	-472.3	-8.7%	5, 419.7	2.6	0.0%
18	Krasnopilsky	3, 129	13.0	1.431	1.432	5, 604.2	5, 223.8	-380.4	-6.8%	5, 606.3	2.1	0.0%
18	Krolevtsky	2, 368	13.1	1.431	1.432	6, 149.3	5, 861.4	-287.9	-4.7%	6, 150.8	1.6	0.0%
18	Lebedinsky	3, 403	15.7	1.305	1.432	4, 075.2	4, 013.5	-61.7	-1.5%	4, 429.5	354.3	8.7%
18	Lypovodolynsky	2, 360	12.4	1.431	1.432	3, 860.9	3, 573.9	-286.9	-7.4%	3, 862.4	1.6	0.0%
18	Nedrygaylivsky	2, 442	14.6	1.305	1.432	4, 336.5	4, 292.2	-44.3	-1.0%	4, 590.7	254.2	5.9%
18	Okhtyrsky	3, 598	13.7	1.431	1.432	5, 062.2	4, 624.8	-437.4	-8.6%	5, 064.6	2.4	0.0%
18	Putivlsky	1, 959	11.3	1.684	1.432	4, 653.6	4, 008.6	-645.1	-13.9%	4, 248.1	-405.6	-8.7%
18	Romensky	6, 040	13.7	1.431	1.432	7, 802.3	7, 068.0	-734.3	-9.4%	7, 806.3	4.0	0.1%
18	Seredyno-Budsky	1, 299	8.3	1.684	1.432	3, 271.9	2, 844.2	-427.7	-13.1%	3, 002.9	-268.9	-8.2%
18	Sumsky	6, 914	16.6	1.305	1.432	9, 539.9	9, 414.5	-125.4	-1.3%	10, 259.6	719.8	7.5%
18	Trostyanetsky	2, 293	13.7	1.431	1.432	5, 763.7	5, 484.9	-278.8	-4.8%	5, 765.2	1.5	0.0%

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18	Shostkinsky	1, 837	12.4	1.431	1.432	3, 102.7	2, 879.4	-223.3	-7.2%	3, 103.9	1.2	0.0%
18	Yampilsky	1, 385	11.1	1.684	1.432	4, 274.2	3, 818.1	-456.0	-10.7%	3, 987.4	-286.7	-6.7%
19	Berezhansky	3, 437	15.2	1.305	1.277	6, 973.9	6, 911.6	-62.3	-0.9%	6, 895.9	-78.0	-1.1%
19	Borshivsky	7, 323	18.0	1.178	1.277	11, 055.1	11, 685.8	630.7	5.7%	11, 652.5	597.3	5.4%
19	Buchatsky	7, 807	18.7	1.178	1.277	11, 132.2	11, 804.5	672.4	6.0%	11, 769.0	636.8	5.7%
19	Gusyatynsky	5, 745	16.7	1.305	1.277	10, 321.9	10, 217.7	-104.2	-1.0%	10, 191.5	-130.4	-1.3%
19	Zalyshitsky	4, 978	16.5	1.305	1.277	7, 966.2	7, 875.9	-90.3	-1.1%	7, 853.2	-113.0	-1.4%
19	Zbarazky	5, 720	16.5	1.305	1.277	9, 347.2	9, 243.5	-103.7	-1.1%	9, 217.4	-129.8	-1.4%
19	Zborivsky	5, 019	15.2	1.305	1.277	7, 793.0	7, 702.0	-91.0	-1.2%	7, 679.1	-113.9	-1.5%
19	Kozivsky	4, 292	16.1	1.305	1.277	6, 910.6	6, 832.8	-77.8	-1.1%	6, 813.2	-97.4	-1.4%
19	Kremenetsky	5, 865	16.7	1.305	1.277	11, 935.2	11, 828.9	-106.4	-0.9%	11, 802.2	-133.1	-1.1%
19	Lanovetsky	3, 087	14.0	1.431	1.277	5, 376.7	5, 001.3	-375.3	-7.0%	4, 987.3	-389.4	-7.2%
19	Monastyrysky	3, 101	14.8	1.305	1.277	5, 256.0	5, 199.7	-56.2	-1.1%	5, 185.6	-70.4	-1.3%
19	Pidvolochynsky	4, 622	15.2	1.305	1.277	7, 267.3	7, 183.5	-83.8	-1.2%	7, 162.5	-104.9	-1.4%
19	Pidgayetsky	2, 335	14.8	1.305	1.277	3, 564.9	3, 522.5	-42.3	-1.2%	3, 511.9	-53.0	-1.5%
19	Terebovlyansky	6, 702	16.0	1.305	1.277	10, 796.0	10, 674.5	-121.6	-1.1%	10, 644.0	-152.1	-1.4%
19	Ternopolsky	6, 982	17.9	1.178	1.277	8, 698.5	9, 299.8	601.3	6.9%	9, 268.0	569.5	6.5%
19	Chortkivsky	6, 474	17.2	1.305	1.277	12, 961.8	12, 844.4	-117.4	-0.9%	12, 814.9	-146.9	-1.1%

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19	Shumsky	4, 038	14.7	1.305	1.277	5, 857.2	5, 783.9	-73.2	-1.3%	5, 765.6	-91.6	-1.6%
20	Balakliysky	4, 549	15.3	1.305	1.326	12, 491.2	12, 408.7	-82.5	-0.7%	12, 571.1	79.9	0.6%
20	Barvinsky	2, 746	15.3	1.305	1.326	4, 858.7	4, 808.9	-49.8	-1.0%	4, 907.0	48.2	1.0%
20	Blyznyukivsky	3, 137	13.6	1.431	1.326	4, 836.3	4, 454.9	-381.4	-7.9%	4, 566.9	-269.4	-5.6%
20	Bogodukhivsky	2, 593	12.6	1.431	1.326	6, 139.7	5, 824.4	-315.2	-5.1%	5, 917.0	-222.7	-3.6%
20	Borivsky	2, 168	14.5	1.431	1.326	3, 724.8	3, 461.2	-263.6	-7.1%	3, 538.6	-186.2	-5.0%
20	Valkivsky	2, 429	16.5	1.305	1.326	4, 855.0	4, 811.0	-44.1	-0.9%	4, 897.7	42.7	0.9%
20	Velykoburlytsky	2, 743	13.4	1.431	1.326	4, 848.1	4, 514.6	-333.5	-6.9%	4, 612.6	-235.5	-4.9%
20	Vovchansky	3, 158	11.5	1.431	1.326	8, 925.4	8, 541.5	-383.9	-4.3%	8 654.3	-271.2	-3.0%
20	Dvorichansky	2, 460	14.6	1.305	1.326	3, 599.4	3, 554.8	-44.6	-1.2%	3, 642.6	43.2	1.2%
20	Dergachivsky	2, 678	20.6	1.178	1.326	10, 625.4	10, 856.0	230.6	2.2%	10, 951.6	326.3	3.1%
20	Zachepilivsky	1, 859	15.1	1.305	1.326	2, 973.3	2, 939.5	-33.7	-1.1%	3, 005.9	32.7	1.1%
20	Zmiyvsky	4, 609	20.2	1.178	1.326	10, 558.0	10, 955.0	396.9	3.8%	11, 119.5	561.5	5.3%
20	Zolochivsky	2, 691	14.8	1.305	1.326	4, 590.0	4, 541.2	-48.8	-1.1%	4, 637.3	47.3	1.0%
20	Izyumsky	2, 830	15.0	1.305	1.326	3, 375.7	3, 324.4	-51.3	-1.5%	3, 425.4	49.7	1.5%
20	Kechigivsky	1, 887	13.1	1.431	1.326	3, 938.9	3, 709.5	-229.4	-5.8%	3, 776.9	-162.0	-4.1%
20	Kolomatsky	543	17.5	1.178	1.326	1, 087.8	1, 134.5	46.8	4.3%	1, 153.9	66.2	6.1%
20	Kreasnogradsky	3, 296	15.5	1.305	1.326	6, 623.3	6, 563.5	-59.8	-0.9%	6, 681.2	57.9	0.9%

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20	Krasnokutsky	3, 033	17.1	1.305	1.326	5, 055.7	5, 000.7	-55.0	-1.1%	5, 109.0	53.3	1.1%
20	Kupyanivsky	3, 557	15.7	1.305	1.326	4, 267.0	4, 202.5	-64.5	-1.5%	4, 329.5	62.5	1.5%
20	Lozivsky	3, 127	15.0	1.305	1.326	5, 291.3	5, 234.6	-56.7	-1.1%	5, 346.3	54.9	1.0%
20	Novodolazky	3, 139	14.7	1.431	1.326	5, 772.3	5, 390.7	-381.6	-6.6%	5, 502.8	-269.5	-4.7%
20	Pervomaysky	2, 408	12.5	1.431	1.326	3, 132.4	2, 839.7	-292.8	-9.3%	2, 925.7	-206.8	-6.6%
20	Pechenizsky	673	14.6	1.305	1.326	1, 461.4	1, 449.2	-12.2	-0.8%	1, 473.2	11.8	0.8%
20	Sakhnovshcitsky	2, 762	13.3	1.431	1.326	4, 714.8	4, 379.0	-335.8	-7.1%	4, 477.6	-237.2	-5.0%
20	Kharkivsky	5, 250	19.3	1.178	1.326	18, 725.3	19, 177.5	452.1	2.4%	19, 364.9	639.6	3.4%
20	Chuguyvsky	2, 614	15.9	1.305	1.326	6, 518.2	6, 470.8	-47.4	-0.7%	6, 564.1	45.9	0.7%
20	Shevchenkivsky	1, 900	12.9	1.431	1.326	3, 748.9	3, 517.9	-231.0	-6.2%	3, 585.7	-163.2	-4.4%
21	Bereslavsky	5, 728	15.9	1.305	1.227	9, 145.2	9, 041.3	-103.9	-1.1%	8, 777.7	-367.5	-4.0%
21	Bilozersky	7, 924	20.3	1.178	1.227	10, 263.0	10, 945.4	682.4	6.6%	10, 580.7	317.7	3.1%
21	Velykolepetytsky	1, 737	15.8	1.305	1.227	3, 375.9	3, 344.4	-31.5	-0.9%	3, 264.5	-111.5	-3.3%
21	Velykoalexandriyvsky	2, 951	17.2	1.305	1.227	5, 339.9	5, 286.3	-53.5	-1.0%	5, 150.5	-189.3	-3.5%
21	Verkhnyoorgachytsky	1, 122	16.3	1.305	1.227	2, 365.1	2, 344.8	-20.3	-0.9%	2, 293.2	-72.0	-3.0%
21	Vysokopilsky	1, 507	12.7	1.305	1.227	2, 999.4	2, 972.1	-27.3	-0.9%	2, 902.7	-96.7	-3.2%
21	Genychitsky	4, 693	20.6	1.178	1.227	9, 751.0	10 155.2	404.2	4.1%	9, 939.2	188.2	1.9%
21	Goloprystansky	6, 972	18.7	1.178	1.227	9, 890.0	10, 490.5	600.5	6.1%	10, 169.6	279.6	2.8%

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21	Gornostayvsky	2, 556	16.0	1.305	1.227	4, 063.9	4, 017.5	-46.4	-1.1%	3, 899.9	-164.0	-4.0%
21	Ivanivsky	2, 143	15.8	1.431	1.227	3, 535.3	3, 274.8	-260.5	-7.4%	3, 176.2	-359.2	-10.2%
21	Kalanchatsky	1, 931	14.4	1.305	1.227	4, 306.1	4 271.0	-35.0	-0.8%	4, 182.2	-123.9	-2.9%
21	Kakhovsky	6, 200	18.0	1.178	1.227	6, 879.2	7, 413.2	534.0	7.8%	7, 127.8	248.6	3.6%
21	Nyzhnyosyrogozky	2, 248	16.5	1.178	1.227	3, 396.0	3, 589.6	193.6	5.7%	3, 486.2	90.1	2.7%
21	Novovorontsovsky	2, 791	17.9	1.178	1.227	3, 985.8	4, 226.2	240.4	6.0%	4, 097.7	111.9	2.8%
21	Novotroitsky	4, 391	16.3	1.305	1.227	7, 616.1	7, 536.4	-79.6	-1.0%	7, 334.3	-281.7	-3.7%
21	Skadovsky	3, 968	18.0	1.178	1.227	7, 417.2	7, 758.9	341.7	4.6%	7, 576.3	159.1	2.1%
21	Tsyuryupinsky	5, 032	20.1	1.178	1.227	10, 601.5	11, 034.9	433.4	4.1%	10, 803.3	201.8	1.9%
21	Chaplynsky	4, 211	17.6	1.178	1.227	7, 297.9	7, 660.6	362.7	5.0%	7, 466.7	168.8	2.3%
22	Bilogirsky	3, 178	13.9	1.431	1.372	5, 726.7	5, 340.3	-386.4	-6.7%	5, 573.7	-153.0	-2.7%
22	Vinkovetsky	2, 810	13.7	1.431	1.372	4, 677.1	4, 335.4	-341.6	-7.3%	4, 541.7	-135.3	-2.9%
22	Volochynsky	4, 243	12.9	1.431	1.372	9, 016.8	8, 501.0	-515.8	-5.7%	8, 812.5	-204.3	-2.3%
22	Gorodotsky	4, 494	15.1	1.305	1.372	8, 627.0	8, 545.5	-81.5	-0.9%	8, 875.4	248.4	2.9%
22	Derazhnyansky	2, 614	12.2	1.431	1.372	5, 811.3	5, 493.5	-317.8	-5.5%	5, 685.4	-125.9	-2.2%
22	Dunaevsky	6, 391	15.1	1.305	1.372	10, 718.8	10, 602.9	-115.9	-1.1%	11, 072.1	353.3	3.3%
22	Izyaslavsky	5, 236	15.7	1.305	1.372	8, 741.2	8, 646.3	-95.0	-1.1%	9, 030.7	289.4	3.3%
22	Kamyanet-Podilisky	7, 930	14.8	1.431	1.372	10, 766.8	9, 802.7	-964.1	-9.0%	10, 384.9	-381.9	-3.5%

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22	Krasylivsky	5, 273	14.0	1.431	1.372	10, 128.3	9, 487.2	-641.1	-6.3%	9, 874.4	-253.9	-2.5%
22	Letychivsky	2, 516	12.7	1.431	1.372	5, 299.2	4, 993.3	-305.9	-5.8%	5, 178.0	-121.2	-2.3%
22	Novoushynsky	3, 494	14.0	1.431	1.372	5, 498.5	5, 073.8	-424.8	-7.7%	5, 330.3	-168.3	-3.1%
22	Polonsky	2, 945	15.7	1.305	1.372	7, 921.5	7, 868.1	-53.4	-0.7%	8, 084.3	162.8	2.1%
22	Slavutsky	5, 385	14.8	1.305	1.372	6, 507.8	6, 410.1	-97.7	-1.5%	6, 805.4	297.7	4.6%
22	Starokostyantynivsky	5, 085	13.6	1.431	1.372	6, 655.4	6, 037.2	-618.2	-9.3%	6, 410.5	-244.9	-3.7%
22	Starosynyavsky	2, 526	13.8	1.431	1.372	4, 273.4	3, 966.3	-307.1	-7.2%	4, 151.8	-121.6	-2.8%
22	Teophipolsky	3, 299	13.9	1.431	1.372	5, 580.1	5, 179.0	-401.1	-7.2%	5, 421.2	-158.9	-2.8%
22	Khmelnitsky	5, 984	14.7	1.305	1.372	7, 421.0	7, 312.5	-108.5	-1.5%	7, 751.8	330.8	4.5%
22	Chemerovetsky	5, 156	14.9	1.305	1.372	7, 100.5	7, 007.0	-93.5	-1.3%	7, 385.5	285.0	4.0%
22	Shepetivsky	5, 171	15.7	1.305	1.372	6, 841.6	6, 747.8	-93.8	-1.4%	7, 127.5	285.9	4.2%
22	Yarmolynetsky	3, 822	13.1	1.431	1.372	6, 023.7	5, 559.0	-464.7	-7.7%	5, 839.6	-184.1	-3.1%
23	Gorodyschensky	3, 414	16.5	1.305	1.332	6, 663.1	6, 601.1	-61.9	-0.9%	6, 738.3	75.3	1.1%
23	Drabivsky	4, 232	15.6	1.305	1.332	6, 467.3	6, 390.5	-76.8	-1.2%	6, 560.6	93.3	1.4%
23	Zhashkivsky	4, 082	14.4	1.431	1.332	7, 669.3	7, 173.0	-496.3	-6.5%	7, 337.0	-332.2	-4.3%
23	Zvenygorodsky	3, 917	15.9	1.305	1.332	8, 504.0	8, 433.0	-71.0	-0.8%	8, 590.4	86.4	1.0%
23	Zolotynisky	6, 365	16.6	1.305	1.332	7, 578.8	7, 463.3	-115.4	-1.5%	7, 719.1	140.4	1.9%
23	Kamyansky	2, 602	15.0	1.305	1.332	5, 001.2	4, 954.0	-47.2	-0.9%	5, 058.6	57.4	1.1%

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23	Kanivsky	3, 122	13.5	1.431	1.332	4, 040.9	3, 661.4	-379.6	-9.4%	3, 786.8	-254.1	-6.3%
23	Katerynopilsky	2, 375	12.2	1.431	1.332	4, 671.1	4, 382.4	-288.7	-6.2%	4, 477.8	-193.3	-4.1%
23	Korsun-Shevchenkivsky	3, 242	14.3	1.431	1.332	7, 075.8	6, 681.6	-394.2	-5.6%	6, 811.9	-263.9	-3.7%
23	Lysyansky	2, 875	14.0	1.431	1.332	4, 954.1	4, 604.6	-349.5	-7.1%	4, 720.1	-234.0	-4.7%
23	Mankivsky	2, 994	13.9	1.431	1.332	5, 613.3	5, 249.3	-364.0	-6.5%	5, 369.6	-243.7	-4.3%
23	Monastaryschensky	3, 028	13.5	1.431	1.332	7, 028.1	6, 659.9	-368.1	-5.2%	6, 781.6	-246.4	-3.5%
23	Smilyansky	4, 015	14.9	1.305	1.332	4, 893.8	4, 821.0	-72.8	-1.5%	4, 982.4	88.5	1.8%
23	Talnivsky	3, 419	13.6	1.431	1.332	6, 763.7	6, 348.0	-415.7	-6.1%	6, 485.4	-278.3	-4.1%
23	Umansky	6, 793	15.0	1.305	1.332	8, 144.4	8, 021.1	-123.2	-1.5%	8, 294.1	149.8	1.8%
23	Krystynivsky	3, 047	13.9	1.431	1.332	6, 200.1	5, 829.7	-370.4	-6.0%	5, 952.2	-248.0	-4.0%
23	Cherkassky	10, 495	20.9	1.178	1.332	11, 463.2	12, 367.1	903.9	7.9%	12, 788.9	1, 325.6	11.6%
23	Chygyrynsky	2, 830	15.1	1.305	1.332	4, 913.6	4, 862.3	-51.3	-1.0%	4, 976.0	62.4	1.3%
23	Chornobayvsky	5, 525	16.6	1.305	1.332	7, 737.4	7, 637.2	-100.2	-1.3%	7, 859.2	121.8	1.6%
23	Shpolyansky	4, 211	17.2	1.305	1.332	7, 645.5	7, 569.2	-76.4	-1.0%	7, 738.4	92.9	1.2%
24	Vizhnytsky	4, 650	19.4	1.178	1.178	10, 596.8	10, 997.2	400.5	3.8%	10, 596.8	0.0	0.0%
24	Gertsayvsky	5, 344	19.6	1.178	1.178	6, 309.2	6, 769.4	460.2	7.3%	6, 309.2	0.0	0.0%
24	Glybotsky	10, 076	20.0	1.178	1.178	12, 627.2	13, 494.9	867.8	6.9%	12, 627.2	0.0	0.0%
24	Zastavnitsky	6, 676	18.6	1.178	1.178	9, 008.2	9, 583.1	575.0	6.4%	9, 008.2	0.0	0.0%

Oblast.[89]	District (Rayon)	Students[90]	Average student number per class	K(s)[91]	K2[92]	Valid calculation for district (rayon) educational budget thousand UAH	Calculation for educational budget according to Option 1 thousand UAH	Difference with the valid calculation. thousand UAH	Difference with valid calculation, %	Calculation for district (rayon) educational budget according to Option 2 thousand UAH	Difference with valid calculation, thousand UAH	Difference with valid calculation, %
24	Kelmenetsky	4, 810	18.1	1.178	1.178	6, 263.8	6, 678.0	414.3	6.6%	6, 263.8	0.0	0.0%
24	Kitsmansky	7, 983	20.2	1.178	1.178	10, 639.6	11, 327.1	687.5	6.5%	10, 639.6	0.0	0.0%
24	Novoseletsky	10, 900	21.6	1.178	1.178	13, 558.2	14, 496.9	938.7	6.9%	13, 558.2	0.0	0.0%
24	Putylsky	0	17.5	1.305	1.178	5, 865.2	5, 865.2	0.0	0.0%	5, 865.2	0.0	0.0%
24	Sokyraynsky	5, 242	18.9	1.178	1.178	6, 908.7	7, 360.2	451.5	6.5%	6, 908.7	0.0	0.0%
24	Storozhynetsky	10, 662	20.5	1.178	1.178	16, 801.6	17, 719.8	918.2	5.5%	16, 801.6	0.0	0.0%
24	Khotynsky	7, 906	20.5	1.178	1.178	10, 207.4	10, 888.3	680.9	6.7%	10, 207.4	0.0	0.0%
25	Bakhmatsky	3, 457	14.3	1.431	1.474	7, 626.9	7, 206.6	-420.3	-5.5%	7, 748.2	121.3	1.6%
25	Bobrovytsky	3, 117	14.0	1.431	1.474	5, 492.4	5, 113.4	-379.0	-6.9%	5, 601.7	109.3	2.0%
25	Borznyansky	3, 599	14.1	1.431	1.474	6, 123.1	5, 685.6	-437.6	-7.1%	6, 249.4	126.2	2.1%
25	Varvynsky	1, 494	13.6	1.431	1.474	3, 139.2	2, 957.6	-181.6	-5.8%	3, 191.6	52.4	1.7%
25	Gorodnyansky	2, 415	11.5	1.684	1.474	5, 852.9	5, 057.7	-795.2	-13.6%	5, 436.0	-416.9	-7.1%
25	Ichnaynsky	2, 871	12.6	1.431	1.474	5, 881.0	5, 531.9	-349.0	-5.9%	5, 981.7	100.7	1.7%
25	Kozeletsky	3, 276	11.5	1.431	1.474	7, 664.5	7, 266.2	-398.3	-5.2%	7, 779.4	114.9	1.5%
25	Koropsky	2, 775	13.5	1.431	1.474	4, 685.4	4, 348.1	-337.4	-7.2%	4, 782.8	97.3	2.1%
25	Korukivsky	1, 981	12.9	1.431	1.474	5, 026.2	4, 785.4	-240.8	-4.8%	5, 095.7	69.5	1.4%
25	Kulykivsky	1, 712	13.4	1.431	1.474	2, 938.1	2, 730.0	-208.1	-7.1%	2, 998.2	60.1	2.0%
25	Mensky	2, 982	14.3	1.431	1.474	6, 710.8	6, 348.3	-362.5	-5.4%	6, 815.4	104.6	1.6%

Oblast.[89]	District (Rayon)	Students[90]	Average student number per class	K(s)[91]	K2[92]	Valid calculation for district (rayon) educational budget thousand UAH	Calculation for educational budget according to Option 1 thousand UAH	Difference with the valid calculation. thousand UAH	Difference with valid calculation, %	Calculation for district (rayon) educational budget according to Option 2 thousand UAH	Difference with valid calculation, thousand UAH	Difference with valid calculation, %
25	Nizhynsky	3, 408	13.7	1.431	1.474	4, 961.0	4, 546.7	-414.3	-8.4%	5, 080.6	119.5	2.4%
25	Novgorod-Siversky	2, 210	10.2	1.684	1.474	5, 166.0	4, 438.3	-727.7	-14.1%	4, 784.5	-381.5	-7.4%
25	Nosivsky	2, 525	13.7	1.431	1.474	5, 396.6	5, 089.6	-307.0	-5.7%	5, 485.2	88.6	1.6%
25	Prylutsky	3, 420	12.3	1.431	1.474	5, 844.2	5, 428.4	-415.8	-7.1%	5, 964.2	120.0	2.1%
25	Ripkynsky	1, 870	10.4	1.684	1.474	5, 020.2	4, 404.4	-615.7	-12.3%	4, 697.4	-322.8	-6.4%
25	Semenivsky	1, 585	11.4	1.684	1.474	3, 768.7	3, 246.8	-521.9	-13.8%	3, 495.1	-273.6	-7.3%
25	Sosnyntsky	1, 822	12.1	1.431	1.474	3, 321.3	3, 099.8	-221.5	-6.7%	3, 385.2	63.9	1.9%
25	Sribnyansky	1, 101	12.0	1.431	1.474	2, 105.9	1, 972.1	-133.9	-6.4%	2, 144.5	38.6	1.8%
25	Talalayvsky	1, 479	11.6	1.684	1.474	2, 844.1	2, 357.1	-487.0	-17.1%	2, 588.8	-255.3	-9.0%
25	Chernigivsky	5, 443	13.5	1.431	1.474	8, 492.9	7, 831.2	-661.7	-7.8%	8, 683.8	190.9	2.2%
25	Schorsky	2, 056	12.5	1.431	1.474	4, 283.5	4, 033.6	-250.0	-5.8%	4, 355.7	72.1	1.7%
ALL REGIONS OF UKRAINE:		2, 056, 326	16.6			3, 520, 635.1	3, 520, 635.1	0.0	0.0%	3, 520, 635.1	0.0	0.0%

Notes

Стратегія реформування освіти в Україні

Рекомендації з освітньої політики
(англійською мовою)

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