THE GOVERNMENT OF THE REPUBLIC OF SERBIA
THE MINISTRY OF EDUCATION, SCIENCE AND
TECHNOLOGICAL DEVELOPMENT

STRATEGY
FOR EDUCATION
DEVELOPMENT IN SERBIA 2020

Belgrade 2012
STRATEGY:
MODERN KNOWLEDGE-BASED SERBIA

1.

If anything is certain in the modern world, a world full of uncertainties, it is the fact that knowledge and creativity above all can yield long-term progress – both in economy as well as in life, work and creation in general, in public engagement, science and technology, culture and lifestyle.

It is on this notion that we base our belief that a dynamic development of Serbian economy and Serbian society would not be possible without structural reforms, whose tempo and outcome depend on three mutually connected factors – increase in investment, reform of the education system and promotion of the business environment. That is the key message of the strategic concept of the new model of economic growth of Serbia by the year 2020, as well as – particularly in terms of education – recent scientific and expert debates at the Serbian Academy of Sciences and Arts (SANU) and the public reading of the Education Development Strategy for Serbia until 2020 at the National Assembly. As we can see, there is a high level of agreement that only by raising the creative potential of our economy and our society can we bridge the absolute and the relative gap in development in comparison with other countries. In that sense, both science and profession and politics today see education as the driving force of economic growth and social progress. And the only way for education to realize this role is to be able to develop the ability of understanding and critical thinking, to encourage creative initiative and entrepreneurial spirit, to achieve and maintain true freedom, openness and quality, and be accessible to all as a fundamental democratic right.
and an opportunity for lifelong learning, which includes humanistic, ethical and esthetic perspective on the world. Only such education can be the foundation and the framework for increasing our potential and our competitiveness in the global market.

Although the quality of our education system is higher than it is generally described and believed, especially in terms of achieving accessibility, and investment in infrastructure and equipment, Serbia’s economic development, general social prosperity, social stability and European integration capacity require a new, modern and long-term education strategy. Principally, this strategy would need to fulfill two key roles – to be the foundation for the shaping of main regulatory instruments of functioning and development of education in Serbia and to be the basic strategic instrument of transferring our education system from the present to the desired and feasible condition, in an efficient and acceptable manner. Led by this motive, in early May 2011 the Ministry of Education and Science initiated the formation of the Project Council for the preparation of the Education System Development Strategy for Serbia until 2020. More than 200 renowned experts took part in the development of this comprehensive strategy draft, under management of the leading project coordinators, Prof. Vladimir Matejić, PhD and Prof. Ivan Ivić, PhD. The Education Development Strategy for Serbia until 2020, adopted on October 26th 2012 by the Government of Serbia, now available to general public, sets out key objectives of the long-term development of our school system – increasing the quality of education process and outcome, increasing the coverage of Serbian population at all levels of education, achieving and maintaining relevance of education, and increasing the efficiency of utilization of education resources. The text before you contains detailed and exact description of the present state of our education in all its subsystems, and presents the vision of its development in years to come.

2.

Making a scale model of a comprehensive, complex and unified project such as our Strategy is a challenging task. However, what can and must be understood at the first reading is a highly focused, expert view on the past and present times, and particularly, a thoughtful projection of the future. The Strategy shows understanding for the values of tradition, and for education successfully performing its national duty even in the most difficult times, but also points to deficiencies of all twenty previous reforms of the education system, which were always partial, never wide-ranging and long-term. The description of the present condition is equally unrelenting, provided for each subsystem individually, while the vision for planned development is realistic and bold at the same time, without any compromise and improvisation.
Comprised of five problem parts, the **first** part of the Strategy sets a precise context, concept and objectives of the project, its contents, approach to project planning and the foundations on which it was based. For the present purpose, it may be sufficient to emphasize that the Strategy, with the ever-present awareness of internal principles of the profession, shows consistency in its stand that education has a mission in the society, expressing the purpose of its existence “from the viewpoint of the outside world”, that is, its key and long-term role in economic, social, scientific-technological, cultural and overall progress of the society as a whole. From the description of our educational needs, we should at least point out the Strategy’s dedication to a balanced strengthening of our international strategic position and increasing competitiveness on the one hand, and national cultural heritage on the other.

**The second part** of the Strategy refers to pre-university education (preschool, primary, secondary general and arts education and general education in secondary vocational education, and secondary vocational education) and contains the description of the present condition as well as vision of development of each of the said levels from the aspect of coverage, quality, efficiency and relevance. If we focus only on indispensable sections named “Strategy for achieving the vision”, we will see how the Strategy differentiates and precisely defines the development of pre-school institutions, programs and services, how it analyses the “considerable discrepancy between the vision of primary education and the current situation”, with special emphasis on the need to increase coverage and reduce student drop-out rates in primary schools, how in the sector of general and arts secondary education, along with the priority task of increased coverage, it envisages concrete measures aimed to improve the quality of syllabus and curriculum, including, among other things, higher flexibility of the curriculum and autonomy of teachers, how based on analytic insight into possibilities of more efficient inclusion in the labor market and continued education it defines strategic measures for secondary vocational education, such as, for example, establishment of the national qualifications framework for lifelong learning and harmonization of the schools network and available education profiles with the needs of the economy. Special significance of this part of the Strategy lies in drawing attention to the necessity of strategic relation of education with other systems, especially in light of “unfavorable economic conditions”. In that sense, a mandatory requirement is set, that “all experts engaged in secondary vocational education must have insight into all changes related to primary, secondary general, and higher education, as well as insight into changes in all professions for which students are trained within the subsystem”.

Having in mind the irreplaceable role that persons with higher education have in modern economic and general development, we can understand the fact that the **third part** of the Strategy is comparatively the most voluminous. The
emphasis is even more understandable knowing that the activities of Serbian higher education “are part of both international and particularly of European educational, science and arts area”, with the mission of constantly transferring and creating relevant knowledge and professional competencies enabling comprehensive progress of the country and its citizens “under constantly changing circumstances of life and development”. Within this joint framework, the vision was presented for the development of academic studies (Bachelor and Master), PhD studies, applied studies, and teacher education. If we would summarize the focus of desired development in these four areas in a single sentence for each area, the first sentence would emphasize the challenge of increasing quality in general, in line with world and European standards, along with the planned internationalization of studies (with 10% international students), the second would point to the function of “long-term investment into intellectual potential” and the ambition to have at least 200 PhD students per one million inhabitants complete their studies within the envisaged time period every year, the third would focus on the need to overcome the discrepancy with Europe (with, on average, 30% of students in professional higher education institutions, whereas only 19.3% of the student population in Serbia are students of applied studies), and the fourth sentence would hold a warning statement that up to now “teachers engaged in higher education have never had any support for their pedagogical work and systematic training in the realization of educational process at universities and higher education institutions”, and that therefore, in the future, for the purpose of total professionalization of the teaching profession, good initial education of all teachers is necessary, along with the continuity in development of their professional competencies.

The fourth part of the Strategy with the common title “All-embracing strategies of education system development”, focuses on the problem of adult education, funding of education, and a particularly delicate issue of education of individual categories of students. The first topic is existentially set out by the modern-day necessity of lifelong learning, better employment and social participation of adult citizens, and it is also the object of more recent legislation, while the second topic, considering that funding is “one of the most important instruments of realization of education strategies and promotion of the education system”, attracts particular attention of both professional and general public, as could be seen at the public debate on the draft Strategy. The third domain, with the tendency of integration into education system, focuses on education of members of ethnic minorities, gifted pupils and students, and persons with disabilities and developmental delays. Focusing, on this occasion, on just one feature in each of the said three problem domains, we will first emphasize the special significance of pointing to strategic relations of the adult education subsystem with other systems – economy, professional associations, fiscal system and culture,
and the necessary participation of the ministry in charge of culture, media and information society in the funding of adult education programs. The funding based on a new and carefully developed model should contribute to promoting quality and equality at all levels, from pre-school to PhD studies, along with special measures such as additional funding, scholarship programs and loans for pupils and students from lower socioeconomic backgrounds, as well as “covering all costs of the educational process, in order to provide universal accessibility and application of the principles of excellence at the highest level of formal education”. Finally, in the education of individual categories of students, the Strategy employs a fine professional and humanistic approach to set special strategic measures, of which we will point out just three: efforts aimed at integrating members of minorities in the social community, while at the same time preserving their national and cultural identity, giving preference to competitions for gifted students that are based on principles of true academic merit, depth of knowledge and internal motivation, and the need to consider alternatives to validity of basic standards or defining special standards in inclusive education.

3.

Before a concise summary of the fifth part of the Strategy, under the title “Implementation”, it would be useful to remind that the Ministry, by setting the education development strategy as its main priority four and a half years ago, has in the meantime – together with the Government, National Assembly and scientific-educational institutions – done much to maintain and promote Serbia’s education system. Despite well known crisis conditions, and occasional lightly and aggressively directed criticisms that generally ignore the volume, size and complexity of the education system of the Republic (with a total of 1,250,000 pupils and students and more than 125,000 employees), our education system is at a much higher level than could be concluded based on individual widely publicized cases. Not neglecting the quiet, almost invisible, excellent joint effort of the greater part of participants in the educational process, we will draw attention to just several indicators of progress – such as the constant increase in reading, mathematics and information literacy, growing success of students representing Serbia in international competitions, University of Belgrade entering the Shanghai list, increasingly concrete and broader integration into the European higher education area, with equally open mind to specific and vital needs of our society and economy, as can be seen from the fact that we have introduced several tens of new professional education profiles in secondary education. Having in mind the broader social context, and the relations on which the Strategy rightly insists, we should also point out the progress made in the social dialogue with trade union associations of employees in education. It is also
fair to draw attention to the results of inclusion of vulnerable social and ethnic groups into the educational process, as well as various aspects of realization of the social dimension and approach to education under conditions of increasingly manifest social and economic stratification of our society. Without burdening this document with numbers and specifics, we cannot neglect the encouraging fact that from mid 2008 to present day, despite considerable economic restrictions, we have achieved significant results in building and renovating higher education institutions, boarding homes for pupils and students, new primary schools, reconstruction and restoration of facilities and realization of modernization projects in primary schools, as well as establishment, construction and restoration of secondary school facilities. We would particularly like to emphasize the project of free school books, initiated in the academic year 2009/2010. Today, 2.8 million textbooks are available for free to 305,000 primary school children from first through fourth grade. Even more impressive are the data related to the number of students on state funding, the number of student loans and scholarships, the number of students who use services of student boarding homes and restaurants, as well as the number of students who have completed PhD studies owing to state funding.

Further activities on developing documents of the Education Development Strategy for Serbia until 2020 primarily entail development of the action plan and definition of specific measures, designation of bodies in charge of activities, as well as deadlines and required funds for their realization. Implementation of the action plan is expected to bring about the realization of all objectives set out in this document. We believe that there is sufficient good will and necessary conditions for this endeavor, and that the ideas and the contents of the Strategy would not be just a dead letter, as was often the case with reform drafts in the history of education, culture and politics in Serbia.

Belgrade, April 2013

Prof. ŽARKO OBRADOVIĆ, PhD
Minister of Education, Science and Technological Development
Pursuant to Article 45 Paragraph 1 of the Law on Government (“Official Gazette of RS”, No. 55/05, 71/05 – correction, 101/07, 65/08, 16/11, 68/12 – CC and 72/12)

The Government has adopted the following

STRATEGY
For Education Development In Serbia 2020

PART ONE
CONTEXT, CONCEPT AND OBJECTIVES
OF THE STRATEGY

1. The Context of Education Development Strategy in Serbia by the Year 2020

This strategy deals with establishing goals, objectives, directions, tools and mechanisms for development of the education system in the Republic of Serbia in the next ten years; in other words, it endeavours to shape the development of this system in the best way known to us. The circumstances in which this strategy has been approached to are, almost in everything, different from those in which, during the modern era, education has been developed in Serbia. Two centuries ago, the Serbian education thrived on the waves of the Enlightenment shaped by scientific advances and emerging industrial revolution. Today, education in Serbia faces numerous challenges in scientific, humanistic, social and other developments, great technological changes, the real revolution, globalisation and general mobility of everything that can move, from the capital to the cultural patterns. With all the preserved layers of the past, the society in Serbia today is dramatically different from that of two centuries ago, and the circumstances in which the Republic of Serbia is developing today are even more different than those in which the modern Serbian state was created.

In such a constantly changing world, there is something very stable and characteristic recognised for the development of education in Serbia. Firstly, the economically poor society in Serbia has strived to modernise through the education of
population. It has been noted that families in Serbia literally sacrificed everything to enable their children to educate, often in foreign countries. This is very evident in the share the education costs have in the expenses of already poor households. Secondly, education in Serbia was very respected, teachers and university professors were, til nowadays, highly regarded. The school was invested into at high sacrifice. Thirdly, there were periods in which the Serbian government, very sensibly, educated young people at top European universities so that they could share with others what they had learned there upon return to the country. During the brutal wars and destitute war years, the system continued to implement its national mission. A serious national effort towards comprehensive literacy and raising awareness of the education in the country, with all ideological and manipulative motives, was also the expression of the national commitment to raising the general educational level of the population.

In the past about which we are talking here, there were about twenty reforms of the education system. Still, they were partial, and never of the system as a whole, even more rarely with a long-term view of the needs for reforms and with a good overview of the implications of those reforms. The largest number of reforms were directed towards the “remodelling” of the segments of the education system (plans, curricula, textbooks), and generally were guided by the internal needs of the education system. Few attempts have been made to understand the development of the education system from the standpoint of its mission and functions of the external world in which it operates and for which it exists; to observe the education system in general; to implement that observation and design its development with actual participation of the general public, particularly those most affected by the education; to conduct wide and competent public debates about education; to make those public debates critically constructive and substantiated; to make education system literally open to the community in which it operates; that it is not manipulated and used for purposes of satisfying the interests of certain groups; to create a contemporarily-educated population, creative, motivated to learn and capable of applying the gained knowledge. In the contemporary circumstances in the Republic of Serbia, the education system is introvert, isolated from its environment, shaped by commercial interests, subject to political influences, superficially altered mainly in order to satisfy all interests regardless of the long-term consequences of this way of solving the problem. The emergence of private education institutions, publicly explained as a contribution to improving the quality of education by strengthening the mechanisms of competition, is generated and managed in many cases by the interests of profit and lack of public and other demands regarding the quality of education. In the education system, a significant opposition emerged between the short-term economic interests on one hand, and the development mission of education, on the other. Tensions that characterise this opposition are some of the biggest obstacles to the further valid development of the education. All in all, nobody is satisfied with the current state
of the education system in the Republic of Serbia, and only a small number of key players is ready for a change.

Circumstances arising in the environment of the Republic of Serbia in the European Union (hereinafter referred to as “EU”), make clear that the country needs a very thoughtful, organised and high-quality development of education because it is one of the key conditions for the development of Serbia towards a society based on knowledge and capable of providing good employment opportunities to the population. These circumstances warn that, otherwise, the Republic of Serbia would remain on the European outskirts, with low competitiveness, little attractive to the investments in sectors that create new higher value, subject to further emigration of talented and creative people, and with silent capacities for the development of a democratic and equitable society. These circumstances call for a harmonisation of the education system in the Republic of Serbia with the European educational area.

The current circumstances dictate that all key aspects of the development of education in the Republic of Serbia should be perceived comprehensively and projected properly, with the projection based on the current state of the system, but driven by the life and future development needs of the society in Serbia. This generates the need to understand the modern world and direction in which its development is going, to identify reliably enough the desirable and feasible future of the Republic of Serbia and, with a view to achieving that vision, to design the development of the education system. In other words, to see as much as it is possible today what the Republic of Serbia should look like in the foreseeable future and what the education system should look like so that the future of Serbia be really feasible because its future can be valid only if it is based on the possession and use of knowledge.

The strategy for Education Development in Serbia by the year 2020 (hereinafter referred to as the “SEDS”) provides answers to the following questions:

1) What can and should be like the system of education in the Republic of Serbia by 2020 and beyond – a vision of desirable yet possible future state – so it could best meet the life and development needs of the citizens of the Republic of Serbia and the society on the whole by and after 2020 (the time horizon is marked as “2020 +”) and continue to grow in the correct direction in the very long term?

2) Which strategic policies, actions and measures can achieve such a vision of education starting from its current state (2012)?

3) Which relationships and interactions should be developed by the education system and other national systems (economy, culture, science, technological development, public service, administration, etc.) to achieve its goals and make the largest contribution to the development of society?
4) In which ways the education system in the Republic of Serbia can become (a) a competent part of the European area of education, especially the higher one, and (b) attractive for international cooperation and the provision of educational services (especially in higher education) in the direct environment of Serbia, in the Western Balkans and in Southeast Europe?

The SEDS should fulfill two main roles: it is (a) an integrated framework (basis) for the design of key laws, regulations and other regulatory instruments for the operation and development of education in the Republic of Serbia, and (b) the main strategic instrument by which the education system in the Republic of Serbia is efficiently and acceptably translated from the present to the desired and achievable state by 2020 and beyond.

The expert SEDS formulation should contain all the findings which can effectively and efficiently determine the Action Plan for its implementation.

2. The Concept of SEDS Formulation

The following elements are included in the SEDS:

1) **The mission** of the education system which expresses the purpose of the education from the external world’s point of view, i.e. expresses the key long-term roles of education for the needs of economic, social, scientific and technological, cultural and other developments in the society in general, and for the development of the creative and business potentials and quality of life of every citizen of the Republic of Serbia;

2) **The vision** of the education system development which indicates the desired and yet possible state which should be reached by 2020 + through a consistent implementation of its mission, starting from the current state of the system;

3) **The key development challenges** the education system will face on its way to achieving its vision and the decisions which the education system will make in response to these challenges;

4) **Strategic policies**, actions and measures, whose implementation causes the necessary changes in the education system and leads that system to the achievement of its vision (strategy in the narrow sense);

5) **Strategic relations** that the education system should develop with other systems in Serbia in order to accomplish its mission consistently and efficiently;

6) **Changes** that need to occur in the environment of the education system to ensure the conditions for the stability of its development towards achieving the vision.
The approach to the development (formulation) of the strategy includes the following:

1) **Holistic (system):** The analysis and strategy formulation of any part of the education system take into account its links to the other parts of the education system. Education is treated as a whole system (from nursery school to doctoral studies and lifelong learning); the analytical and other methods applied to the parts of the system are carried out taking into account the system as a whole. Hereby a coherent strategy for the development of the education system, whose parts are mutually reconciled is achieved;

2) **The openness of the system:** the SEDS is “oriented toward the outside world”, i.e. the education system is seen as open and in totality with all its interactions with the environment. The development of the education system is formulated from the perspective of its role (mission) that it has towards the environment;

3) **Intersectoral:** From the administrative point of view, the development of the education system is seen as a problem and the subject of several departments in the Republic of Serbia, in addition to the educational one. This approach stems from the foregoing observation of the education system as open and with an important social function;

4) **Realism supported by greater ambitions:** the SEDS is made to be realistic, but also ambitious. Realism means that it is possible, starting from the current situation, to bring the education system to the desired state within the planned period, by 2020 and beyond;

5) **Long-term outlook:** Although the time horizon of this strategy takes the year 2020 as its finishing line, it is formulated to take into account a longer period of time, based on long-term forecasts and it sets the direction of development so that it can continue without major alterations, and be updated after 2020;

6) **Avoiding compromises:** It is expected that the formulation of the strategy should be under strong pressure to make many compromises in order to satisfy even very opposed interests and perspectives. In developing a strategy, compromises are not accepted, but the best possible solutions for further education development are sought. This is the key reason why the approach to the formulation of this strategy is undertaken by experts;

7) **Development “driven by the future”:** the SEDS is formulated, first of all, by defining the vision of the future state of the education system and then, from the viewpoint of this vision, all the characteristics of the current situation are perceived (the interior and exterior of the system), and according to those findings, strategic policies, actions and
measures for achieving the vision are formulated. The goal is to develop an education system “driven by the future” and in no way “pushed by the past”.

The bases for the formulation of this strategy are:

1) The educational needs of the Republic of Serbia arising from the following assumptions:
   (1) the further development of the production system of Serbia must be swiftly based on knowledge, entrepreneurship of educated population, its own and transferred technological innovations without adverse impacts on the environment, market economy and international business, technical and other cooperations;
   (2) the international status and overall strategic position of the Republic of Serbia must be improved, in the first place by increasing the international competitiveness of the Serbian economy and investment attractiveness of its business and other areas; by persistent and dedicated preservation and cherishing of the cultural heritage and national identity; by developing a tolerant and cooperative attitude to other cultures, and by strengthening the contribution of culture to the overall quality of life of the Serbian citizens;
   (3) that the economy, science, culture, education and other activities in Serbia should join the common European area with the aim to become a competitive and productive element in the overall development aspirations pursued by Europe – briefly stated in the “Europe 2020”, to the knowledge-based economy while preserving environment;
   (4) to proceed with the development of a democratic and socially just, legally established, safe and developmentally responsible society in the Republic of Serbia;

2) The education system of the Republic of Serbia has a duty to timely, properly and efficiently educate the population of the Republic of Serbia in accordance with the expressed or identified developmental orientations toward sustainability and to meet the educational needs of all citizens of the Republic of Serbia throughout their lives. It follows that the education system assumes the role of a key development factor because well-educated population of the Republic of Serbia is a real resource both for the proper use of natural and other inherited resources of Serbia and for the development of new ones, especially those that will be based on the progress of science;

3) Depopulation trends that will characterise the foreseeable future of Serbia point to the conclusion that the development of the Republic
of Serbia cannot be based on the increase in the numbers of human resources (working-age population), but exclusively on raising creative and productive qualities of these resources, which is the task of the education. Even more so, because, in the foreseeable future, the emigration of high-quality working population from the Republic of Serbia is expected to continue to a greater or lesser extent, while no one can count on a significant immigration of such a population to the Republic of Serbia;

4) Substantial differences in the level of regional development in the Republic of Serbia and high unemployment rate cannot be reduced faster and significantly by the economy that is technologically outdated, based on low-skilled labour and with little newly-achieved value. Solving these problems in Serbia is feasible, especially in the long run, only through technological modernisation of production, more by the innovation of products than by the innovation of process, and by development of emerging manufacturing sectors. The initial condition for taking this direction in the further economic and other developments is to radically raise the level of education of the entire population in the Republic of Serbia, including environmental education in order to achieve sustainable development;

5) In order to find the best strategy for the development of the education system, in accordance with the above said, the system must become open to all other systems in the Republic of Serbia. This means that the strategy for the development of the education system should be oriented to and focused on its environment rather than its traditional tendency to be independent from the other systems, in which case its development strategy is dealing with its internal needs instead of the role it has in the outside world.

The SEDS structure has been derived from the structure of this system. The education system in the Republic of Serbia is made up of parts that have specific missions, i.e. purposes of existence within the entire education system and in the education environment. The education system as a whole is very large, wide and complex and, therefore, difficult to analyse and to allow the synthesis of its development strategy. To facilitate the formulation of the strategy, the comprehensive education system is, at first, broken down into parts that have specific educational mission. Those parts are called educational subsystems in the SEDS. Missions of subsystems are derived from the mission of the education system as a whole and are mutually reconciled, and education subsystem functions are derived from their mission, they are mutually reconciled and provide the functions of the education system as a whole.
The education system is, for the purpose of formulating the strategy, broken down into the following educational subsystems:

1. System of Early-Childhood Care and Pre-School Upbringing and Education
2. Primary Education;
3. General and Artistic Secondary Education;
4. Secondary Vocational Education;
5. Basic and Master Academic Studies;
6. Doctoral Studies;
7. Vocational Studies;
8. Teacher Education;
9. Adult Education.

The first four subsystems make the pre-university education, while the next four belong to the higher education system. Adult education is connected with many levels - from the primary all the way to the higher education.

All parts of pre-university education have common elements of development (that is, strategy). These elements are presented in the Common Framework of Pre-University Education Development. Also, all parts have elements of higher education development (i.e. of the strategy) that are common and make the Common Framework of Higher-Education Development.

Since the financing of education is one of the key instruments for assuring and regulating the functioning and development of education, education funding is treated as a separate subsystem for which a specific strategy is formulated.

From the aspect of the SEDS structure, the education system is broken down into ten parts for which individual, specific strategies are formulated, which strategies are connected in a concurrent whole during the formulation of the said individual strategies. This connection will be made by closely observing the concept of lifelong learning, which is the starting point for formulating SEDS.

So, the SEDS includes: two joint frameworks (for pre-university and higher education), development strategies for nine education subsystems and education funding strategies. The total of 12 comprehensive texts (reports) that describe the complete strategy.

3. The Objectives of Educational Development

The SEDS is an instrument that has the task to ensure the achievement of the mission and objectives of the system defined here from the beginning of the implementation of this strategy over the next two decades, with a corresponding adjustment of the strategy to the new circumstances of education development in the Republic of Serbia.
The education system is the most important element in the environmental and developmental infrastructure of each individual, the society and the state, because its overall effect determines the scope, quality and effects of the structure and use of all other systems and resources, and the overall quality of life and developmental potentials of individuals and communities. Therefore, the education system needs to be developed so it could perform its role in a timely, high-quality and effective manner, which is why the strategy of its development is developed, adopted and implemented.

The mission of the education system in the 21st-century Republic of Serbia is to provide the basic foundation for the life and development of the individual, society and state based on knowledge.

By full acceptance of (a) the role that education must play in the economic, cultural, social, political, democratic and other developments of the country and in improving the strategic, cooperative and competitive capacity and position of Serbia in the contemporary world, especially in the European Union, and (b) on the basis of the current state of education in Serbia, which is, in many ways, unsatisfactory, the following objectives of long-term development of education have been established and are binding for the education system in the whole and for every part of it:

1) raising the quality of the process and the outcomes of the education to the highest attainable level – one that stems from the scientific knowledge of the education and renowned educational practices;
2) increasing the coverage of the Serbian population on all levels of education, from pre-school education to lifelong learning;
3) reaching and maintaining the relevance of education, especially the form which is entirely or partly funded from public sources, by the harmonising the structure of the education system with the immediate and developmental needs of individuals, economic, social, cultural, research, education, public, administrative and other systems;
4) increasing the efficiency of the use of educational resources, that is, the completion of education on time, with minimal extension and reduced dropout.

In addition to these, for each part of the education system, additional, specific objectives for development have been determined. The goals and visions of education are the foundations on which the main problems in the current situation have been identified and the challenges posed to the education in Serbia. The vision of education development is a desirable, necessary and achievable state of the education system which is as adjusted as possible to the needs of the individuals (the citizens of the Republic of Serbia), the economic and other systems of the 2020 Republic of Serbia, with the task that this vision should remain on the course of proper education development for the distant future (about 50 years).
To achieve the goals of education development, specific strategic policies, actions and measures have been identified for each part of the education system, respectively.

As to increase the quality of the education system as a whole, the following strategic objectives have been identified:

1) Quality is the primary development goal at every level of education – from pre-school education to doctoral studies and adult education and lifelong learning. No other goal should be accomplished at the expense of quality;

2) Since the quality of teachers is undoubtedly the key factor in the quality of education, a special strategy for teacher education has been identified – in addition to the professional development, attention should be payed to their pedagogical, psychological and methodological education; to the development of the teaching career – from the introduction to the teacher’s work, through the acquisition, renewal and loss of licenses, marking system, monitoring, training, all the way to rewarding, professionalisation and ensuring reputation of the teaching profession;

3) Accreditation and quality assurance of all educational institutions and curricula will be carried out regularly, objectively and transparently. Appropriate standards and internal quality assurance systems will be developed and implemented. The culture of high-quality of educational institutions will be developed by using administrative, market and other appropriate mechanisms, taking into account the specificities of higher education institutions that educate personnel for the vocations of special social significance (army, police, etc.)

4) The increase in the public funding of education from the current 4.5% to 6.0% of gross domestic product (hereinafter referred to as the “GDP”) by 2020 will be directed primarily to ensuring and improving the resources and conditions that lead to the increase in the quality of education. For these purposes, a series of measures will be taken to improve the governance, management, administration, information systems and educational statistics.

To increase the coverage, relevance and effectiveness of education, a set of strategic objectives to be achieved by 2020 has been identified, with the following quantitative indicators of the level of achievement:

1) For children from six months to three years of age, the access to diversified programmes and services is increased and a 30%-coverage of children of that age is provided. All children from 4 to 5.5 years of age are provided with free use of abridged (half-day) high-quality educational programmes during the school year. For children aged 5.5
to 6.5, a full coverage is achieved through full-day and half-day forms of pre-school preparatory programmes;

2) All children of the statutory school age (at least 98% of them), regardless of their social, economic, health, regional, national, linguistic, ethnic, religious and other characteristics, are covered by high-quality primary education and upbringing, where the drop-out is not higher than 5% (the primary school is completed by 93% of the enrolled children);

3) At least 95% of those who completed the primary school (88% of the total population of that age) will enroll at some of the secondary schools. Four-year vocational schools enroll 39% of children, other secondary vocational schools enroll 10% of children, while grammar and artistic secondary schools enroll 39% of children of the specific age;

4) Four-year secondary vocational schools are completed by at least 95% of the enrolled (37% of children of the same age), and the same number goes for grammar schools (hereinafter referred to as comprehensive schools) (37% of children). We need to conduct all necessary analysis as quickly as possible, to determine the feasibility and possibility to make (a) the secondary education after primary school and (b) remaining in secondary schools – in case it is not completed – until the age of maturity mandatory after 2020;

5) 40% – 50% of those who complete four-year vocational schools (15% – 18.5% of children) and 95% of those who completed comprehensive schools (35% of children opt for higher education). The total number of children enrolled at higher-education institutions is at least 50%, which is probably 55% of the children in the same age group;

6) 70% of the enrolled students complete higher education (vocational or undergraduate studies), on time or with one year of delay so that the share of the highly-educated in a given age group, amounts to at least 35%, and most probably 38.5%, after the year 2020;

7) About 50% of students who graduate from the university continue their studies at the master level, while at least 10% of students who complete their master studies continue their education at the level of doctoral studies;

8) The minimum of 60% of doctoral students complete their studies within the given time frame, so, annually, at least 200 doctoral students per one million citizens complete their studies on time. At least 10% of the doctoral studies are shared with foreign universities;

9) At least 7% of the population is covered by some of the programmes of adult education and lifelong learning.
PART TWO
DEVELOPMENT STRATEGY
FOR PRE-UNIVERSITY EDUCATION

I. COMMON DEVELOPMENT FRAMEWORK
FOR PRE-UNIVERSITY EDUCATION

Part of the strategy regarding the pre-university education (primary, general and artistic secondary education and secondary vocational education) is closely associated with the strategic document *Education in Serbia: How to Achieve Better Results (Development Directions and Improvement of the Quality of Primary, Secondary General and Artistic Education 2010-2020, hereinafter referred to as “Directions”),* which was adopted by the National Education Council in 2010. Part of the strategy regarding the pre-university education and the Development Directions and Improvement of the Quality of Primary, Secondary General and Artistic Education 2010-2020 are strategically complementary documents and form a single whole.

The Directions define the general guidelines for policy development on pre-university levels of education, list innovations in the development of these levels of education in the modern world (particularly in the European Union) and specify professional reasons that justify the defined development directions. In parts related to the pre-university education, the SEDS goes a step further in specifying the planned development directions. Those parts define a set of strategic measures to be implemented in the next decade in order to achieve the mission related to the pre-university education in the Republic of Serbia. These strategic measures will be implemented through action plans that need to be prepared on the basis of SEDS.

The part of SEDS related to secondary vocational education is closely related to the *Vocational Education Development Strategy in the Republic of Serbia* (“Official Gazette of RS” No. 1/07).

*The Directions and Vocational Education Development Strategy in the Republic of Serbia* provide a general framework for the whole pre-university education. Therefore, this first part of pre-university education will especially
emphasise those SEDS components that are of particular importance to the concept of development strategy for pre-university education and those components that have not been developed sufficiently in the previously mentioned strategic documents.

The primary and secondary education system will foster a culture of safety and provide the knowledge needed for effective action to reduce the risk of disasters.

1. Governance and Management of Educational Institutions

**Management of institutions.** The management bodies of pre-school institutions and school boards include local government representatives, parents and employees of educational institutions. These bodies have existed in pre-university education for a very long time and their work is governed by laws and regulations. The following strategic measures shall be applied for further development of management bodies:

1) **De-politicisation of the management bodies.** This includes the elimination of political criteria in selecting members of the management bodies, eliminating the political pressure on the decisions of the management bodies and the agreement of political player to implement the adopted decisions in reality;

2) **Strengthening the role of management bodies in educational activities.** This includes a more significant role of the management bodies in the preparation and control of implementation of development plans and pre-school and school curricula, analyses of school success and student achievements within external evaluation systems of student achievement and making proposals for the improvement of educational activities;

3) **Strengthening the role of management bodies in establishing a two-way relationship of educational institutions and the local community and parents.** This should be a basic function of management bodies in order to improve the education of children in a given local community.

**Management of an institution (the Principal).** Based on our past experience, experiences in other countries and on the basis of fundamental scientific research, in the entire system of governance and management of educational institutions, the key role belongs to the Principal. His/her role is critical to the organisation and functioning of the institutions, the quality of the institution as a whole, the quality of teaching/learning and the quality of student achievement.

The existing legislation in the Republic of Serbia defines a wide range of principal’s powers as the head of an educational institution. However, in practice,
there is a large number of deviations from the theory in exercising this function. It is, therefore, necessary to take important strategic measures to improve the management system in order to achieve the strategic measures envisaged by the SEDS. The basic steps are as follows:

1) **De-politicisation of the election of Principals.** In practice, it is revealed that the influence of politics (and political parties) on the selection and work of principals is huge, which greatly affects the quality of management of the institution, because the said management does not comply with the professional standards and criteria. It is necessary to reach an agreement between the political parties and the state authorities to de-politicise the function of the principal;

2) **Better legal regulation of the function of the principal:** the legal regulations and by-laws must specify the primary roles of a principal. These changes need to emphasise the role of the principal as the pedagogical head of an educational institution: ensuring the functioning of the institution as a whole; the development of an identity and ethos of the institution; the role in defining and implementing the development plan and multi-year pre-school and school curricula; improvement of the system of professional development of teachers and educators, and in particular, the development within the institution; encouraging teamwork of teachers and educators in pre-school institutions; establishing two-way cooperation with local communities and parents in order to improve the quality of teaching/learning (especially extracurricular and out-of-school activities, including the school in the local community, prevention of deviant behaviour) and educational work and play in pre-school institutions;

3) **Training principals for their role.** Statutory and regulatory provisions need to create a system for specific training of principals for the complex roles they play; in the selection of a principal, to rely on the success of a candidate in the training and his/her previous professional experience, to build a system of continuous in-service training of principals;

4) **System for the evaluation of principal’s work.** The system should be specific and based on director’s success in his/her in-service training; it should depend on the success and reputation of the institution; it should depend on the success of the school in the external evaluation of schools as institutions; it should depend on students’ perception of the principal’s performance; and the evaluation should include parents and their associations, and the local community.
2. The Autonomy of the Institution

School autonomy is one of the factors that may play, under certain conditions, a major role in improving the quality of education and upbringing. School autonomy includes several fundamental aspects: financial autonomy, autonomy in management and pedagogical autonomy.

The problems related to the financial autonomy are solved within the system of education funding at all levels and are treated in a separate SEDS section. Issues of governance and management of institutions were discussed in the preceding paragraphs. In this part, the focus will be on the problems of pedagogical autonomy, i.e. autonomy in terms of curriculum; the document on education and upbringing issued by the school (school development plan, school curriculum, the annual curriculum); the organisation and the quality of teaching/learning; in-service teacher training in the school; and the status and rights of students. Strategic measures to increase the autonomy of the school are:

1) **School autonomy, education standards and evaluation.** The foundations of the autonomy are defined in *Directions*. School autonomy achieves its full meaning when combined with all categories of educational standards. Standards provide the conditions for the functioning of schools, the coherence of the education system and the achievement of the mission of educational institutions. Various evaluation systems are the means to check the implementation of educational standards. Within that framework, legal regulations need to create the conditions for a full pedagogical autonomy of schools, to encourage school initiative, entrepreneurial spirit, the quest for identity and ethos of each school;

2) **High degree of pedagogical autonomy.** Pedagogical autonomy includes: the right to define one part of the curriculum depending on local circumstances; to use maximum of local resources in the implementation of the mandatory general curriculum; the right to adapt a part of the school calendar to local conditions (changes in the dynamics of implementation of school curricula, but having in mind the achievement of the annual work plan, organisation of block schedules, organising subject-related classes in interdisciplinary topics); fully respecting local distinctiveness in the preparation of the development plan and multi-year curriculum, taking into account the characteristics of the local population; developing a system of in-service teacher training in the school on the as-needed basis;

3) **Autonomy and accountability.** School autonomy implies also school accountability. Accountability of the school is checked by the external evaluation system. Various evaluation systems are the way to check the implementation of educational standards. External evaluation system
should be based primarily on output variables, such as the quality of the school as an institution and student academic achievement in national and international evaluation systems;

4) **Autonomy and the environment in which the school operates.** Autonomy involves establishing rich two-way collaboration between the school and the local community. It involves the mobilisation of local social partners in order to promote the educational work of schools and local communities, the use of available local educational resources (physical, natural, cultural, institutional, human), and the performance of a variety of joint activities of the school and the local community: cultural, social, environmental, sports, humanitarian, economic (especially when it comes to secondary vocational education);

5) **The autonomy of teachers as pedagogical experts and specialists in the subject.** The autonomy of teachers in the teaching process is an integral part of school autonomy. This autonomy is based on the professionalisation of the teaching profession, which is defined in a separate section of SEDS (Part Four: Teacher Education). Autonomy refers to the right of teachers as professionals to independently design the teaching/learning process with responsibility for learning outcomes;

6) **Autonomy of students in the work of student parliament and in decision-making.**

II. EARLY CHILDHOOD CARE AND PRE-SCHOOL UPBRINGING AND EDUCATION

The mission of the system of pre-school social care children and pre-school upbringing and education is to create conditions for the benefit of children from birth to the beginning of school, to support their overall development, upbringing and socialisation of children, and to create the necessary conditions for early learning depending on the needs of families and children.

The main function of the system of social care and upbringing and education of pre-school children (hereinafter referred to as the “ECCPUE”) is to create conditions for high-quality life, especially (but not exclusively) in out-of-family environments and for full and harmonious development, education and socialisation of children in accordance with the needs of each child, and in the spirit of modern conceptions of children’s rights. In addition, this system has the following important functions:

1) creation of optimal conditions for playing, and for learning-oriented play as the most important development activity for pre-school children, and for other different forms of children activities;
2) children care, care for the health and nutrition of children;
3) creation of conditions for different physical, sports and artistic activities for children depending on children affinities;
4) contribution to the prevention of poverty and social exclusion through the implementation of inclusive education;
5) playing compensatory role for children who come from developmentally unfavourable backgrounds;
6) providing equal opportunities at the start of compulsory education and upbringing by preparing children for primary school;
7) ensuring the security of children and protection from violence, abuse and child manipulation
8) helping working parents by providing care for their children;
9) making an important contribution to female employment and emancipation as a part of an integrated policy to increase the birth rate;
10) providing diverse forms of support to families according to their specific needs in order to create conditions for full co-operation of the family and various pre-school institutions, curricula and services;
11) empowering families to, from a child’s birth, establish healthy, safe and beneficial conditions for its fulfilled life and development within a family environment and to be actively involved in the functioning and development of the system;
12) providing a starting point for life-long education through the evaluation of formal and non-formal forms of learning at the pre-school age.

A diversified system of pre-school institutions, curricula and services should be an instrument for achieving these complex functions. Each part of the system has a specific role in achieving those functions.

It follows from the definition of the basic functions of the system that the education sector is the main (leading) sector in the organisation of the system, but due to the multi-functionality of the system, a close inter-sectoral cooperation is needed, especially with the sectors of health and social policy. Those sectors, within their respective domains, define and implement appropriate professional standards. It is necessary to establish functional coordination mechanisms between different systems and to clearly define their roles at the national level.

1. The Vision of System Development

By the year 2020, a diversified and improved system of high-quality social care will have been implemented for children of pre-school age and in pre-school upbringing and education (from birth to the primary school).
Each family and child, depending on their needs, will be included into the system to the extent possible according to the abilities of the Republic of Serbia and the relevant local government.

All pre-school institutions and pre-school upbringing and education programmes shall be accredited according to the national system of accreditation which will apply transparent and unique accreditation procedures.

**The Coverage of Pre-School Children**

Every family and every child aged between six months and the school-going age will be provided with some form of diversified ECCPUE system that meets their needs:

1) The overall coverage of children from the age of four to the compulsory preparatory pre-school programme (hereinafter referred to as the “PPP”) has been doubled.

2) Much fairer system that will allow significantly greater coverage of all children, especially children from marginalised groups who will have priority in admission (children with disabilities and special needs, children who show emotional problems or behavioural problems and learning difficulties, children whose problems stem primarily from the socio-economic reasons or facts that they do not attend programmes in their mother tongue, especially Roma children, children from the poorest classes of society and from families with a low education level, children from rural areas);

3) From the age of four to the beginning of the compulsory PPP, the Republic of Serbia and local governments guarantee to each child, at least in the course of one year, free use of abridged (half-day) programmes to foster development and pre-school education and upbringing, depending on the needs of the family and child (approximately four hours a day, five days per week in the course of one school year).

4) Full coverage of children aged 5.5 to 6.5 years by the compulsory PPP.

**Quality**

The national system of accreditation guarantees high-quality care for children in pre-school education: the quality of the environment in which the children stay, the quality of equipment, didactic materials and toys, programmes, and the quality of pre-school institutions and programmes as a whole (a general positive climate, friendly environment for the children, and the treatment of children in terms of children’s rights), the quality of professional qualifications and a sufficient number of staff to work with the children. The high-quality educational practice implies that
the educational programme, educational and playing materials, methods of working with children (including centres of activities, free play and learning-oriented games), as well as the daily rhythm of balanced activities, promotion of a comprehensive child development, development of their creativity, critical thinking, early literacy and socialisation and creation of the conditions for a successful beginning of the primary education and creation of conditions for inclusive education of children with disabilities and special needs and other children who need additional support in the education system.

Efficiency

System efficiency is ensured, first of all, by diversified offers, that is, by development of different forms of child care and pre-school upbringing and education programmes (which include cheaper alternatives and flexible forms, not only the work of pre-school institutions) by organising pre-school programmes for children who do not attend regular pre-school institutions, as well, by adapting existing spaces, by providing occasional and temporary programmes and services according to the needs of the families and the children.

Efficiency is achieved through better coordination between different sectors (education, health and social policy) at the national and local levels and precise definition of costs borne by them.

Periodically (every three years) the costs of ECCPUE system are analysed to examine whether resources are used rationally and whether they are consistent with the strategic plan, in order to ensure the improvement of the quality and availability of institutions, programmes and services.

Relevance

Systematic analysis and evaluation of the economic, social, and educational effects of childhood care and education are conducted. These analyses are based on the indicators of the comprehensive development of children that will be defined in detail in the Action Plan for the implementation and monitoring of the SEDS effects. The effects of compulsory PPP are particularly analysed in order to ensure a more equitable start for all children enrolled in the primary school, a decrease in the primary school drop-out rates and increased success in the primary school.

All organisational forms (of pre-school institutions, programmes and services) are open to the child and his/her experience, the family, the local and wider community; they develop an upbringing and educational concept in which the child and his/her welfare, development, education, socialisation and learning play the central role. Constant exchange of information and cooperation between the relevant
participants in the upbringing and education process is ensured (parents/guardian, family, children, professionals employed in the system and the local community).

All organisational forms of the system use different solutions in order to increase their flexibility, to adapt their services in size, place, duration, manner of implementation and scope of the upbringing and educational programmes which meet the needs of potential users, especially of those from marginalised and vulnerable groups that have the biggest needs to be included in the system.

Apart from the appropriate use of its existing capacity, the system also uses the capacity of other institutions or facilities and other resources in the local community (education, health, social, cultural) where special and/or specialised programmes for children and families are implemented.

Laws and by-law instruments have clearly defined and allotted the competences of the central authorities and the local government bodies.

2. Current Situation in the Pre-School Upbringing and Education

The analysis of the situation indicates an alarming lack of uniform educational statistics and of a system for managing data on children; the data vary greatly, depending on the source and statistical method.

**Coverage of Pre-School Children**

The current system is a network of 159 pre-school institutions with 2,384 facilities, founded by local governments and 60 private institutions. Geographic distribution of the facilities is unfavourable, the distance of pre-school institutions from family homes (according to Multiple Indicator Cluster Survey, hereinafter referred to as “MICS 4”) in rural areas is twice as high as in the urban ones (urban – 1.1 km and rural – 2.2 km). Many poor municipalities do not have financial resources for developing a network of pre-school institutions, in many municipalities, the traffic infrastructure does not provide a possibility of increased accessibility to pre-school institutions. Investments in the construction of new pre-school institutions, as well as adaptation of other available space, are insufficient both at the national and local level (a somewhat better situation is to be found in Belgrade and Novi Sad).

Other, alternative organisational forms of pre-school upbringing and education, and special programmes for children, mainly implemented by private entities, non-government organisations and others, and mostly created in larger urban areas (Belgrade, Novi Sad, Nis) have not been integrated into the system so the education system does not have data on the number of children covered by these forms. In 2010, children between 0-6 years of age (505,404) constituted 7% of the total population in Serbia. The coverage of children of pre-school age (0.5
– 6 years) in pre-school institutions, for the school year 2009/2010, was 41.36% (Statistical Office of the Republic of Serbia, hereinafter referred to as “SORS”). According to the age group, in 2009/10, the coverage of children was as follows: children under 3 years of age made for 15%, 3-4 years old made for 34.80%, 4-5 years old made for 39.83%, while the coverage of children between the ages of 5.5–6.5 (compulsory PPP), in the same school year, was 87.82% (SORS) and according to the data of the Ministry of Education and Science (hereinafter referred to as the “MoES”) in 2010/11, this coverage was 96.07%.

According to the MoES data, in 2009/10, within 854 educational groups, 3,456 Roma children and 5,455 children of other national minorities were covered by the Preparatory Pre-school Programme. According to the SORS data for the same school year, only about 4,000 children with disabilities and special needs were included in pre-school education and upbringing, and the PPP included only 964 children from this category. Many children of early and pre-school age with disabilities and special needs were not identified and were not included in the system.

According to the 2010 MICS 4 data, the coverage of children under 5 years of age from mahalas and unhygienic Roma settlements remains extremely low and amounts to 8% (although it doubled if compared to 2005), and the PPP coverage of children belonging to the Roma minority is also insufficient and stands at 78%. Based on Living Standards Survey (SORS, 2008), the coverage of rural children between the ages of 3 to 5 is 14%, in case of the poorest families, the coverage is 7%, and 16% in case of children from families with low education level.

The main conclusions regarding the coverage of children are as follows: a) the coverage is low and it does not meet the needs of children and families; b) there is a significant lag in comparison to the EU countries and some former Yugoslav republics; c) the full coverage has not been ensured, not even by the compulsory PPP; d) the coverage is deeply unfair as the least coverage is provided to children from marginalised social groups for whom early developmental incentives are essential (thus, the Republic of Serbia has not achieved the first goal of the Education for All global programme).

Quality

The care and educational work in pre-school institutions are defined by the General Bases for Pre-school Programmes. Each institution creates its own operational pre-school programme, whose integral part is the Preparatory Pre-school Programme that is implemented under the Rules on the General Bases for Pre-school Programme (“Official Gazette of RS – Education Gazette” No. 14/06), and its compulsory duration was extended from 6 to 9 months in 2009. The
programmes have been implemented in Serbian language, the language of national minorities (except in Roma), occasionally bilingually (although the needs are greater), and in some private and non-formal institutions, in a foreign language. Pedagogical assistants supporting Roma children who do not speak the language in which the pre-school programme is implemented are not sufficiently represented in the pre-school institutions and other programmes.

The National Quality Standards and the System for Monitoring and Evaluation of Quality within the system are under-way (implementation is expected in 2013), as are the criteria and procedures for accreditation of pre-school institutions, upbringing and educational programmes and services. Care, upbringing and educational activities in pre-school institutions are carried out according to the established organisational forms: full-day (8-12 hrs/day, five days per week), half-day (4-6 hrs/day, three to five days per week), and more than one day (five days per week). Half of institutions (51%) offer full-day care, while 76% of children spend more than five hours in pre-school institutions; programmes which are shorter than eight hours are usually not offered to families, nor are programmes outside of the institution – in other areas and contexts (so-called “in-community” programmes, travelling programmes and teams, private nurseries, joint programmes for parents and children, programmes within the families, etc.).

In addition to not having developed an inclusive approach and not being receptive enough to the needs of the family and its direct and active involvement in the work of the institution, pre-school institutions are also not open to the community and the various different, potential participants in the upbringing and education (volunteers, representatives of the local community, cultural and sports institutions). Pre-school institutions do not seek additional sources of financing, which would allow them to extend their offer by developing new programmes and services.

At the same time, the commercial offers to families include other organisational forms of upbringing and educational work, so-called alternative programmes and services. They are founded by private and legal entities and civil society organisations, and they include adjusted foreign programmes and approaches (based on the Waldorf pedagogy, the Maria Montessori Model, Reggio Emilia Approach, the step by step methodology – for the child and the family), but also short-term programmes by local authors for encouraging certain areas of child development: for physical, creative, verbal and other development. These programmes are implemented through different organisational forms: playrooms, workshops, agencies, centres for children, counselling, foreign language schools, etc. They are not integrated into the system, nor is their quality monitored by the MoES. Such status of alternative programmes, a disparity in the quality witnessed in practice and a lack of mechanisms for
quality monitoring are neither in the best interest of the child nor of the society in general.

There are 11,087 teachers (for children between the ages of 3-6.5) and 3,314 nurses (for children between the ages of 0.5 to 3) employed in pre-school institutions. The employee structure includes 95% of women, which means that there is unsufficient representation of male educators and pre-school teachers, and also other profiles of masculine gender. Anyhow, this is the typical image of pre-school education and upbringing for children in developed countries, as well.

Efficiency

Numerous analyses (UNESCO, UNICEF, the World Bank, the OECD) indicate that investing in early upbringing and education provides significant economic savings in later educational cycles and a good start for the overall development of an individual.

There are no accurate data on the economic profitability of the PUE system in our country. The initial data from the UNICEF analysis of profitability within the pre-school education system in Serbia (launched in 2011 and still in progress), illustrates that there are regions with under-used institutional capacities, while in other regions, the capacities are used more than 100%, i.e. the number of children in educational groups is far above the legal pedagogical norm (some educational groups have over 50 registered children, and 3 teachers within the same educational space), whereby seriously jeopardizing the quality of care, upbringing and education, while at the same time reducing the safety of the children and endangering their personal and social development.

Local governments have the obligation to deal with the pre-school upbringing and education, but are not sufficiently trained to create and implement policies and programmes of ECCPUE. Their access to development planning of ECCPUE system is neither strategically oriented, based on demographic and economic data on and indicators of economic profitability, nor based on the current data on children and families, their needs and rights.

Relevance

It can be said that the existing system (accredited pre-school institutions and programmes) does not meet the actual needs of all pre-school children and their families, as it is least available to those children and families from socially vulnerable categories. Therefore, its contribution to the achievement of rights of the child and the family (to the high-quality early care, upbringing and education), to the development of a child’s capacities, the socialisation and full integration of children and families into the community, is lower than our society needs. Our country does not have evaluation studies which would illustrate what the effects
of ECCPUE system would be and how they would affect the enrollment in the primary school, poverty reduction, greater social inclusion, greater employment of women, etc.

3. SWOT Analysis Findings

The potentials of the ECCPUE system are, as follows: in the Republic of Serbia, the pre-school upbringing and education has a long tradition, there is an experience of good and high-quality practices, and professional potential which make a good basis for achieving the SEDS goals; the Law on Pre-School Upbringing and Education (“Official Gazette of RS” No. 18/10) and the Law on the Foundations of Education (“Official Gazette of RS” No. 72/09 and 52/11), hereinafter referred to as the “LFE”, are based on children’s rights and they open a space for the use of modern approaches to pre-school education. The introduction of compulsory PPP has increased the total coverage of children; the qualification structure is in line with the EU standards.

The ECCPUE internal weaknesses are: inadequate coverage of children with high-quality PUE programmes, especially of those in rural areas and from marginalised social groups; the network of institutions, their geographic distribution, the offer of programmes and services in the system are socially unjust; the enrollment policy is driven by inadequate social criteria, i.e. priority is given to children of working parents, not the children from socially vulnerable categories; there are no unique statistic data about children who are covered by the ECCPUE system; the system is mainly organised in the usual manner (full-day or half-day programmes), it lacks flexibility and alternative offers; the general bases of the PUE programmes, including PPP, are inconsistent; no system for quality standards and monitoring mechanisms has been established; a system for the accreditation of institutions, upbringing and educational programmes and services for the child and the family has not been established; there is a lack of required cooperation among the relevant sectors, and institutions relevant for the ECCPUE system.

The opportunities for the ECCPUE development are: providing legal possibilities for integrating private pre-school institutions, programmes and services into the system may increase the coverage of children, provided that the accreditation system for programmes and institutions is applied; existing resources of PUE system (staffing, spatial, financial) may be used in a better way for the diversification of the programmes and services; the current reform of the local self-governments can be used for a clear distribution of responsibilities and competences, as well as for the establishment of funding mechanisms from the state budget (earmarked transfers for the PUE).
The risks for ECCPUE development are: lack of public awareness, lack of knowledge among policy-makers and decision-makers about the importance of early childhood development for overall children development and long-term development of the country; lack of financial resources at the national and local levels (local governments are burdened with financial problems, which will limit the investment); local governments are insufficiently trained for the strategic development planning and utilisation of other sources of financing (eg EU funds); the problem is the distribution of responsibilities and financial resources between the relevant sectors (education, social protection, health, local government) at the national and local levels and underdeveloped inter-sectoral cooperation in creating education policies.

4. The Strategy for ECCPUE Development

The Main Challenges and Orientation of the Strategy

The main challenges in the development of ECCPUE system include insufficient coverage of children with pre-school upbringing and education, i.e. insufficient capacity of the system and insufficient diversification of programmes and services of pre-school upbringing and education. The coverage of children is faced with insufficiently developed network of pre-school institutions (especially in Central Serbia), its inadequate geographic distribution and, particularly, insufficient coverage of children from marginalised social groups (children in rural areas, poor children, Roma children, children with disabilities and special needs). The SEDS must primarily focus on providing access to high-quality pre-school education to all children since it has a long-term importance for development of children and the development of society as a whole (it affects the increase in the education-completion rates, increase in the social inclusion and development of economic parameters).

5. The Strategy for Achieving the Vision – Policy, Actions and Measures

General Policy

The main strategic policy by 2020 is to complete the preparation of a diversified ECCPUE system that will be able to meet the needs of families and children. In the future, the ECCPUE system will be made of various forms of pre-school programmes and services.

The national system includes pre-school institutions, programmes and services which differ by the functions/needs they fulfil and, thus, by their specific
purposes, duration, place of implementation, and professional staff who conduct their implementation. In terms of ownership, institutions, programmes and services may be: public, private, mixed, corporate, and organised by the civil sector. With a view to achieving this strategic orientation, the following measures will be implemented:

Integral parts of ECCPUE system will be the following:

1) care and education programmes for children from 0.5 to three years of age: half-day, full-day (the name adopted for this form – nursery school);
2) programmes for children from 3 to 5.5 years of age: half-day and full-day programmes, which can be implemented in pre-school institutions and in hospital groups (the name adopted for this form – kindergarten);
3) PPP mandatory for children one year before they start school: all-day and half-day (which can be implemented in pre-school institutions, schools and other adapted spaces in the local communities),
4) half-day pre-school programmes outside pre-school institutions (usually for four hours per day, which can be implemented in pre-school institutions, schools and other adapted spaces in the local communities);
5) weekly kindergartens (five days a week) for parents whose working schedules require this form of child care and education;
6) specialised and/or special programmes in pre-school institutions, after working hours of these institutions, for children from the local community who do not attend a pre-school institution or participate in a programme;
7) family nurseries;
8) travelling kindergartens;
9) travelling kindergarten teachers;
10) specialised programmes that encourage certain types of development (creativity – visual arts and music, diverse physical and sports activities);
11) specialised programmes for providing support to children and families from socially vulnerable categories in accordance with their needs (for children with disabilities and special needs, from remote areas, economically and socially deprived families, Roma);
12) early intervention programmes for children with existing developmental problems, chronic illnesses, disabilities, malnutrition, atypical behaviour;
13) programmes for a successful transition from the family to pre-school institutions and/or from pre-school institutions to primary schools, in accordance with the needs of the child, parents or institution;
14) recreational programmes;
15) playrooms;
16) various workshops for children;
17) libraries, playrooms;
18) parent counselling and/or “schools” for parents;
19) developmental counselling services for children with disabilities and special needs;
20) mobile teams to assist the family and children;
21) providing support in family conditions for children and families at risk;
22) all other organisational forms which will be created according to the needs of the family, local community and local government.

Specificities of and standards for the operation of these programmes and services are defined by laws and regulations in accordance with the national quality standards.

Pre-School Institutions

The backbone of the ECCPUE system is made of pre-school institutions. By its nature, this form of organisation is able to achieve almost all of the functions in the system as well as to provide integrated services. The main line of investment at the national level and the local government level must be directed toward spreading and optimising the network of institutions (this request is defined in strategic documents such as the National Action Plan for Children, the Millennium Development Goals and the Development of Directions and Improvement of the Quality of Pre-school, Primary, and General Secondary and Artistic Education 2010-2020). The network of these institutions must be expanded, particularly in the underdeveloped and rural areas.

In addition to the strengthening and/or optimisation of the network of preschool institutions, those institutions must undergo an internal transformation: they must develop and nurture an inclusive education policy; organisational flexibility; apply interactive and active methods of education which focus on the child; strive to implement the rights of the child; be open to the local community; organise programmes for the local children who are not covered by these institutions and establish extensive cooperation with parents and other social partners from the local community.

Also, the system will integrate all existing organisational forms of care and educational work with children, regardless of their founder, if previously accredited and compliant with all parameters consistent with the national standards of quality.
National and Local Level Competences

Laws and regulations precisely define the responsibilities of the central level (national) and local level (local governments) institutions in terms of: the establishment of pre-school institutions and establishment of programmes and services; funding (including capital investments); management of pre-school institutions; adoption of a work plan; accreditation of institutions and programmes; employees’ salaries in pre-school institutions; and hiring and dismissing employees.

Local Government ECCPUE Plan

Every local government defines its ECCPUE system for a specific planning period, which meets the needs of the families and children living within its territory in the best possible manner and will provide the financing and maintenance of the system. The local system is established in accordance with the determined needs of the family, the children and the local community and in agreement with all relevant social partners.

Basic Strategic Measures

1) Increasing the coverage of pre-school children;
2) Ensuring the quality within the system;
3) Increasing the efficiency of the system
4) Ensuring the relevance of the system.

Detailed elaboration of the method of implementation, of mechanisms and instruments for monitoring, reporting procedures, and assessment of the effects of the planned policy measures will be defined in the Action Plan for the SEDS implementation.

Coverage of Pre-School Children

Regarding this parameter, the development strategy needs to achieve two great objectives: to increase the coverage of children (depending on the needs of the family and children of a specific age) and to increase the fairness of the system (with greater coverage of children from marginalised and socially vulnerable groups and from underdeveloped areas). The plan to increase the coverage will be defined in the Action Plan for the implementation of SEDS and will conform with the EU 2020 strategy and other relevant international and national policies taking into account the possibilities of our country. Children aged 5.5 to 6.5 will be provided with a full coverage through full-day and half-day forms of PPP. All children from 4 to 5.5 years of age will be provided with free short (half-day)
programmes (approximately four hours a day, five days a week during the school year). Children from six months to three years of age and their families will have an increased access to programmes and services and coverage of children of this age will be provided in the amount of 30%. The main strategic measures to achieve these objectives are, as follows:

1) the construction of new pre-school institutions, especially in underdeveloped regions, and in rural areas, which may be achieved by:
   (1) securing funds at the national level (budgetary funds, favourable loans, donations) earmarked for underdeveloped regions and municipalities;
   (2) mobilising funds from local governments and other local partners (public and private business, donations and sponsorship, providing facilities or spaces which are not used otherwise, etc.);

2) adapting facilities which are otherwise not used in local communities (unused school, sports and cultural facilities, local community centres, areas in public and private buildings, etc) as examples of cheaper solutions. Initiatives for these adaptations should come from parents, local communities and local governments;

3) diversification of pre-school institutions, programmes and services based on the local ECCPUE system. The diversified system should create an opportunity for the coverage of all children depending on the needs of the family and specific children needs;

4) expanding activities of pre-school institutions to include children from the communities who do not attend pre-school institutions.

5) altering the registration policy for pre-school institutions so that children from defavoured social groups are given the advantage and securing funds for their free stay (funds will be provided by the local government);

6) by the end of the period referred to in these strategic measures, the local government (and when it is necessary with support of the national bodies) should guarantee the opportunity to each child between the ages of 4 to 5.5 to use the high-quality and accredited half-day programmes in or out of pre-school institution, free of charge.

7) undertaking all legal, regulatory and financial measures for full coverage of compulsory preparatory pre-school programme.

Quality

The ECCPUE system may achieve its purpose if a national quality system is developed in this field. The development of that system will be achieved through the following strategic measures:
1) defining the national quality standards for the conditions under which ECCPUE will be implemented, which include:
   (1) standards of quality of the physical space in which ECCPUE programmes are implemented;
   (2) quality standards applied to the equipment, didactic materials and toys;
   (3) defining conditions for health protection, the quality of food and safety of children (these standards are defined by the appropriate sectors).

2) quality standards for upbringing and educational programmes, which include:
   (1) defining integrated programmes which have been adjusted to the developmental features of children;
   (2) the essence of the educational programmes will be activities initiated by the teachers or the children, with emphasis placed on playful activities;
   (3) defining the basis for upbringing and education (a framework programme) at the national level; programme basis for the artistic pre-school education should be integrated into the curriculum of primary artistic education, and the responsibility for educational work with pre-school children in the field of arts should be left to art schools and their professional staff;
   (4) defining operational programmes for each pre-school institution, or for each local pre-school programme which will be harmonised with the local and cultural features and the needs of the children covered by the programme;
   (5) involving parents and representatives from the local government in the design and implementation of the programmes.

3) Quality standards for employees, which includes:
   (1) defining standards for the professional competences of teachers and professionals who work with children (these standards are defined in the section of the Strategy which refers to the education of teachers at all levels of education);
   (2) standards relating to the size of educational groups in particular age groups, and the ratio between children and educational staff, particularly for certain age groups;

4) Standards of quality of the upbringing and educational process, which include:
   (1) treating children in compliance with the rights of the child, respecting the individual characteristics of each child, their personality and cultural particularities and diversities among children;
(2) creation of a positive social and psychological climate within all programmes for pre-school children, enabling positive and friendly interaction between children and educational staff, which encourages children to be more independent and contributes to building a positive self-image of children and of the environment;

(3) Intensive cooperation with parents in the implementation of educational activities.

5) Pre-school institutions and programmes as a whole, respectively.

The parameters which determine the quality of the institutions and programme as a whole are: general organisation of activities within the institution/programme and the variety of activities (playful, research, social, creative, cultural, sports, recreational, leisure, optional) which provide each child with an opportunity to be involved in all processes and express their affinities and skills as much as possible, positive atmosphere in general, good social relations and interactions within the institution/programme, well-being and a feeling of satisfaction among children, involvement of families in the planning and development of the institution and programme, and involvement of local government representatives in the work of the institution.

The National Education Council defines and adopts all the abovementioned categories based on proposals of the relevant national experts and scientific institutions, and upon consultation with prominent experts. During the preparation of national quality standards, the participation of professional parent and teacher associations is mandatory.

The introduction of a national accreditation system for pre-school institutions and programmes, which is based on defining the abovementioned categories of quality standards. The accreditation system includes accurate and transparent accreditation procedures and a control system for the implementation of the procedure. Institutions in charge of the accreditation must be autonomous. The system of accreditation includes a procedure for the self-evaluation by pre-school institutions/programmes and the participation of parents in the process of accreditation.

*Increasing the Efficiency of the System*

The efficiency of the ECCPUE system is of special importance due to the economic situation in the country, the limitations of the public budget funds, and due to the need, in limited financial circumstances, to provide coverage for the greatest number of children. Strategic measures for increasing the efficiency of the system are, as follows:

1) Rational distribution of responsibilities between the national level and the local government level (this measure is defined in the SEDS section referring to the education funding);
2) Defining a fair participation in the funding from public sources (from the national and local government bodies) and private sources (parent participation). An integral part of this system is a fair system of subsidies for families from public funds on the basis of their economic status, including the free stay of children from some categories (from socially marginalised groups);

3) Precise definition of ECCPUE categories which will be free (for example, universal rights of all families to free half-day child care for children from four to five-and-a-half years of age) depending on the assessment of the Government of Serbia of the best interest of the state within this field.

4) A gradual introduction of public pre-school institutions and programmes funding on per-capita basis (per capita system) after careful piloting of implementation of the system.

5) Practical use of cheaper forms of ECCPUE with quality assurance (refurbishment of the existing facilities, more flexible alternative programmes and services, the use of locally available spatial, financial, institutional and human resources) and better coordination between the sectors of education, health, social policy and utility services at the local level.

Relevance

The relevance of the ECCPUE system is the result of its complex functions. Since there are no analyses of pedagogical, social and economic effects of ECCPUE system, it is necessary to improve the research practice, including: the organisation of systematic scientific research and evaluation studies to make decisions based on data and the establishment of a national system of indicators for monitoring the system. The possible areas of research are: effects of pre-school upbringing and education as a whole and, in particular, PPP for greater coverage of children from marginalised social groups by compulsory education, the reduction of drop-out rates of children in primary school and the success of children in primary school, the contribution of inclusive pre-school education, higher social integration of children from marginalised groups, long-term prevention of poverty, employment of women, etc. In order to successfully establish all strategic policies and measures and monitor their implementation with a view to further improvement and development of the system, it is necessary to strengthen the management structure within the system.

Due to the nature of the ECCPUE system and its multi-sectoral status, some changes in the wider area are of vital importance for the achievement of its complex goals. Therefore, the following measures are to be taken:

1) to perform the decentralisation and status change of local governments (preparations are in progress), especially in the social sector activities;
2) to adopt precise legislation which will define competences of federal authorities and local government bodies regarding the funding of the ECCPUE system, status of the teachers, quality standards, an accreditation system for pre-school institutions and programmes, employees’ salaries, conditions for hiring and dismissal, and similar.
3) to improve the legal regulation of public administration in order to precisely define the competences of particular sectors and inter-sectoral cooperation for the higher functionality of the ECCPUE system.

7. Necessary Strategic Interactions with Other Systems

The strategy of the ECCPUE system relies on the cooperation with other systems.

Intersectoral coordination and cooperation will include:

1) established mechanisms at national and local level for coordinated implementation of strategic policies and measures to achieve full efficiency, especially at the level of collection of relevant data on children and the preparation of valid educational statistics that will enable the development of planning system based on data; optimisation of the network of institutions, programmes and services; monitoring and measuring the effects of work in order to achieve equitable coverage; providing high-quality and appropriate educational impact on the child in accordance with the needs of the child and family;
2) institutional and programme adjustments in the health care system and the social welfare system are needed in order to develop interdisciplinary approaches and practices in the field of child care and pre-school upbringing and education, particularly through the inclusion of children;
3) intersectoral cooperation would have to be formalised through the establishment of national and local sustainability mechanisms (such as intersectoral cooperation agreements, bodies and working structures), in order to plan and develop integrated programmes and services in the community with customised offers to the child and family, especially in terms of specialised and specific programmes and services, which include the impact of all relevant sectors (both relevant institutions and management structures);
4) Institutional and programme adjustment in culture, art, and sports are necessary so as to support early development of children and PUE in a greater extent;
5) Cooperation of the police, the court system, the prosecution and the Commissioner for Equality is necessary in the prevention of risks and the creation of a safe environment and in protection against the neglect and abuse of children;
6) Also, the inclusion of technical and technological community in the formulation of mechanisms for the introduction of pre-school children in the world of science, in support to children’s curiosity and desire to discover and explore the natural phenomena and the world around them is very important.

Public Communication and Advocacy of Strategic Policies in the Public

In implementing the development strategy for the diversified ECCPUE system for pre-school children, a positive approach and support of the media are required, both through the realistic presentation of the social status of children of this age and the importance of their involvement in pre-school education programmes and services, and by promoting the fundamental values and principles on which the current policies are based within the system, and programmes and services for children and families, respectively.

Also, in this area, it is necessary to develop radio and television programmes and investigative journalism and reportage. Then it is necessary to have productions of educational, popular and research, scientific, cultural, artistic contents and programmes for children and parents, teachers and other employees in the system, all in accordance with the SEDS.

In addition, we need the strong support of the civil sector in the reduction of discrimination and in promoting and monitoring the rights of children and families in the areas of child care and pre-school upbringing and education.

III. PRIMARY EDUCATION

The Mission of primary education is to be the foundation of the entire education system and to provide high-quality education to all citizens.

The function of primary education is to provide basic literacy to students in all areas important for modern day living, to help them develop functional knowledge, skills, motivation for learning, views and values necessary for establishing national and cultural identity and to develop their basic cultural needs and habits, which will enable them to pursue further education, lifelong
learning and an active and constructive existence in the contemporary society.

1. The Vision of Primary Education Development

The key strategic features of this educational subsystem are: the **coverage of children by primary education**; the **quality** of education (the quality of conditions, teaching process, teachers, student achievement and the quality of schools as institutions); **efficiency** and **relevance**.

The basis for the formulation of the primary school strategy includes: projections of social and economic development in Serbia 2020, the documents *Serbia 2020* and *Europe 2020* which contain the vision for future development of Serbia and Europe in the next decade as a part of the general context in which the education process will evolve; *The Directions of Education Development in the Republic of Serbia by the Year 2020* where the key framework for the strategy of primary education development is provided; *The Millennium Development Goals*, (hereinafter referred to as “MDG”), an international and national programme which will focus on the enrollment in primary schools (which is monitored through three indicators: the rate of enrollment in primary school, the percentage of students who enter the first grade and finish the fifth grade, and the literacy rate in the 15-24 age group); and *Situational Analysis of the Network of Educational Institutions, Human Resources and Education Statistics in Serbia*, which offers relevant data on institutional and human resources in primary and secondary education, as well as an analysis of the situation in the education statistics, which is necessary for establishing the starting point of education in the Republic of Serbia.

By 2020, all boys and girls of the statutory school age (minimum 98% of the age group), regardless of their socio-economic, health, regional, national, language, ethnic, religious and other characteristics, are included in high-quality primary education and upbringing, where the dropout rate is not higher than 5% (i.e. primary school is completed by 93% of the age group), not only at the national level but also for categories of children from vulnerable groups (rural, Roma, destitute children and children with learning and developmental difficulties).

The primary education represents a good and encouraging environment for the development of children, in which pupils master high-quality knowledge and skills, key competences and basic literacy in all fields that are taught in the primary school, so that the knowledge can be connected and applied in further education and in everyday life.

Primary schools are institutions with a distinctive identity, they represent a good educational model to pupils due to their comprehensive work structure and diverse activities within the rich curricular and extra-curricular contents
(educational, scientific, cultural, sports, ecological, technical and entrepreneurial). They systematically and continuously cooperate with the local community and various relevant institutions with the view to providing their students with a good knowledge base, developing motivation for learning and intellectual work, as well as influencing the creation of a basis for the development of cultural needs and habits in the students.

2. The Current Situation in the Primary Education System

*Coverage of Students in the Primary Education System*

Although it has been more than 50 years (1958) since free compulsory primary education was introduced (hereinafter referred to as “PS”), still a significant number of citizens have not completed the primary school education (22%, acc. to the 2002 Census). All children are not covered by primary education: around 5% of an age group does not go to school (percentage of enrollment in PS for 2009 was 95.2%, according to SORS – Statistical Office of the Republic of Serbia, and 94.9% according to MICS 2010), without any difference in the gender (gender parity index 1.01 SORS, 2010; MICS 2010), but with differences among vulnerable groups. In rural areas, the dropout rate at the time of entrance is higher than average and, what is of greatest concern, it is increasing year after year: the coverage of children from rural areas has decreased from 81.15% in 2005 to 77.4% in 2009, and in 2008 the number of primary school children who enrolled in PS was 1.8% lower than in 2005 (MDG, 2009).

From all vulnerable groups, Roma children have the lowest rate of enrollment in PS. We do not have the accurate data on the number of Roma population in the country, but it is estimated that the cohort size of Roma children is around 25,000 and that 70% of them enroll in PS (MDG, 2009). The enrollment of Roma children in primary schools has increased in the 2002-2007 period from 56% to 73% (Living Standards Measurement Study, hereinafter referred to as the “LSMS”, 2007). According to MICS 2010, 78% of Roma children from segregated settlements enroll in PS. However, the fact that the number of Roma children who are enrolled in special schools has dropped from 8% to 6% (MDG, 2009) indicates their better coverage by the regular school system.

The dropout rate during primary school is high, although there is no accurate or precise data on it. The rate of children enrolled in the fifth grade is taken as an indicator in international reports (MDG, Laeken indicators, EUO). When we look at the national average, the situation has improved in the last five years, the dropout rate in the fifth grade has been reduced to below 1% (from 1.14% to 0.87%, MDG, 2009). However, this average obscures a serious problem of internal injustice of the system in which there is an upward trend of dropout rates among children from vulnerable groups, primarily of the rural and Roma
children, and there appears to be a difference between the girls and boys (a 1.2% lower rate of enrollment than the boys). In 2005, around 95% of children from urban and 92% of children from rural areas went to the fifth grade (MDG, 2006), and in 2008, according to estimates, the dropout rates among rural children was 14.25% and 50% among Roma children (MDG, 2009).

The rate of primary education completion is 95.2% (SORS, 2009), however, the methodology used for calculating this number is such that it represents how many children completed eighth grade, not how many of those who entered the first grade also completed the PS (no monitoring of the age group). The rate of primary education completion among the children from rural areas is significantly lower (74.14%, 2008), there is a tendency toward a fewer number of boys finishing the PS and an increase in the number of girls finishing the PS (MDG, 2009). An international research also points to the trend of decreased achievements among boys in education and a growing gap in the gender structure at education levels. The dropout rate among Roma children in primary school is drastic. According to the latest data on Roma children from segregated settlements, 78% of them enroll in primary school while only 34% complete it (MICS 2010). There are no reliable data on the rate of completion of PS for children with disabilities and special needs, there are data only on children who are in the system (Institute for Education Improvement), but not how many of them were left out of the system.

European documents emphasise that the dropout rate of children in primary education should be below 10%. The total dropout rate for primary education consists of children who do not enroll in PS, who do not enter the fifth grade and who do not complete PS, which is, according to the existing reports and estimates, between 10-15% of an age group, keeping in mind that it is significantly higher among children from vulnerable groups. This number should be added to the percentage of children who do not enroll in secondary schools, i.e. do not continue their education, which has been about 2% in the last couple of years. The fact that children from vulnerable categories are poorly prepared for school is one of the causes for the dropout rate (see the Early Childhood Care and Preschool Upbringing and Education section). The coverage of these children by preschool upbringing and education programme is low (coverage of three-year-olds in the Republic of Serbia is 34.80%, and four-year-olds is 39.83%, while in the districts of Central Serbia it goes down to 11%-25%, SORS, 2010). The European goal is to achieve 95% coverage of children in this age group by 2020. The total coverage by the compulsory PPP in 2009/10 was 87.82%, and it varied considerably by districts from 55% to 85% (SORS, 2010).

From the previous state (Federal Republic of Yugoslavia), we inherited a good primary-school network, approximately 60% of towns with 100 or more inhabitants in the Republic of Serbia have a school. However, the school network
has not been adapted to the numerous social changes (demographic, industrial, economic, and social) which have occurred in the surrounding area. The corrective mechanisms of the network are poorly developed: dormitories for primary school children do not exist (even in places where the existence of such permanent or temporary homes would be justified); the transportation of students has not been adequately regulated, nor have mechanisms or specific support measures been developed for children from vulnerable groups to continue with their education (scholarships, dormitories, travel expenses, ensuring conditions for practice and work at school, for example, musical instruments, etc). Due to the need for economic efficiency in education, a rationalisation was initiated, not the optimisation of the school network. In the last couple of years, within the MoES, there have been uncoordinated parallel activities on the optimisation of the network, without involving all the relevant partners and without the full participation of the local communities and their prior preparation for that task. The rationalisation of the network may lead to additional threats regarding the fairness of primary education and can adversely affect its already poor pedagogical efficiency.

The art education is implemented through the system of primary and secondary art schools. Primary art education includes music and ballet primary schools and is implemented in combination with the regular PS. There are 37 schools for primary music education, 31 primary and secondary music schools combined, while primary music schools cover pre-school music education, and primary and secondary education is being offered in 3 ballet schools. The total coverage of children by primary music education is 2.7%, while the European average is 10-15%. About 50% of the municipalities in the Republic of Serbia have no art school.

Quality

The quality of primary education is affected by the working conditions in the schools, both physical (buildings, space, and infrastructure) and equipment-wise (office equipment, library, didactic resources, auxiliary tools, instructive materials). For a school to have an impact on the student, the elementary conditions in the school must not be worse than those a student has at home (particularly when speaking of the elementary infrastructure), and the equipment should be such that the school is up-to-date with the trends and that it uses innovations in working with children. Even today, especially in rural areas, there are unsatisfactory working conditions (for example, half of the schools are not connected to the public sewers system). Only two-thirds of schools in the Republic of Serbia have libraries, and the problem is their selection and volume – small number of books (the average of 17 books per student), few new titles and other necessary books.
(methodological manuals, instructional material, dictionaries, encyclopedias, electronic data sources, etc). Since few satellite schools have libraries (regardless of their equipment and functionality), that means that in places where the need for additional educational stimulus is the highest (low social, cultural and economic level of the community, low educational level of the parents, lower and more difficult access to all educational, cultural and research facilities), it is least likely to be found. Through the “Digital School” project, which was launched by the Ministry in charge of telecommunications and information systems in 2008, about 95% of schools (2808) obtained a computer-equipped classroom. However, many schools, particularly in underdeveloped areas, still have no computers or Internet connections, nor do the children at home, particularly in rural areas. In rural areas, 38% of all households own a computer and Internet connection – mainly households with a monthly income of 600 euros and more (87.1%), and in case of households with an income of up to 300 euros – only 36.7% of households. The gap between the urban and rural areas is large and has slightly increased in comparison to 2010 (the rate of growth of number of computers in urban areas was 2.1%, but 1.4% in rural areas, SORS, 2011).

The curriculum is extensive and inflexible, it is applied uniformly both in schools with a large number of students per class and in combined classes. The concept of elective courses is not well-developed or implemented, current curriculum is without the possibility of choice either for the students or the schools. Programmes are still written as a list of topics and contents; there is little correlation between the subjects, which prevents content integration and thematic teaching; there is a permanent pressure on new contents to become school subjects. Some art disciplines (drama, ballet, film, creative industries, design, photography) are not included in the curriculum, they don’t appear either as a content or as a method of work in teaching or as extracurricular activities at the schools.

The presence of modern methods of work is extremely low at schools – lectures are dominant, while very little attention is paid to active learning, research methods, individualised classes and other methods which focus on students and which allow for greater student participation in the teaching process, in the development of their higher mental processes, in motivating them to learn, in training them for the functional application of knowledge, for further education and employment. Although these methods of work have been developed through various projects, some even have international verification, there is much difficulty in introducing them into the regular system, probably because they demand radical changes in understanding the nature of the teaching/learning process and the role of the teacher and the student. Due to the rationalisation the number of classes has been reduced and the number of students per class increased, which has had negative effects on pedagogical efficiency (too many students in a class is an obstacle for the implementation of modern methods of work and for the implementation of the inclusive approach).
Raising the quality of teachers is one of the most efficient means of improving the quality of education. Unfortunately, despite the appropriate qualification structure, the low level of teacher training in modern concepts of learning/teaching and in the achievement of the set goals and standards is evident. The practice is still dominated by the old concept of teacher education, there is a negative selection of teachers, uneven quality of training for future teachers at the university level, little practical work, insufficient psychological-pedagogical-methodological (PPM) training, absence of training for counselling, for work in multigrade classrooms and small schools; professional exams and exams for obtaining teaching licenses have been re-located from teaching schools, which has resulted in a smaller number of competent experts and a lower qualification level for the assessment of the psychological and pedagogical qualifications of future teachers. (see the Teacher Education part).

The concept of teacher training is problematic because the emphasis is on the input (points collected from seminars), and not on the output (effective implementation of training in practice). The concept of professional development of teachers has not been developed. In the nomenclature of professions, the teaching profession is not sufficiently defined, especially not in case of some professions which can be found in the European countries, such as a drama teacher, a drama and dance teacher, games and free-time teacher and the like. The norms for professional qualification of teachers have not been adjusted to the new titles nor has it been revised, the list of those who can teach a specific subject is steadily growing (as well as the requests of different faculties, other institutions and individuals). There are trade unions and professional associations, but there is no professional teachers’ organisation which would look into after important professional issues and which would collaborate with numerous teachers’ associations from Europe.

Numerous analyses show a persistently inadequate level of knowledge and skills children obtain at the PS, underdeveloped competences necessary for further education and daily life and low student motivation for learning and intellectual work. The achievements of our students at international assessments suggest that the quality of our education is below the international average, especially concerning the functional application of knowledge. For example, at TIMSS 2007, the average student achievement in the fields of natural sciences was 470, and in the field of mathematics 486, in comparison to the average of 500 pts. In comparison with the results at TIMSS 2003, student achievements have recorded a drop (486 – in comparison to the average of 473 and 477 – in comparison to the average of 466). On PISA tests, which check the applicability of the acquired knowledge and skills, our student achievements were lower than at TIMSS. In comparison to the OECD average of 500, students from Serbia averaged 60 points less, which is equal to the effect of slightly more than one school year in
OECD countries. The analysis of our student achievements by levels shows that an extremely small number of students is in the highest categories of achievements (in the two highest categories below 1% in the field of reading, around 1% in science and 3% in math) and a very large percentage of students is in the lowest categories (around 2/3 in the lowest two categories in all three fields). Around a third of all students fall into the category of functionally illiterate in the field of reading, which means that every third student in the Republic of Serbia has difficulties in reading complex texts, which is a significant obstacle to their further education.

On the last PISA test, our students achieved better results than on the previous one and the progress was higher than in other countries. Student achievements in these international tests are affected by several factors (e.g. preparation of students for this type of test, the possibility that the tasks in the tests largely conform to the programmes implemented in some countries, and not to the programmes in other countries, etc.), so the interpretation of results and drawing reliable conclusions require a deeper qualitative analysis of the data according to specific social and cultural contexts, especially when the conclusions refer to the country’s education policy. In this sense, the results on international tests should be seen as an important achievement indicator of the education system in a country, its strengths and weaknesses, and not as a mere comparison with the others.

Therefore, students complete PS without developing key competences, necessary and important for continued education and better orientation in their private and public life. In addition to insufficient functional, mathematical and scientific literacy, artistic and cultural literacy is almost completely ignored in primary education (which is an objective of the education according to the Law on Primary Education, Article 4, Paragraph 2). Pupils complete the PS, but they have not formed basic cultural needs and habits, needed to adopt values essential not only for living in the contemporary society, but for each citizen’s private and professional life.

Health and sports support to children’s development is very poor. Sports are only available to talented students, and despite being a part of regular school activities aimed at the physical development of children and an investment in their health, sports sections are paid for in private schools, many students are relieved of physical education while the objective needs are growing (a lot of sitting in school and at home, heavy bags on younger children, unhealthy fast food, etc).

The way of evaluating schools, teachers and students is not good and informative enough. It does not differentiate between those schools and teachers who work conscientiously, well and achieve results from those who only plod through their job. Student marks are indiscriminate and subjective (it is not uncommon that 2/3 of a class have excellent achievements, that the average mark of pupils in the primary school is above 4, while 3/4 of the students have very
good or excellent grades at the end of the primary school), and the evaluation has been reduced to assessing the success of reproducing what has been taught. The Institute for Evaluation of Education Quality has prepared standards and instruments for external evaluation of schools, which standards include seven different fields.

The quality of school textbooks has improved in the last decade although there are still many serious problems with their conception and composition. One of the main issues refers to the inadequate textbook quality standards on the basis of which the evaluation is currently carried out. In this field, we have a rich, internationally relevant expertise, but it has not been incorporated into the current solutions.

Upbringing is an inalienable and integral part of any education. The educational function of school permeates all its activities: from the manner of educating, through specific activities and content, to its culture, ethos and distinctive identity. The educational and socialising role of school has been neglected in the primary education. If the teaching style is predominantly lecturing, then replication with understanding of the learned material is assessed, marks are indiscriminate, with low validity and reliability. The school is turned towards a narrow cognitive aspect, not to the overall development of the student’s personality, there is no participation of the student in the teaching/learning process, and attention is not paid to the entire set of important objectives. It is clear that such a model, in the best case scenario, may produce a person with a good grasp of the facts but dependent, incapable of connecting and applying knowledge, cooperating with others, unskilled for team work, for taking on responsibilities, decision-making, identifying and problem solving, and with a low motivation for learning and intellectual work. Schools do not have a recognisable identity and poor general atmosphere pervades a large number of them (bad general climate, often poor interpersonal relations within the teachers’ collective, between students, students and teachers, teachers and school administration, the presence of violence in schools, a drop in ethical standards (teachers arriving to classes late, failure to meet the required number of class hours or reducing the same, a large number of student absences, low sense of belonging to the school among students). Extracurricular activities are poor, in some schools they are almost non-existent, and there are no educational activities on excursions, outdoor classes or recreational classes. Very often, a teacher’s work week is reduced to simple teaching. Very rarely are there additional and supplementary classes, which forces students to seek private tutoring. Schools often work in two shifts which does not leave enough time, or space for other activities at school, and the effort to physically merge schools with fewer students is still under way. Cultural and public school activities rarely take place in the local community (literary evenings, concerts, book promotions, exhibitions, humanitarian activities, volunteering, environmental protection,
etc.), and very rarely are there educationally powerful models of students’ work that existed in the past times, such as various children’s organisations (scouts, hikers, children’s associations and others), various clubs (eg young technicians), various actions of community service, junior sections of different organisations (cultural, sporting, social, humanitarian, health, environmental, technical, etc.). These forms of work allow transgeneration cooperation, cooperation with different partners outside of school, they offer the opportunity to discover and develop different interests and abilities of students, they organise academic learning and useful leisure time of children and youth.

There are many problems with the introduction of an inclusive approach in schools: local governments are rarely involved in the planning of coverage of children in the primary school and the inclusion of children with specific needs; low capacity of schools to identify internal obstacles and create an inclusive school development plan; a great resistance to inclusion; the approach to the problem is still medical rather than pedagogical (although the Rulebook on Additional Support to Education, Health and Social Services has been adopted (“Official Gazette of RS” No. 63/10); a predominantly lecturing approach to teaching, which does not leave room for an individualised approach; very poor external, institutionalised, professional assistance; parents do not participate in the decision-making process regarding their child; the existence of prejudice, particularly toward Roma children; people in education in general know little about the inclusion and do not understand it well; lack of education statistics on children with disabilities and special needs; the problem with continued education of these children after the PS (Radó, 2009; Radó, Lazetic, 2010); absence of systematic budgeting of resources necessary for the removal of construction and information-communication barriers in schools; lack of pedagogical assistants; insufficient application of individualised approach and adjustment of teaching to children’s needs.

The cooperation between schools and families is not based on a partnership, it is dominated by the old concept of informing and communicating with the parents when a problem arises. Schools are largely isolated (introverted), there is no cooperation with other educational, cultural and scientific institutions or with the local community. Local school plans usually include visits to cultural institutions, but there is no planned, organised cooperation with the established programme, objectives and manner of work incorporated into the work plans of both institutions. The same is with scientific institutions. Schools do not use local resources for educational purposes so young people do not have the opportunity to participate in the life of their own community and thus better understand their own community, to participate and become aware of their own social responsibilities as citizens, to nurture solidarity, various social competences and healthy life styles. Survey results show that local self-governments do not recognise the possibilities for cooperation between schools and cultural institutions.
School management is important for the achievement of its purposes. Unfortunately, school management is more often chosen based on political criteria than on educational criteria. Principals still do not receive training in modern management in education and are not accountable to the staff for the efficiency of school management.

Efficiency

Generally speaking, the system of primary education does not fulfill its primary mission, as evidenced by two key indicators: (1) incomplete coverage of children in primary education and high dropout rates – we have no systematic research on dropout rates in Serbia, the categories of children in which they are at the highest level, regional image of dropout rates, and the main reasons for dropping out; and (2) low effectiveness of primary education – an insufficient level of knowledge and skills, underdeveloped competences necessary for further education and daily life, and low student motivation for learning and intellectual work.

Low quality of knowledge and skills acquired by students in the primary school is also a problem for the economic development of the country (there is a positive correlation between educational achievements and the degree of economic development of a country).

Children from vulnerable categories do not have equal access to education and the negative social and economic factors seriously affect their dropping out of school, which is, further, the basis for increasing the depth and severity of poverty in rural areas rather than in urban areas, for increasing regional disparities and the trend of social exclusion in the country, which is contrary to European standards and trends. The fight against poverty and social exclusion is a key component of the social policy of EU member states, and one of the objectives of the Europe 2020 strategy. In the Republic of Serbia there are insufficient preventive measures and support mechanisms for vulnerable categories of children to prevent them from dropping out of school. Thus, there is a problem with the availability and justice of primary education, and that is a source for generating social exclusion, which, further, requires higher social benefits budget, because members of vulnerable groups are less skilled for employment and cannot take care of themselves and their families.

The system of art education of younger children is not efficient enough; there is insufficient coverage of children in terms of different forms of art education, both with a view to future artists and developing a general culture among the youth.
Relevance

The relevance of primary education is clear from its function as the cornerstone of the entire education process and it is a part of the system with a great return on investment and great social benefits. Given the relevance of this part of education, and in the hope of making Serbia more competitive in the wider sense of the word, it is obvious that something serious, not to say radical, must be done in order to improve the condition of the effects of primary education.

3. SWOT Analysis Findings

**Internal strengths** and potentials of primary education are as follows: free and compulsory primary education for all is guaranteed by the law and the Constitution, which is an essential precondition for raising the level of education for all citizens in the country; there is a school network for the implementation of this constitutional right; free, compulsory preparatory pre-school education has been introduced as a measure for preparing children for primary education and as a tool for increasing the coverage (particularly of children from vulnerable groups) and long-term increase of social inclusion; there is a sufficient number of teachers with appropriate qualifications for teaching in the primary education system; the infrastructure for publishing textbooks exists, as well as published, textbooks for all subjects; pedagogical and psychological services are available in most schools, and are an important mechanism of improving the quality of the teaching/learning process; standards for working in primary education are slowly being developed and introduced (the quality of work in educational institutions, student achievements, teacher’s competences, textbooks), although some of them need to be improved; in the previous decade, various educational programmes were developed and tested in order to improve PS education (initiators were NGOs, associations and certain international organisations) and many teachers attended these training programmes; almost all schools have IT-equipped classrooms.

Unfortunately, the list of weaknesses in the primary education system is longer: incomplete coverage of children by primary education, not all children are enrolled in the primary school while many drop out before the end, especially students from vulnerable categories (Roma children, children from rural areas); the school network does not comply with emerging conditions and, in resolving the issue of the network of primary institutions, the concept of rationalisation rather than optimisation is applied; poor conditions in schools, especially in rural areas, small schools and satellite schools; representation of modern methods of teaching is extremely low; teachers are not trained to apply modern concepts of learning/teaching and the new roles deriving from them; excessive burden on students and, yet, unsatisfactory level of knowledge and skills with which students
leave school; insufficient quality of school textbooks; the schools have been reduced only to teaching, extracurricular activities are rarely ever implemented; the upbringing role of schools is neglected; schools mainly do not represent a safe, high-quality and inspiring environment for the development of students; quality evaluation of schools and teachers is only formal; instructive and pedagogical supervision and advisory work in schools need to be improved; there are numerous problems in implementing the inclusion that may endanger the entire idea of inclusive approach in school; schools are quite isolated and introverted.

**Opportunities** which can support the development of the primary education vision are: projections of economic development in the next decade which see innovations as the central force for economic development; the existence of donor funds and EU funds which can enable the changes in primary education and beyond; the existence of mechanisms for increased support to education: corporate responsibility may be a mechanism for introducing compensatory and encouraging measures in education (e.g. providing transportation or transportation funds and accommodation to students who live in remote areas; funds which provide scholarship and awards to good students; refurbished and equipped schools and student dormitories; paying students to attend non-formal education institutions – camps, visits to scientific, cultural and educational institutions in the country and abroad, etc; tax policy may affect the expansion of socially responsible corporate behaviour and in this manner stimulate investment in schools, education and participation in international programmes which will help in resolving this problem; sensitising political parties to the importance of a good and high-quality education in the Republic of Serbia in the context of the debate about which plan to choose for the development of Serbia in the next period; time adjustment of strategy development in culture and education which allows for better coordination and implementation of measures for cooperation; eligibility for the admission of the Republic of Serbia to the EU is also an incentive for the implementation of measures which are in line with European measures.

**Serious threats** to improving the conditions in primary education are: general poverty in the country, deepening differences (severity and depth of poverty) between rural and urban areas, vulnerability of families with children, the country’s indebtedness, low GDP and a permanent budget deficit; total investments of Serbia in education, research and development in education are below average relative to the EU (3.5 % of GDP, compared to about 6% in OECD countries), especially in the absolute amount compared to the nominal amount of the GDP of developed countries (e.g. France allocates 100 billion, compared to Serbia’s 1 billion); the largest part of the funds allocated for education is used for salaries; due to frequent political changes there is a lack of continuity in implementing necessary changes in education; a great impact of daily politics on education and decisions made therein; inadequate appreciation of education in light of its
contribution to social development; challenges, which can be a trigger for development, but also a threat to the pedagogical efficiency of the system, include per capita funding and decentralisation of education; the education policy in the Republic of Serbia is not based on research (knowledge-based policy-making), and research in education is not recognised as a priority for the development of science in the next period (see Strategy for Science and Technological Development in the Republic of Serbia for the period of 2010 to 2015 (“Official Gazette of RS”, No. 13/10)); insufficient and inadequate correlation and compliance between institutions and individuals within the system of education (the MoES and its school administrations, the National Education Council, the Institute for the Improvement of Education, the Institute for Education Quality and Evaluation, institutes which deal with education, universities, teaching schools, vocational associations) and the lack of close cooperation between researchers, administrators, those who make educational policies and teachers, i.e. practitioners, which is one of the keys for a realistic and successful development of the education system and for creating good opportunities for learning.

4. The Primary Education Development Strategy

The Main Challenges and Orientation of the Strategy

There is a significant gap between the vision of the primary education and the current situation. Some of the issues can be solved more easily, eg how to increase the coverage of children and reduce the dropout rate in PS, while there is a much larger problem of repairing the effects of primary education, raising the quality of knowledge, skills and competences with which students leave school. Even when we have good and clear standards for student achievements, several substantial, closely linked problems remain. First of all, it is a question of teacher training for improved quality of work with students (concepts, programmes, practice, introduction to the work, continuous training), and in particular, teacher training in the spirit of a modern concept of teaching/learning (understanding the nature of the learning process, new roles of teachers and students, focusing on learning and those who learn, creating teaching situations that are encouraging and facilitate learning, choice of high-quality textbooks, cooperation with colleagues, monitoring and improvement of one’s own teaching process).

In addition to professionalisation and better preparation of teachers for work, it is necessary to create the conditions for the implementation of innovative knowledge and skills. Creating conditions means much more than simply equipping the schools. It refers to the numerous changes within, not only the schools, but the wider social community, from the values and attitude towards education, through prescribed work standards, to practical procedures and methods of work that will support the innovation for which we are preparing our teachers.
5. The Strategy for Achieving the Vision – Policy, Actions and Measures

Full Coverage of Children in Primary Education

The key policy in this regard is increasing the coverage of children from rural areas, Roma children and children with disabilities and special needs and reducing their PS dropout rate, i.e. ensuring the completion of primary school, for which the following measures are necessary:

1) Increase the coverage of 3-year olds and 4-year olds by high-quality pre-school programmes and coverage of all children by PPP, particularly children from vulnerable categories for whom school preparation is of the utmost importance. In order to do this, it is necessary to engage school management and teachers, in rural schools and local governments/municipalities in the monitoring of coverage and in active resolving of problems associated with the integration of all children. In places with no pre-school institutions for the implementation of pre-school programmes, school facilities can be used (the concept of the expanded role of schools in rural areas), as well as cultural centres or some other local institutions, but they must first be equipped and adapted for the stay of children in this age group.

2) Active monitoring of the transition to the 5th grade at the local level: engaging the local government, the regional school administration and the school in active monitoring of enrollment in primary school, transition of children into the 5th grade, the prevention and resolution of individual dropout cases. Systematic monitoring of children who are outside the system;

3) Monitoring age groups in educational statistics, for the purpose of an accurate assessment of the rate of primary school completion.

4) Developing the network’s remedial mechanisms: organisation of children’s stay, i.e. the existence of permanent, occasional or temporary dormitories for primary school students, the provision of transportation or adjustment of public transport, or transportation costs (paid or subsidized tickets) for children from remote areas and destitute families who must travel to school from the 5th grade, legislative regulation of distance learning, with quality control, especially for students who are hospitalised, or are outside of the education system, or in cases when, for some other reason, it is difficult for them to attend school regularly, and one of the conditions that would help increase access to high-quality education is a broadband Internet access to every household;

5) On the basis of data gathered from research of the PS dropout rates (categories of children, the regions, the main causes for dropping out),
adopting specific policies, measures and actions for long-term reduction of the dropout rates.

6) The PS network optimisation that largely respects educational, cultural and wider social reasons and that will guarantee the right to education to all categories of the population, and will be most economical and rational. Due to the heterogeneous morphology of primary schools there is no possibility for taking unified measures throughout the entire network, because the problems of particular categories of schools are very different. Therefore, the measures for optimisation must be taken according to the local characteristics, and not based on the national average. Small rural schools should be preserved wherever possible. They depend on the demographic situation in the community where they are located, but at the same time, they have an impact on the demographic situation (when a place is left without a school, it is immediately left without the population). This concept is supported by the use of extended school activities in rural and underdeveloped areas to make those schools become multi-functional centres (in addition to educational, they also assume other functions, e.g. cultural, administrative) and agents of development of local rural communities. Only those special schools which are necessary for specific categories of children should be kept (see the Education of Certain Categories of Students section). Special schools which remain open should become resource centres for providing assistance to regular schools, teachers and families in the implementation of the inclusive approach in schools in a municipality or region. Closing down schools for adult primary education and transferring that function to regular primary schools should be done in accordance with the concept of expanded school activities and with the concept of functional primary adult education;

7) The existence of an MoES team for monitoring and reporting on the situation in rural areas and in vulnerable categories of children (coverage, dropout rate, school completion and the quality of education). Creating an annual newsletter which will report on the situation and trends. Based on the analysis of conditions, systematic planning of the necessary financial, material and human resources necessary to provide children from vulnerable categories with additional support should be implemented and, thus, equal opportunities and access to high-quality primary education should be provided;

8) Systematic normative regulation of art education by preparing a separate document on art education, which would provide a concept of a coherent and comprehensive system for art education from the pre-
school to the university level. The document would address all relevant issues, from the establishment of art schools, development of a system for recognising talents, to the measures for greater coverage of children and the young by art education, and measures to provide accessibility to art education for all children, especially children in rural and underdeveloped areas and children from vulnerable groups. Increasing the accessibility of art education, the flexibility and openness of the system to all children who have such affinities is an action aimed at developing culture in general, building cultural needs and habits of the students.

Quality

Raising the quality is the most difficult problem when achieving the vision of primary education, and a key point because primary education sets the foundations for further education.

General Policy

Mechanisms for the protection of schools with the smaller number of children when introducing per capita funding. It is necessary to develop mechanisms for the protection of those schools, rural schools and schools in poor municipalities, as well as to fund the work with children with disabilities and special needs – there are different solutions in European countries, but the ratio is often 1:3 or 1:4, i.e. each such child in the classroom requires an investment of time, effort and funding as three or four children without disabilities and special needs. To begin with, funding should be checked on a test sample, and upon verification, it would be introduced into the entire system. Four-year schools that remain in the system should be exempt from the per capita funding mechanism.

The Quality of Teaching and Learning Conditions

Conditions in which schools operate are of multiple importance for the quality of their achievement. For teachers, this is one of the main factors of success in school. Improving conditions include:

1) Raising the quality of work in small, rural schools and multigrade classes, which means better conditions in education (decent infrastructure, hygienic standards and an appropriate security level, work equipment, didactic tools, assistive technologies, Internet connection); the termination of multi-grade classrooms; planning and administration activities adapted to the specific conditions, developing methodologi-
eral materials for working in specific conditions; greater inclusion of such contents in training programmes at teaching schools.

2) Defining standards for school premises and didactic tools, art and computer equipment, and defining the mechanisms of control of the application of these standards. The standards should provide conditions for single-shift work at schools, the implementation of various school activities and the implementation of different work methods, which is all necessary for the achievement of the primary education mission. Supplying the facilities with information and communication technologies would allow schools located in remote areas to implement part of the curriculum from a distance, which could raise the quality of the learning/teaching effects in those areas.

3) For the greatest effectiveness of pedagogical work as a whole, the number of students in a classroom, in every school, should be 22–25.

The Quality of Upbringing and Educational Plans and Programmes (Curricula)

1) Schools have three types of documents: a school development plan (which contains priorities for the next period); a 4-year school programme (which includes all aspects of curricular and extracurricular activities, as well as cooperation with other institutions and the local community); and an annual work plan of the school (which includes specific plans from the two previous documents for one year).

2) It is necessary to achieve an integrity of a complex structure of school activities given in school documents: curricular, extracurricular, elective, optional and out-of-school activities and school activities in the local community. Evaluation of the school work must also include extracurricular programmes. Diverse extracurricular programmes have been conceived as interdisciplinary, are included in the teacher’s working hours and student’s workload and are financed on the basis of the school-work programme. A part of the educational programmes can be implemented through these activities, which differ in their approach and method, and, as such, are less burden some for students, regardless of the time spent at school. In-service teacher training must also include training for extracurricular activities. Students should not pay for the participation in sections, optional and extracurricular activities, as to avoid discrimination of students from poor social and cultural backgrounds.

3) A revision of educational programmes in order to ensure their contemporariness, functionality, life and social relevance. The main outcome of education is to acquire basic knowledge structures in certain
fields, which means the inclusion of those contents in the programme that make the system of knowledge, methods, and specific patterns of thinking in every important area of human knowledge. Programmes should include a representative sample selected from all the major achievements of all major cultural and scientific fields, the knowledge, skills and competences that are essential, unavoidable and which express the basic structure of knowledge and specific patterns of thinking, acting, and the value of each of these domains represented in the education programme at some level or in some form of education. This knowledge, as a part of an organised system of knowledge, may be the only landmark and an intellectual framework for the selection and design of numerous new pieces of information we are facing on a daily basis and for possible changes in the curriculum;

4) Developing educational functions of the school through: the way of educating students (selection and quality of programmes, methods of work, the teacher as a role model); extracurricular and free activities for students, which by their nature and method of implementation offer a system of values and patterns of behaviour; specific opportunities at school (e.g., experimental farms, workshops, student cooperatives) that significantly affect the students' attitude towards work. With its entire work, the mode of organisation and operation and collaboration with other institutions, organisations, parents and local authorities, the school sends a strong educational message to students;

5) The school particularly takes care of the physical development of all students, and in addition to physical education classes, the school organises a comprehensive sports life in which all students are included in accordance with their abilities and preferences. The school itself or in collaboration with other institutions and organisations organises activities for the development of healthy lifestyles;

6) Introducing single shifts at schools (whenever conditions permit it), and in the time and space which become available, organising diversified types of high-quality extracurricular school activities for the students. Only such broad school activities can achieve the educational and develop and enhance the upbringing purposes of schools. In addition, extended stays at school increase the security of the children and act as a preventive measure against the occurrence of socially undesirable forms of behaviour. Where single shifts are not possible, extracurricular activities will be conducted in public institutions within the local community.

7) Providing a different structure of and time schedule in the school week for teachers and students. Teachers and students stay in school not only
during the course of regular class hours (e.g. 8–16), but should also participate in other activities according to the programme of school activities. In addition to classes and extracurricular activities, students have the time needed for studying and consulting with teachers, as well as for obligatory sports and recreational activities and cultural and entertainment activities.

8) The number of mandatory lessons for students must not exceed 25 hours per week (in lower grades, up to 20 hours) so as to allow them enough time for other forms of school activities. Student load depends on several factors (extent and complexity of the programme, the method of teacher’s work, school work organisation, working conditions, etc.), but the number of lessons of regular teaching is an important factor in the said load. Activities of different types (different types of extracurricular activities), different contents and methods of work, despite time investment, are not tiring and contribute to the development of children;

9) The introduction of elective courses according to the needs and conditions, which contribute to the achievement of the upbringing and educational objectives of the school and achievement of the primary education mission. Elective courses curricula are made by teachers in cooperation with the professional staff, the school management and, where appropriate, with the relevant partners from the local community, and in consultation with the students and parents. The curricula should be interdisciplinary and should go beyond the subject division; they should connect knowledge and skills from various fields, develop general culture and be socially relevant, which would encourage motivation and cognitive orientation and have educational effect on students;

10) The flexibility of the programme: teachers have autonomy in the selection of parts of teaching contents (which do not exceed 10% of the total workload) and in adjusting the contents to the conditions in which they work, to the characteristics of their students and the specifics of the local environment. The objectives of that part of the teaching process contribute to the achievement of the objectives of a subject. In addition to providing the teachers with autonomy in school, continued support and assistance are necessary for its implementation, and it is necessary to define how to verify the adequacy and appropriateness of those parts of the curricula conceived by teachers in school;

11) The school work plan also provides for a programme for active out-of-school learning, which will be carried out at least once a year, according to the predetermined programme and through cooperation with
relevant institutions throughout the country (they can be connected with rural and other schools which implement educational programmes in tourism as a part of their extra-curricular activities, or related programmes suitable for the application of active learning in non-school conditions).

The Quality of the Teaching and Learning Processes

1) The school programme allows the use of various student-based and learning-based teaching/learning methods (good teaching styles, creative and cultural activities, independent work by students, class projects, laboratory and field exercises, etc). As a part of the regular teaching, school libraries and media libraries are extensively used for learning and implementing relevant student activities in specific subjects and media literacy. Libraries and librarians have to be resource centres, trained in the use of different sources of knowledge, and should, thus, help teachers and students in teaching and extracurricular activities. With the aim of developing innovations, knowledge, creativity, flexibility in thinking, tolerance for diversity, openness of the mind, problem solving abilities, connecting schools with real-life knowledge and skills and efficient cooperation with others are necessary, and, therefore, the potential use of art education in other academic disciplines should be developed. This will encourage the creative and innovative capacities of individuals, encourage them to form an open and flexible attitude and develop the creative capacity of the society. Various methods of work allow better individualisation of teaching, meeting the specific needs of students, whether of the talented and gifted students or students with disabilities and special needs. Without modern work methods, it is impossible to conceive the further development of the country on principles of intelligent, sustainable and inclusive development, to develop competences necessary for life in the contemporary society, or to train the work force adaptable to technological changes and new forms of organisation of work and to contribute to an increase in productivity, competitiveness, economic growth and employment rates;

2) The benefits of information-communication technologies (ICT) will be utilised, as well as different forms of on-line learning (electronic conferences, subject blogs, discussion forums, electronic testing, etc.). Possibilities and conditions for the use of some forms of distance learning at this age should also be examined, primarily in specific circumstances;
3) Through all curricular and extracurricular activities, as a key to all further learning, meaningful actions to increase student competences in the field of reading, functional literacy, have been designed and are being implemented.

4) The quality of textbooks and instructional material is assured through their assessment based on the valid and verifiable standards for textbook quality (electronic, audio, and other forms of textbooks). Textbook sets are created and differ according to specific subjects because they allow the optimal engagement of students in accordance with the nature of the subject. Schools have their own textbook funds which include a variety of available textbooks.

5) Development of the existing and introduction of new teaching methods specific to art subjects at the University of Art and the training of teachers in this group of subjects in primary school is very important because it lays the foundation for the recognition of artistic tendencies in children, develops an understanding of different cultures and cultural expressions and the use of culture in the private and professional life;

6) Support mechanisms for the inclusive approach in schools: further education of teachers towards understanding the inclusive approach, through training and through the programmes offered at teaching schools; cooperation between the Ministries of Education, Health, Social Affairs and Public Administration and local governments in monitoring and improving the implementation of the inclusive approach and informing the public of the same; obtaining systematic assistance from professional staff organised in aid centres and mobile teams; establishing a network of institutions and partners in local communities for informing and dealing with problems which may arise; planning and providing administrative, financial and personnel support for the planned activities;

7) The introduction of high-quality monitoring of pedagogical and psychological services in schools. A professional service is an important support system for improving the quality of work in schools and all educational innovations must include this service (training for implementation, monitoring, innovation assessment and work with school employees). Schools only employ one psychologist and/or pedagogue so they need help in the introduction to the work, support during work, quality control of their work and occasional innovation in the work concept.
**The Quality of Teachers**

1) The quality of teachers is secured through the system for professional development of teachers. All relevant issues on the quality of teachers are defined in the Teacher Education part.

2) Teacher training in the application of active learning methods, using information-communication technologies and other assistive technologies (in the work with children with disabilities and special needs) is performed through initial education and teacher training systems. During the assessment of a teacher’s performance, various methods of teaching/learning used to achieve the objectives of the subject, in curricular and extracurricular activities, are assessed.

**The Quality of Student Educational Achievements**

1) The introduction of new ways of evaluation of educational achievements and effects: the application of new methods for assessing students based on standards of achievement; the final exam that checks the meeting of those standards of achievement; perfecting the system of national tests of educational achievements and further participation in international tests of educational achievements; analysis of the results achieved with a view to taking actions for the improvement of the educational process; implementation of measures for training schools in the preparation of school development plans; systematic implementation of a school self-evaluation system; assessment of schools and teachers must distinguish between those who work conscientiously, diligently, well and who achieve results with their students from those who do not.

2) Student achievement is determined by different types of examinations, not just testing. Testing allows more objective evaluation and comparison with others, but does not apply in all cases and does not speak about what students have learned, but only how much they have learned in relation to others in the sample. Evaluation must be in accordance with the nature of the subject and its objectives. It is necessary to develop specific aspects of the evaluation of various extracurricular activities and competences;

3) Adjustment and improvement of the existing quality standards of student achievements in individual subjects.

4) At the end of the primary education, there is the final examination, whose main function is to make the national balance of the effects of primary education, to reversibly affect the teaching/learning process in primary school and to allow the differentiation of the secondary school
enrollment. It is necessary to develop the concept of “small matura” which will provide these functions and harmonise it with the concept of entrance exams for secondary school.

Development of School as the Public Service

1) All the employees in a school together with the students should work on building the school identity. Various school activities contribute to the development of a specific, recognisable profile of the school in the educational, cultural, sports, scientific, humanitarian, environmental, and technical-technological terms. The implementation of all curricular and extra-curricular activities at school needs to develop students’ constructive communication and cooperation, mutual tolerance, openness, flexibility, honesty, solidarity and sense of community, work on joint activities and taking responsibility for achieving certain goals. Building the identity of the school can be backed up by building virtual educational networks, i.e. social networks of teachers and students of a certain school, which can be used for different types of safe collaboration and sharing in curricular or extracurricular and, especially, social activities. Students can be actively involved in the maintenance and development of these networks, which further connects them with the school and the life in it. Working on such a network may have an active educational impact on students through the development of cultural behaviours and actions within the network, as well as on the moral development of the students: raising awareness of what plagiarism is, what the observation of copyright and related rights is, and similar. This is an additional mechanism to create a safe, educational and developmentally stimulating environment for the students at school. Visual appearance of the school would contribute to the recognisable identity of the school, from the aesthetic and functional design of the school buildings and premises (in which students can participate), to the additional role of providing different school spaces (libraries, halls, corridors, entrance assembly halls, schoolyard) for a specific purpose, which affects the development of aesthetics in students, and sends an important message about the openness and flexibility of mind, that is, the need not be a slave to a common fixed solution and to perceive things from various angles;

2) Including the functioning of school as an institution in the external evaluation of the school. For the evaluation of school’s work, the assessment of the pedagogical added value is central, i.e. the specific contribution of the school to the development and education of students.
(disregarding the effect of students’ abilities, good home and social circumstances, or work with tutors);

3) All the employees, together with the students, should define internal rules of conduct at school. Clear, precise rules which everyone will abide by will increase the level of security at school and contribute to the development of constructive communication, student participation and good mutual relations. There is also a system of measures to support the development of a student’s sense of belonging to school. Schools provide various forms of student gatherings after school hours (e.g. sports events, leisure activities, school alumni, interschool festivals, competitions, virtual networks of students and teachers of a certain school, etc.), as well as the communication of the former and current students.

4) Expanding the cooperation of primary schools with cultural, educational, scientific, sports, environmental and other institutions and organisations (e.g. children’s cultural centres, organisations, scouts, hikers, theatre, music and ballet groups, primary music and ballet schools, science festivals, organisations of persons with disabilities, organisations that operate on the local, regional and national level, and so on). Different institutions serve as resources for educational work. Cooperation programmes include clearly defined and elaborated objectives, the form and contents of cooperation, as well as a model for monitoring and evaluation of quality and the effects of cooperation. Support mechanisms for the implementation of the cooperation have been developed (e.g. training and professional development of the staff in cultural institutions for educational programmes, development of programmes, spatial planning and preparation of materials for the implementation of the programmes, etc). These cooperation programmes are ideal for connecting with career guidance and counselling in schools;

5) Schools cooperate with the local government, all of them have cultural and public activities which meet the local needs, the infrastructure and the social and cultural context. It is a two-way cooperation: the school does not operate in isolation but in a specific social and cultural environment on which it should make an impact. But conversely, the local government should take care of the schools in its territory, their connection and networking, improving their quality of work and long-term planning and development of education and its links with the local economy, culture, science, ecology, sports, health and humanitarian and social conditions;
6) Professional management of school (see the Common Framework for Pre-University Education part): the election of principals should be carried out at school; principals should be elected by the teaching staff on the basis of the work programme they offer, which should be verified internally and externally and when accepted, it should be implemented by the entire school staff in the planned period. Principals must undergo a training for the complex roles they have, and the system of continuous professional development has been established for them. Their work is monitored, measured and evaluated. The evaluation of principals is a specific component of the evaluation of the school. According to the new research, principals should be pedagogical leaders, people who are familiar with the nature and organisation of the teaching/learning process, as the results show a connection between school management and student achievements;

7) The school board, in addition to the supervisory role, also has a developmental role, should promote the school and assist in raising the quality of work and building a professional identity of school. Since the school board includes representatives of local government, this is also a way of developing and supporting various forms of cooperation among the schools in the local community;

8) A new concept is introduced into schools the partnership between schools and parents/guardians. That partnership will be implemented through various methods of parental/guardian involvement in the life of the school, in the school decision-making process, in defining specific objectives and practices which will correspond to the specific conditions of the families and schools, and in creating a school culture and environment that will be most beneficial to students. Home visits to families are an important measure aimed at getting to know the conditions in which a child lives, at a better cooperation between families and schools and the implementation of the affective role of teachers at school.

9) The programme of career guidance and counselling of students in the primary school includes initial information about the profession and career, especially in the final grades, and includes: the personal development of students (understanding themselves and the impact on their own development; recognising the stereotypical image of the profession, people and the fields of work and creating a positive attitude towards all tasks and fields of work; building a positive self-image and self-esteem; developing the ability to make realistic decisions about education and career path); researching opportunities for learning and employment (using appropriate terms and organising information
about the employment world; recognising that work is more than paid employment; using obtained career information in accordance with the needs of students); planning and management of students’ career, i.e. developing a realistic attitude towards career opportunities after completing primary school (see the Strategy for Career Guidance and Counselling in the Republic of Serbia (“Official Gazette of RS”, No. 16/10));

10) The school, along with parents, the local community, local government, the MoES and/or other partners aims to provide students with one meal a day;

11) The schools have defined rules for accepting material support (sponsorship, donations, etc). The teaching staff collective, together with professional services and the school officials, shall decide on allocating the obtained funds, taking into account the request of the donor regarding the purpose of the funds (e.g. library equipment, reading room, office, building repairs, etc.). Individual classes, teachers or students cannot be designated as the recipients of the obtained funds.

12) Schools create conditions for the development and introduction of educational innovations. Schools should be involved in projects, and should be capable of carrying out small research and studying activities and of the improvement of their own practice.

6. Necessary Changes in the Primary Education Environment

The creation of a general policy for primary education should be achieved through coordinated work of the institutions responsible for the management and development of education (the Ministry of Education and Science, the Institute for Improvement of Education, the Institute for Education Quality and Assessment and the National Education Council), whose representatives should hold joint meetings once in three months, where they would monitor the implementation of general policies and measures from the Strategy for Primary Education.

Education and science should be priorities for investment and development in Serbia in the upcoming decade. The future development of the country relies on the validity of the priorities chosen for the following decade.

Introducing permanent research in education and areas of intersectoral cooperation (education and culture, education and science, education and finance, education and work and social protection, etc). Research on education and intersectoral cooperation should be among the priorities in scientific development in the field of social research in the Republic of Serbia. The results of the research should be an important element in the creation and development of education policy in the country. Systemic support of the international, and, in particular, of
the regional cooperation projects is very much needed, as well as a systemic offer of developed high-quality education projects to the neighboring countries and beyond, either through Ministries or through the offices of various international organisations (UNICEF, OSCE, UNDP and others), or through the cooperation of universities and research organisations (TEMPUS projects, etc.).

Development of measures in order to change the attitude of the media towards education. One should require the educational programme to regain its status on the national television; the MoES must take care of how the education is reported about in the media, therefore, it is necessary to develop this aspect and to appoint a specially-educated person in the MoES for the planned and systematic (and not) coverage of education in the media, especially for the so-called crisis management (in case of injuries, accidents, abuse, and other serious violations in the schools and faculties). It is necessary to develop different mechanisms to promote the education in the public.

7. Strategic Interactions of Primary Education with Other Systems

A cooperation between PPP teachers and first-grade teachers should be developed in order to start the education of each child as successfully as possible.

Some of the tasks includes agreeing with the secondary education on a system of final exams to be taken at the end of the primary school; harmonising the education standards applicable at the end of the primary and secondary schools (spiral development); ensuring continuity in the development of career guidance from the primary school onwards.

Primary schools should be the practice grounds for students of teaching schools, for the completion of the mandatory number of hours in the class, for carrying out student internships, for the preparation of term papers, small projects, graduate, for master thesis and doctoral dissertations; exceptional teachers from the PS should be appointed as mentors to students of teaching schools, and this title should bring them not only financial but other benefits, as well (e.g. redistribution of working hours, management consulting and training staff in schools and the like).

Lifelong learning should be one of the transverse lines which cut across all education subsystems. Primary schools should cooperate on adult education projects, and should be included – in terms of infrastructure and personnel – in the implementation of adult education projects.

Ties with informal methods of education are necessary in order to organise the education and raise the interest and motivation in students for learning. These include networking and cooperation with children and youth scientific research, cultural, educational and sports organisations in order to develop joint programmes; collaboration with various art colonies, creative industries, institutions
for the preservation of cultural heritage, those who deal with old crafts, and involvement in their activities; including school programmes which develop active learning in extracurricular circumstances.

IV. GENERAL AND ARTISTIC SECONDARY EDUCATION

The mission of the general and artistic secondary education (hereinafter referred to as “GASE”) in Serbia is the development of core competences, cognitive and creative potentials of students, of a positive attitude towards work, knowledge and learning, and enabling the students to work independently and to participate in the lifelong learning, i.e. to educate well and, in terms of upbringing, to form and direct the part of the youth population which will continue its cultural, scientific and intellectual development to academic studies.

The GASE purpose is to prepare students well for the continuation of their education at higher levels and to create the basis for the formation of future intellectual and cultural elite of the country, which will:

1) be the main factor of development of the country;
2) contribute to the preservation and development of national and cultural specificities and identity;
3) be trained to act humanely, communicate constructively and cooperate with others;
4) be able to review various achievements and values competently and take them critically;
5) have informed and responsible participation in the civic life;
6) be able to create new values in science, economy, technology, social sphere, sports and other fields;
7) be able to create new artistic values, and, due to the entrepreneurial spirit, they will know how to present such values in a way that is of both personal and general welfare.

1. The Vision of GASE

The key strategic features of this educational subsystem are the coverage of students in general and artistic secondary education; the quality of education (conditions, programmes, teaching process, teachers, student achievement and the quality of the school as an institution); efficiency and relevance of the general and artistic secondary education.

The basis for formulating GASE development strategies are analyses and ideas given in the Draft Changes in Comprehensive Schools in Serbia, proposed
by the Association of Comprehensive Schools in Serbia, and further elaborated in the Development Directions of the Primary, Secondary and Art Education in the Republic of Serbia by the year 2020, as well as the projections of social and economic context in Serbia in 2020.

In 2020+, comprehensive schools and secondary art schools will be of great importance in the Republic of Serbia as general educational institutions available to children which will welcome at least 39% of primary school graduates. Comprehensive schools and secondary art schools provide their students with useful knowledge and high-quality skills, providing students with an opportunity for the development of their competences, literacy (language, functional, mathematical, computer, scientific, social, artistic, and environmental) and general knowledge, all at the level of good international achievements, which provide a sound basis for higher education.

Comprehensive schools and secondary art schools are institutions with a clearly recognizable identity and rich curricular and extracurricular content, in whose implementation they cooperate on a planned and continuous basis with the local community and different educational, cultural, scientific, sports and socially relevant organizations and institutions. The quality of education which should be obtained in comprehensive and secondary art schools is such that it provides the basis for the establishment of the future intellectual and cultural elite of Serbia which will be the main carrier and generator of the country’s long-term development, create new spiritual and material goods and values, and convey them to others in an ethical manner and in the spirit of sustainable development, contribute to the development and preservation of the national and cultural particularities of Serbia while at the same time respecting others and their differences and constructively communicating with them.

2. The Current Situation in the GASE System

The Current Situation: Key Features

GASE schools belong to the same subsystem, because these are the parts of the education system with the same mission – forming the future cultural and intellectual elite of the country. Although it belongs to the same subsystem, secondary art education has a lot of specificities, so it will be defined in a separate document with a detailed analysis of the situation and concept development of a coherent and comprehensive system of art education from pre-school to university level.

GASE Student Coverage

In the recent years, the enrollment rate in secondary schools has been increasing (from 76.40% in 2005 to 81.58% in 2008), but only one quarter of students go
to comprehensive schools and secondary art schools. In 2010, the coverage was 25.38% (23.35% of students in comprehensive schools, and 2.03% in secondary art schools). In Serbia, there is a much smaller proportion of comprehensive-school education compared to other in the other European countries (only the Czech Republic has a lower proportion, 21%, the MoES, 2006). In recent years, the problem is also in the structure of students – the best students do not go to comprehensive schools. Since a greater number of points is required for the enrollment in certain vocational schools than in comprehensive schools, it happens that the weaker students, who fail to enroll in a vocational school from their list of choices, then opt for comprehensive schools of scientific orientation, because there is less pressure there. Both of these facts, the coverage and the manner of selection of students, are regarded as a serious problem in achieving the strategic goal of Serbia 2020+ document to increase the number of people with tertiary education. The introduction of the general graduation exam as a condition for admission to academic studies will further exacerbate this problem.

In total, there are 121 comprehensive schools (10 are private), 31 secondary music schools (which are also primary), 3 ballet schools, 9 secondary art schools where visual arts, design and artistic craftsmanship are studied. Some artistic profiles are also available in some technical schools. According to its total capacity, the school network is well developed, but the system is not fair, and the geographic distribution of these institutions does not provide equal access to schools to the young people from all municipalities. Smaller municipalities from underdeveloped regions, as a rule have comprehensive schools of only one orientation, without choice for the students.

Children from vulnerable groups, despite their abilities, often do not have access to education in comprehensive and art schools, mostly due to the poor social status of families who are unable to pay the costs of education out of their place of living (cannot pay for transport or for the child living in another place), and this type of education does not lead directly to employment, is time-consuming and requires investments. Two economic indicators confirm this. When we look at the average salaries per municipalities and districts in June 2010, it is clear that a big part of municipalities that have a modest number of secondary schools fall into the category of municipalities with lower average earnings (SORS, 2010). Another indicator is the profile of poverty in Serbia: poverty is much more prevalent in rural than in urban areas (9.8% versus 4.3% in 2007, LSMS, 2008), regional differences in the degree of development are among the highest in Europe (The National Strategy for Economic Development in the RS, 2007), and households with two underage children (who do not earn income) have a poverty index that is almost two times higher than the average (12.7% vs. 6.6%), while those with three or more children have the poverty index of as much as 30.5%. Due to the transition process, on one hand, unemployment is increased, as well as the poverty
of families, and on the other hand, many large state-owned enterprises have been closed, which reduced the number of firms and companies giving scholarships to students, which was an additional measure for the equal education of children from different regions.

We have no data on the percentage of Roma children who enroll in comprehensive schools. It is probably negligible, because some form of secondary education is started only by 8.3% of Roma children, and completed by 6.2% (Roma Education Fund, 2004). There is no reliable data on the number of students with disabilities and special needs who attend GASE. Comprehensive schools are not finished by 10% of the enrolled students, there are very few failed students (about 1.3%), which does not speak of good quality, but is the result of other factors. The number of students in a class and the number of students per teacher is similar to other European countries.

In Serbia there is a problem of mixed schools where, apart from vocational education, comprehensive-school programmes are also implemented in some classes. In nearly 30% of schools in which comprehensive-school or art programmes are currently implemented, vocational education programmes are also available. Since these are two educational subsystems with completely different objectives, missions and functions, it is impossible to adequately implement the GASE mission in such circumstances. The problem is not about the schools being in the common space, such as a school centre, but in the fact that the same staff teach in two different subsystems (different roles, emphasis on different competences of students). The only solution is to resort to the lecturing mode and only to make a difference in the volume of the covered material, which is contrary to the nature of the teaching/learning process that focuses on the student and the conception of teacher roles in GASE. Mixed schools should be retained only in cases of emergency, where it is the only way to provide students with adequate secondary education (e.g. there is only one school profile, which does not match all students).

The Quality of Work in GASE

The quality of the teaching space is not good, because most schools do not meet the necessary environmental, sanitary and other conditions. Investments are necessary in furniture, laboratory equipment, computers, video projectors, equipping libraries, didactic equipment, instructional materials, musical instruments, studios, mediatheques, fittings and furnishings for small research activities, for the implementation of extracurricular activities and others. Very often it happens that the appearance of schools and their equipment are not adequate for applying modern working methods and achieving educational goals.

There are curricula for comprehensive schools of general, socio-linguistic, natural-science and mathematics, ICT and sports orientations and several types
of specialised comprehensive schools (Mathematical, Philological and Physics). In art schools, there are curricula for music, ballet schools, fine art and design schools and a special curriculum for children with outstanding musical abilities. The curricula cover all areas, but they are inflexible and offer practically no possibility of choice. Elective courses or modularisation of teaching in its true form do not exist in GASE. The curricula in comprehensive schools are too extensive, their structure and content are not adjusted to the nature of these schools and to the characteristics of the students (the somewhat abridged university materials slightly downgraded and “put down” in to the comprehensive school level). When the curricula are changed, it is usually done in isolation for a particular subject and grade, without perceiving the place of one part in the whole and the connection of that part with others. A number of students attend art schools and comprehensive schools at the same time in order to secure continued education at various non-artistic schools, which enroll between 15% and 20% of secondary art school students (for example, Vojvodina – 18.75%, Belgrade – 22.11%, 6.76% rest of Serbia, the Community of Music and Ballet Schools of RS, 2003). Given the GASE mission and functions, the problem is also in the large percentage of students who, after secondary art schools, do not enter a university (Vojvodina – 36.11%, Belgrade – 26.20, the rest of Serbia – 21.25%).

In art school curricula some important general subjects such as mathematics and geography are not sufficiently represented (since 1996, they have been transferred to the optional subjects group and are often not taught in practice because a small number of students opts for them). The problem is also maladjustment of general subjects and disciplines to specific requirements of certain artistic schools (e.g. introduction of acoustics instead of physics in secondary music schools; avoiding activities in physical education that may result in hand injuries and replacing them with some other activities, corrective exercises, etc.). If we take into account that a number of students of music and ballet schools may start secondary schools without finishing the regular primary schools (as primary music and ballet schools are shorter), then, the representation and quality of general education subjects in secondary art schools are questioned. The curricula of art subjects in comprehensive schools are very poor and their potentials for educational purposes are not used. Only musical and visual arts (in addition to literature) are represented, without many other arts such as drama, theatre, dance, movement, film, photography, digital art, arts and crafts, and creative industries. The curricula do not have the necessary (vertical and horizontal) integration of teaching disciplines. Since in most schools there are no extracurricular activities developed, there is no opportunity to connect contents from different fields and apply the knowledge, and no opportunities for the introduction of new contents and forms of work.

The statistical data on the education in Serbia does not show the number of teachers in secondary schools classified by vocations, profiles and types of
schools in which they work, except for special secondary and art schools, which means we do not have the exact number of teachers in comprehensive schools. It is estimated that, in the field of art education, there are over 3,000 employees and more than 26,000 enrolled students. According to the estimates and field information, there is enough teaching staff in GASE (in some less developed areas there is a lack of English teachers and mathematics teachers). The qualification structure of the teaching staff is good and adequate. The problem is in the way of the initial teacher education and in-service teacher training, which leads to imbalance and non-integration of professional and pedagogical education, absence of mentoring work and essential introduction into the profession and undeveloped concept of teacher professional development. At the Faculties of Fine Arts and Music there are psychological-pedagogical and methodological courses (basic package of 30 +6 ECTS), but in some other art faculties there are none of these. It happens that, for example, after finishing the music school, students go to the Faculty of pedagogy where there are no departments or blocks of subjects relevant for the teaching methodology in junior grades, so not even there do they have the opportunity to be trained in the domain of art pedagogy. Art pedagogy in our country is not nearly as propulsive or developed scientific-research field as in developed countries or as recommended in the European documents (see document: The European Agenda for Culture, 2009; Map for Arts Education, 2006; Seoul Agenda – Targets for the Development of Art Education, 2010).

The quality of teaching methods is probably one of the biggest problems of comprehensive and art education. Teaching mainly boils down to lecturing, except in case of vocational subjects in art schools where teaching is individualised, and the use of active learning methods and the possibilities offered by modern information and communication technology is very low. The emphasis is on the large number of lessons with a focus on the subject facts and, at best, on learning with understanding, and much less on training students for independent intellectual work, problem solving, decision making, evaluation and self-evaluation based on knowledge and skills of analysis, implementation of small project tasks, presentation skills, creating new products or solutions, and so on. The domination of pure lecture-based teaching style is a twofold problem: this approach cannot accomplish GASE goals, and secondly, it completely ignores the developmental competences of this age, the existing ones are underused, and some important new ones are not developed. Comprehensive-school subjects suffer from academism. For example, in teaching computer science and technology, there is often much more insisting on the theoretical knowledge of the functions and hardware and software components, the theoretical knowledge of programming languages and the demonstration of knowledge of how to work in each of them, and there are almost no examples of schools where these skills are used to present data and contents of other subjects that are taught, to process and display the results
of analysis and projects performed for the needs of other subjects, to expand and raise the level of user knowledge and skills. Computer literacy is not treated as a transversal competence required for work in other fields.

The quality of textbooks and student reference to textbooks are insufficient, manuals or collected materials are used frequently, students learn much more from the notes and do not master the important ability of finding the necessary information on their own and or the critical reception and source selection. Textbooks are not of good quality, nor are they adjusted, by the structure and contents, to the mission of these schools (greater offer of various activities, expanding one’s general knowledge, motivation for reading and intellectual work, reference sources, etc.). There are fewer alternative textbooks in secondary schools and there are no textbooks for all subjects prescribed by the curriculum, and particularly there are limited-edition textbooks in art schools. The existing textbook quality standards are inadequate for their assessment.

As much as in primary schools, in most GASE schools there is a dramatic imbalance between the curricular and extracurricular activities. The largest number of extracurricular activities is not related to teaching, students usually have to pay for them, so a large number of children cannot use them. The largest number of schools work in two shifts, which is an obstacle to the development of rich offers of extracurricular activities, and they themselves are not part of the mandatory working hours of teachers. Inadequate attitude towards complementary and supplementary teaching results in a huge number of private tutoring hours either of compensatory nature (so that students can learn what they missed and failed to learn in school), or additional, more stimulating preparations for competitions or other achievements in certain areas (except in art schools where masterclasses and competitions are parts of the regular teaching activities).

The effects of GASE are in accordance with the listed problems. International surveys (PISA and TIMMS) show that our students aged 15 are functionally illiterate (one third of the population according to PISA, 2009); that the students’ knowledge is mainly of reproductive type; that the degree of applicability of this knowledge is below world and regional averages; that we have a very small percentage of students in the highest categories of knowledge (less than 1%) and alarmingly big percentage in the lowest categories of achievement. For this education subsystem, a particularly serious challenge is low reading literacy (understanding the text and the ability to work on the text), because it is the basis for further education. Faculties complain about the low level of knowledge and literacy of students coming from GASE, and this could be seen in the low achievement on tests of general knowledge on the university admission examinations. Due to the lack of standards, the quality of the assessment and evaluation process is burdened with subjectivity and absurdly relativised, which is best reflected in the average grade of graduation classes, which often exceeds 4.5. The quality of
the educational effects of comprehensive and art education is not monitored, but various indicators (e.g. the value system of young people, such as cultural needs and habits in students, ways of spending leisure time, role models, type and frequency of violence in schools, juvenile delinquency, etc.) show that in GASE, as well as in primary school, the upbringing function has been neglected. There is a specific problem in specialised comprehensive and art schools, where students are little and rarely provided with psycho-social support and assistance in their development (how to cope with success, how to establish balance in the development of different aspects of identity), which sometimes leads to the fact that one number of the most successful of these fail to complete higher education despite the supportive circumstances they live in.

The concept of career guidance has not been developed in schools. Professional counselling is often done by psychologists, but rather unsystematically. The basics of entrepreneurship development have appeared in the curricula implemented by some schools (e.g. development of students’ cooperatives).

Creative and cooperative atmosphere in the teaching staff is rare in comprehensive schools, somewhat more common in art schools, and is most common in music schools (because of choral and orchestral performances). Creative and autonomous teachers with their own initiative, i.e. teachers – respected professionals are rather an exception than the rule. Systemic measures in no way recognise and support the work of good teachers. The autonomy of teachers is very limited, it usually comes down to the choice of teaching methods to be used in working with students. The autonomy of students is small, as well as their participation in the school life and activities (e.g. in teaching activities, in making decisions). A cooperative relationship between students and teachers is rare in gymnasiums, and is much more developed in art schools, especially in music schools (mentoring, cooperation on public performances, competitions).

GASE schools as institutions do not have a developed distinctive identity, and the fact is that this problem is somewhat less expressed in secondary art schools because of their nature.

Students’ sense of belonging to school is not developed, there are very few measures aimed at strengthening the school spirit. The quality of interpersonal relationships, social ecology, the interior and exterior school space are not seen as parts of the positive identity of the school, few activities are aimed at strengthening the participation of students and developing their sense of belonging to school. Given the fact that the identity of schools is underdeveloped in GASE schools, it is logical that their cooperation with the local community and the relevant institutions in it is very low (educational, cultural, scientific, sports, etc.). The impact of school on the life in the local community and wider environment is generally small. The cooperation between comprehensive and art schools and secondary vocational schools in a local community is rather rare.
The cooperation of schools and parents is mainly reduced to informing parents about the student success or lack of it and interventions regarding their grades. Due to the GASE mission and functions, it is necessary for it to cooperate with higher education, but apart from the faculty enrollment campaign in comprehensive schools (in art schools, this is on a much smaller scale), there is hardly any other activity. There is a specific problem in case of students of secondary ballet schools, they do not have the opportunity to continue their education, because Serbia does not have higher-education institutions for ballet artists. There is a lack of scientific research of relevant issues and features of GASE, which would serve as an important additional support for the planning of reforms in this part of the education system.

The Effectiveness and Efficiency of Education in GASE

Analyses of the current situation shows that GASE is not efficient enough: there is insufficient coverage of students in GASE; the share of comprehensive-school education is among the lowest in Europe; the quality of preparation of students for further education at university is not good; as observed at national and international student assessments, students do not master the necessary competences, do not acquire diverse, rich, applicable knowledge and skills, general knowledge, they have low motivation for learning and intellectual work and further education; they do not develop a proper system of values which promotes conscientious and persistent work, knowledge, ethics, civic accountability to themselves, others and their own environment. Comprehensive schools have lost their specific identity of the institutions that prepare well for and lead to the university.

GASE Relevance

In the long run, GASE should have one of the central roles in raising the percentage of population with higher education in Serbia and in forming the intellectual and cultural elite of the country. There is no doubt in the importance of and necessity for GASE to achieve the objective that by 2020, in RS, 30%-38.5% of citizens aged 30-34 years should have some form of tertiary education. It is obvious that this is a subsystem of education which shall, due to the discrepancy between the characteristics of its functions and the current situation, require the biggest changes and interventions in the next decade, and major investments to meet the social needs.

3. SWOT Analysis Findings

GASE internal strengths and resources to achieve the vision defined are: a long tradition of comprehensive and art schools in Serbia; there is a network of
schools built with a capacity for a greater coverage of students; there are scientific-research and professional institutions and staff who can competently solve GASE problems; there is enough teaching staff with appropriate professional qualifications; legal framework and institutional structure for GASE innovations have been established; and there are specialised pedagogical-psychological services in most schools.

GASE serious internal weaknesses are: geographical distribution of schools which does not provide access and equity of GASE; small, insufficient coverage of students, especially significantly lower coverage of students from vulnerable categories and undeveloped system of support and provision of conditions for their education; low quality of teaching and knowledge with which students leave the secondary school unprepared for the academic level of education; there is no possibility of continued schooling of ballet teachers and artists; teachers are poorly prepared for the psychological and educational work with students, are not trained in the use of modern concepts of learning/teaching; there is no comprehensive concept of education for future teachers (high-quality selection, scholarships, mentoring and continuous monitoring); there are no departments on teaching faculties for all subjects; a concept of in-service teacher training needs to be improved as well as its funding; a system of monitoring, and evaluation of teachers has not been developed; legal solutions for the promotion of teachers have not been implemented; extra-curricular activities in schools have not been developed; curricula are too large and inflexible; poor, rare and unelaborated cooperation of schools with cultural, scientific and other organisations and institutions, therefore, the future cultural and intellectual elite has no chance to meet with the centres of cultural and scientific life in their communities in order to develop different needs and habits and associate extracurricular knowledge and skills with the school.

The current benefits in the environment that can be used in achieving the vision are: projections of economic development in the next decade that sees innovation as a central economic agitator; different standards and educational policies at the EU level have been developed and can serve as supports for the complete reform of the education system in Serbia; there are also European funds that could specifically be used for GASE reform; in the last 10-15 years various high-quality programmes have been developed in the NGO sector, which are applicable to GASE; there are associations of schools which may be one of support systems to improve the quality in GASE.

Risks of not achieving the necessary GASE vision are real and their causes must be taken into account, and these are, first of all: general poverty and poor financial possibilities of the society as a whole; the profile and depth of poverty in Serbia directly affect the coverage of children from vulnerable socio-economic groups in high-school and art education; total investment in education, research
and development are below the average in the EU, especially in absolute terms compared to the nominal value of GDP of developed countries; insufficient appreciation of education in comparison to the importance of contributions to social development; frequent political changes, and, with them, the lack of continuity in the implementation of necessary changes in education; insufficient, but also uncritical implementation of positive experiences of other educational systems.

4. GASE Development Strategy

The Main Challenges and Orientation of the Strategy

Comprehensive and secondary art schools are educational institutions which have least been affected by the reform developments in the previous 20 years. The main gap between the vision and the existing situation is the small coverage of students, inadequate selection of students for entrance into comprehensive schools and insufficient quality of comprehensive-school education, and, consequently, insufficient preparation for the continuation of studies in the institutions of higher education. The above mentioned produces the following contradictory situation: if we raise the quality of the GASE and set higher requirements (for students and teachers), it can be expected that, at first, the number of students shall remain the same or drop, which is contrary to the requirement that GASE should be the main way to increase the number of people with university degrees.

5. The Strategy for Achieving the Vision – Policy, Actions and Measures

GASE Student Coverage

Ensuring a significantly greater GASE coverage is the primary task in the achievement of the GASE mission and the long-term increase of the number of persons with tertiary education in Serbia. The key policy in that direction requires enabling children from destitute families and children from rural areas to obtain GASE education (followed by a higher education) and raising the quality and characteristics of GASE education. In order to accomplish this, the following measures must be taken:

1) Creating support for children from indigent families and children from rural areas so as to enable them to obtain GASE education by providing transportation for those students living in remote areas; covering transportation costs for indigent students; improving the rules governing the granting of scholarships (defining criteria for their allocation and ensuring the continuity for those who continue their education in higher education); providing school textbook funds; providing
instruments, school equipment and premises for learning and exercising outside regular school hours; and, if possible, providing one free meal at schools;

2) Providing affirmative measures of support to specific groups of students, who have systematically been left out of this form of education (e.g., Roma children, some categories of children with disabilities and special needs) at the time of GASE enrollment.

3) Adopting a law, and all relevant regulations, pertaining to comprehensive schools and secondary art schools which shall operationalise and specify the GASE educational profile and define its working conditions.

4) Raising the appeal of GASE through different forms and working methods, flexible and rich offers of curricular, extracurricular and after-school activities and modularising the curricula, which allow for individualisation in GASE studies (see The Quality of Work in GASE).

5) Comprehensive-school and art curricula are not implemented in mixed schools because that would negate the specific nature of GASE and would serve to reduce student interest in GASE.

6) Making a separate document on art education from pre-school to university level (see The Current State of Key Features).

**The Quality of Work in GASE**

Providing high-quality education in comprehensive and secondary art schools is a basic condition for the fulfillment of the GASE mission in Serbia. The quality of education is composed of several basic components: the quality of the conditions for teaching and learning, the quality of education, the quality of teaching and learning, quality of teachers, the quality of student achievement (which is objectively determined) and the quality of schools as institutions. Basic measures that can assure the high quality of GASE are:

1) General Policy

The fundamental policy for the development of GASE is to define these forms of education as a priority for modern development in Serbia, because these forms of education are the foundation for later higher education and the development of initiative, creativity and innovation among young people. Determining these forms of education as a priority should be operationalised by the system of financing of these forms, increasing the coverage of the same, by their inclusion in the development plans of the Republic of Serbia and local governments.
2) The Quality of Teaching and Learning

Defining the standards for school premises and didactic, artistic and computer equipment for comprehensive and secondary art schools, and defining mechanisms to control the use of these standards. These standards should provide conditions for one-shift work of these schools, the implementation of various school activities and the use of different methods of active learning/teaching, all of which is necessary for the accomplishment of the GASE mission. For increased pedagogic efficiency, the number of students in the classroom in all schools should not exceed 22–25 students;

3) The Quality of Upbringing and Educational Plans and Programmes (Curricula)

(1) Comprehensive schools enjoy the status of general education schools, but may also have orientations toward different fields of study (natural sciences, mathematics and socio-linguistics). Within each of these orientations, students may choose among elective subjects (modules). There is also a possibility to choose an international comprehensive school and, under certain conditions, an on-line comprehensive school organised according to the blended model.

(2) Adoption of the new curricula. In order to create conceptually new curricula, it is necessary first to define the standards for student achievements (key knowledge, skills, competences and value systems which the students should adopt during their secondary-school years) for comprehensive and secondary art schools as a whole, as well as for certain subjects. Enriching comprehensive school curricula with the contents of new artistic disciplines that have not been represented in schools so far, but have valuable educational potential (drama, theatre, dance, movement, film, digital art), while the curricula of art schools will be richer after the addition of some general disciplines of high quality, which have to be adjusted to the school profile. Educational curricula must be contemporary, relevant for the field, but also selective, and should be applicable and of social relevance. It is necessary to introduce transdisciplinarity in school curricula, primarily through school-based projects. This will, for example, allow the introduction of art and culture into the mainstream of the entire teaching process and help to create a richer environment for students (see Recommendations of the European Commission for Education, Training, Culture and Youth, in the Context of the European Agenda for Culture);

(3) The flexibility of the curricula: teachers enjoy the autonomy in the selection of one part of the teaching contents (which is not higher than 10%),
in adjusting it to their work conditions, student characteristics and to the specificities of the local setting in which the school is situated. The objectives of that part of the subject curriculum contribute to the achievement of the subject goals. In addition to giving autonomy to teachers in school, it is necessary to provide continuous support and assistance to teachers in the implementation of the curricula, and it is necessary to define how it will verify the adequacy and appropriateness of those parts of the curricula conceived by teachers in school activities;

(4) Schools have a school development plan (which includes priorities for the next period); a 4-year school programme (which includes all aspects of curricular and extracurricular school activities, as well as cooperation with other institutions and local community); and an annual work plan of the school (which makes specific plans from the two previous documents for one year). The implementation of all activities defined in these documents must be financed.

(5) School documents contain a complex structure of activities: curricular, extracurricular, elective, optional, and after-school activities and school activities in the local community (volunteer and social work). It is necessary to achieve a harmonious integrity of all the planned activities at school. Various extracurricular programmes are designed as interdisciplinary in order to encourage meaningful connections between the knowledge and skills and the development of students’ general knowledge, they are implemented during the working hours of teachers and are funded on the basis of the work programme of the school. A part of the curricula can be implemented through these activities, which are different in approach and way of work, and are less burdensome for students, regardless of the time spent at school. Pre-service and in-service teacher training needs to include training for extracurricular activities, as well. Students will not pay participation fees for the sections, optional and extracurricular activities, avoiding thus the discrimination against students from poor socio-cultural backgrounds.

(6) Introducing single shifts at schools (whenever conditions permit), and in the time and space which remains, organising diversified types of high-quality extracurricular school activities for the students. Only such broad school activities can achieve the educational goals and develop and enhance the upbringing function of schools. In addition, extended stays at school will increase the security of the children and act as a preventative measure against the occurrence of socially undesirable forms of behaviour. Where single shifts are not possible, extracurricular activities will be conducted in public institutions within the local community.
(7) Developing the educational function of the school through the way of educating students (selection of high-quality programmes, methods of work, teachers as a role model); extracurricular activities of students; and the totality of school activities and cooperation with other institutions, organisations, parents and the local community;

(8) In GASE, the school will organise comprehensive sports events to take care of the physical development of all students, and organise, independently or in cooperation with other institutions and organisations, activities so as to develop healthy lifestyles of students. All students must be involved in such activities, which are adjusted to their abilities and preferences;

4) The Quality of the Teaching and Learning Processes

(1) School programme will provide the implementation of various forms and methods of teaching/learning harmonised with the nature of the subject and its objectives. Various methods of work enable better achievement of educational goals and individualisation of teaching, better fulfilment of the specific needs of students and the development of competences necessary for students to continue their education and to live in a modern society, preparing them for the future easier adaptation to technological changes and new forms of work organisation and contributing to the increased productivity, competitiveness, economic growth and employment rate. The use of artistic potential in other academic disciplines will be ensured, as life problems are much more similar to the problems encountered in the art, and those are the problems which rarely have only one exact solution. Using the methods of art encourages the creative and innovative capacity of the individuals (see, for example, the use of theatre and drama in education, the project Drama Improves Core Competences in Education, DICE, 2010) and, in this manner, develops the creative capacities of the society. School libraries and mediatheques are extensively used in regular teaching as a space for learning and implementation of relevant activities of students needed for particular subjects and for the development of student media literacy. Libraries and librarians are resource centres for different sources of teaching and extracurricular activities. The use of ICT technologies in the teaching/learning process and different forms of learning in the on-line environment should be allowed (electronic conferences, subject blogs, discussion forums, information exchange, electronic testing, etc).

(2) Making available different trajectories for passing through the GASE in preparation for the future education and professions. The choice between elective courses, extracurricular and optional activities in school
is made at the beginning of the school year through the consultations among the student, the parent/guardian, teacher and psychologist/pedagogue/adviser for subjects available at the school. In addition to the diversity of the programmes, the same programmes can be implemented at different levels of difficulty (basic and advanced). Programmes are designed to encourage different interests in students, the correlation and application of knowledge in the academic and life context, and the development of general knowledge and functional literacy of students. A system of evaluation of all activities/programmes in which students participate has been developed. Upon completing the GASE, the student shall receive a transcript of all subjects for which a passing grade was received in the course of the four years.

3. The burden of the student with mandatory classes must not exceed 26-28 hours per week, so as to allow the student enough time to participate in other activities and achieve other objectives and outcomes. Secondary art schools have a different structure of activities, with lots of individual, practical exercises and mentoring work with students;

4. Ensuring that teaching and extracurricular activities are equally represented at school. Extracurricular programmes shall include different fields (science, culture, sports, health, entrepreneurship, political socialisation and organisation of society) and have been outlined using an interdisciplinary approach, so that teachers belonging to different fields of expertise can work together on one programme. Pre-service and in-service teacher training should include training in extracurricular activities and the preparation for the role of a mentor. A system which encourages students to participate in extracurricular and after-school activities should also be defined: e.g. an offer which enables a personal choice, public affirmation in the school and/or local community (competitions, awards, public appearances, etc). Schools are encouraged to organise extracurricular activities in cooperation with external partners in the local community.

5. Providing different structures and time schedule in a school week for teachers and students. Teachers and students should stay in school, not only during the regular school hours (eg. 8-16 hours) but according to the programme of all school activities. In addition to regular classes and extracurricular activities, students should have periods of time during which they can study and consult with their teachers, and for the project work.

6. Textbooks and instructional materials are assessed on the basis of valid and verifiable standards of quality, and they are primarily adjusted to the mission of these schools (larger offer of different activities,
expansion of general knowledge, motivation to read and make intellectual efforts, use referral sources, etc.). Students in GASE are encouraged to develop critical reception of textbook contents, to perform analyses and comparisons of information from different sources, to work independently on the material offered through a wide variety of high quality questions and tasks that encourage more contemplative processes in textbooks;

(7) Monitoring and control of the teaching and learning quality will be introduced through a system of an external school evaluation, teacher selection, evaluation system of teachers’ work and their progress, as well as through regular consultative and advisory work. Consultative and advisory work is being conducted in cooperation with institutions dedicated to improving the quality of upbringing and education, but may also be implemented at school (e.g. teachers in the highest ranks may have different schedules of working hours, less work with the students, and the remaining work hours should be dedicated to professional consultations with colleagues at school);

(8) The school work plan will also include a programme of active learning in out-of-school environment, and will be conducted at least once a year according to a beforehand developed programme and through cooperation with relevant institutions across the country. Cooperation of students with students from other schools, other countries even, is encouraged, as well as the involvement of secondary school students in various inter-school projects;

5) The Quality of Teachers

(1) The quality of teachers’ work is defined in the section of the Strategy which relates to the teacher education;

(2) Additional measures for assuring the quality of teachers include defining standards of professional competences and professional development of teachers which are specific to comprehensive and secondary art schools. These standards shall be used as a primary instrument for the evaluation of teachers, of teacher progress, or for the termination of employment for teachers who do not meet the criteria. GASE needs to have the best teachers, so special care is taken while recruiting them, and in addition to mandatory training, there are incentives for various forms of further education (specialisation, doctorate, etc.) and for a committed work within the school.
6) The Quality of Student Learning Achievements

(1) In order to assure the quality of student educational achievements, to maintain and further develop the existing systems for evaluating those achievements; national and international testing (PISA, TIMSS), regular analysis of those achievements and drawing conclusions for teaching and learning and educational policy of the country need to be carried out;

(2) Adopting standards of student achievements in the GASE on the whole, and in individual subjects. They define the knowledge and skills that students should have at the end of the comprehensive or art schools. Standards in GASE are built on the standards for primary education, and all together make a logical whole;

(3) Defining the concept of general and art graduation exam, which should be a part of a comprehensive assessment system during secondary school, as an incentive to improve the quality of the GASE in all fields and a criterion for the entry to higher-education institutions (see section Entry to Higher Education Institutions and Coverage). General graduation exam is also taken by the students from secondary vocational schools that have chosen to pursue academic studies. Conducting analyses of graduation results at regular intervals, both on the national level and in each individual school, drawing conclusions and learning lessons on improving the quality of schools and, on the basis of that, further innovation of the work. Comprehensive schools which express interest should be provided with the opportunity to participate in the International Baccalaureate Diploma Programme.

(4) Defining the criteria and conditions for granting the status of an excellent school (School of Excellence) in GASE for schools that are doing well, have a great pedagogical value added and achieve very good educational and development results in different fields and interact with their environment and relevant institutions, organisations and associations;

(5) Student achievement is determined by different types of examining, not just testing. Testing allows more objective assessment and comparison with others, but does not apply in all cases and does not speak about what students have learned, but only how much they have learned in relation to the others in the sample. An assessment must be in accordance with the nature of the subject and its objectives. It is necessary to develop specific aspects of the evaluation of extra-curricular activities, of the development of specific competences and to develop assessment systems specific to art schools, which would be consistent with the nature of artistic disciplines (exhibitions, concerts, plays, competitions, national and local awards, etc.).
(1) All the employees, together with the students, shall define internal rules of conduct and shall work on building a school identity. Various school activities will contribute to building a specific profile of the school in educational, cultural, sports, scientific, humanitarian, environmental, technical and technological terms. The school will enable the creation and continuous improvement of a supportive and safe environment for students and teachers, fostering the work ethic, good relations and atmosphere in the school. The school will contribute to the development of its own identity through specific forms of cooperation with local government and relevant institutions, organisations and associations. The school has developed a system of measures to support the development of students’ sense of belonging to the school (e.g. school symbols, T-shirts and sweatshirts in school colors with the school emblem). Schools will organise various types of gatherings for students apart from regular classes (e.g. sports events, leisure activities, school alumni, interschool festivals, competitions, etc.), or via a virtual educational network of teachers and students. Students may be administrators of such a network, involved in its development and maintenance, which will further bind them to the school and the life in school, and affect the development of students’ participation in school. Participation in such a network has an active educational impact on students through the development of cultural behaviours and actions within the network, as well as moral aspects: raising awareness of what plagiarism is, what the respect of copyright and related rights is, and so on. The design of the school environment, creative and flexible use of individual school facilities, development of specific visual school appearance can also be an opportunity for the development of students’ participation, but also for the development of aesthetics, flexibility in thinking and creative collaboration with others;

(2) All the employees, together with the students, will define internal rules of conduct and work on building a school identity. Clear, precise rules observed by everyone contribute to the development of human relations and constructive communication. The positive ethos is also developed by the division of roles and responsibilities of all participants (students, teachers, school management, parents/guardians and the local community). The participation of students in the functioning of institutions (in accordance with the role and capabilities) enables students to understand better the nature and logic of human associations, organisation and operation of social institutions and organisations as a part of the upbringing of students. Students are trained to distinguish
between the genuine participation and manipulation, regardless of the fact whether the manipulating party – is an adult or a peer.

(3) Comprehensive and art schools strive to find support for their public activity in the local community. They are a source of joy in their environment, performing cultural and public activities in accordance with the local needs, infrastructure and the socio-cultural context. In providing specialised premises and conditions for artistic activities of the students (e.g. studios, workshops, digital studios, editing tables, film studios, stages), schools will cooperate with the relevant institutions and organisations from the local community and the region. This should be a two-way cooperation because the local government should take care of the schools in its territory (see the section The Strategic Relations between General Secondary and Art Education and Other Systems);

(4) The programme of career guidance and counselling to students aged 15 to 18 years includes information, advice, guidance and decision-making about their profession. The objective of the programme: helping young people understand and interpret information about the world of work and future careers, enabling them to clarify the concerns they have regarding professions or jobs, teaching them to understand their capabilities and define their attitudes towards the offered or desired choices. Career counselling and guidance of young people who are talented and gifted and young people from vulnerable social groups should, as a part of the basic standards, also uphold specificities of this group of young people. Standards of career guidance and counselling for students refer to: personal development of an individual; research opportunities for learning and employment – the identification, selection and use of a large amount of information about professions, careers, further education and learning and forming their own attitude about it; planning and management of one’s own career (Strategy for Career Guidance and Counselling in the Republic of Serbia). When it comes to the development of entrepreneurship among GASE students, that does not mean to prepare students for a certain profession but entails introducing students to their own characteristics and abilities and their introduction to the nature of the world of work;

(5) Professional management of the school (see part Common Framework for Pre-University Education): election of principals is carried out at the school; principals are elected by the teaching staff on the basis of the work programme they offer, which is internally and externally verified and when accepted, it is implemented by the entire school staff in the planned period. Principals must undergo a training for the complex
roles they have, and the system of continuous professional development has been developed for them. Their work is monitored, measured and evaluated. The evaluation of principals is a specific component of the evaluation of the school. According to the new research, principals should be pedagogical leaders, those who are familiar with the nature and organisation of the teaching/learning process, as the results show a connection between school management and student achievement. School boards, in addition to their supervisory and developmental role, should help the school to raise the quality of work, build its professional identity, and through representatives of local government, support various forms of cooperation among schools in local government;

(6) A new concept is introduced into schools – the partnership between schools and parents/guardians. That partnership will be implemented through various methods of parental/guardian involvement in the life of the school, in the school decision-making process, in defining specific objectives and practices which will correspond to the specific conditions of the families and schools, and in creating a school culture and environment that will be most beneficial to the students.

(7) The schools have defined rules for accepting material support (sponsorships, donations, etc). The teaching staff, together with professional services and school officials, will decide on allocating the obtained funds, taking into account the desire of the donor regarding the purpose of funds investment (e.g. library equipment, a reading room, an office, building repairs, etc.). Individual classes, teachers or students cannot be designated as the recipients of the obtained funds.

(8) Schools create conditions for the development, piloting and introduction of educational innovations. Schools are involved in projects, and are capable of carrying out small researches, of studying and improvement of their own practice.

(9) Necessary conditions shall be created for the establishment of student clubs by the student parliament, which would be set to pursue specific actions and where young people would have the opportunity to be informed, educated non-formally and informally, to organise a variety of events and activities, to develop the volunteer spirit and values of active participation in the life of their communities.

6. Necessary Changes in the GASE Environment

In the interest of increasing student coverage in GASE, an active cooperation between comprehensive and art schools and primary schools should be established with a view to an early recognition and detection of the students, who,
due to their abilities and interests should be directed to the GASE, for example, through promoting GASE among primary school students. The cooperation between primary and secondary education should be also implemented through joint projects and activities in the local communities. It is necessary to engage art schools in the implementation of a part of extracurricular activities (e.g. development of general music knowledge, general art knowledge, etc.) in PS and comprehensive schools.

Career guidance should be developed in primary schools not only in order to help the students, but to recognise and steer them toward academic education. It is necessary to harmonise the concept of final exams in primary school and entrance exam in GASE.

Incentives for the development of functional literacy should be included in all primary and secondary school subjects. Further work on the development of functional literacy must also be a priority in the GASE.

With the higher education system, it is necessary to harmonise, first of all, the concept of GASE final examinations and of entrance exams at higher education institutions. Continued scholarships for students from vulnerable categories during the transition from GASE to higher education should be taken care of, as well as other forms of support for continued university education (providing housing, tuition relief for successful students).

With the aim of raising the quality of work, comprehensive and secondary art schools should provide support to educational staff who have acquired doctorates, specialisations or other forms of additional academic education in their fields or methodologies (granting certain benefits, titles, and some form of cooperation with their faculty, etc.) while encouraging their work in the implementation of innovative teaching methods. Additionally, it is necessary to strengthen, and, at some faculties, develop art teaching pedagogy for different types of art. Within the scope of higher education, consideration must be given to resolving the problem of higher education for ballet artists. There are suggestions that the faculty for ballet artists should be open as a separate department at one of the existing faculties.

The creation of the GASE general policy should be achieved through co-ordinated work of institutions responsible for the management and development of education (the Ministry of Education and Science, the Institute for the Improvement of Education, the Institute for Evaluation of Education Quality and Assessment and The National Education Council) whose representatives should hold joint meetings, once in three months, in which the achievement of general policies and measures from the GASE strategy would be monitored.

Within the Ministry of Education and Science there should be a person/persons responsible for monitoring the education of children from rural areas and vulnerable groups. A yearly report should be introduced, a bulletin (an annual
“white book”) not of internal but, rather, of public character on the state of that part of the system. Based on these analyses, it is necessary to plan the financial, personnel and other resources required for the introduction of changes in accordance with the development of education given in this strategy. Research in the field of education and intersectoral cooperation (education and culture, education and science, education and finance, education and work and social insurance, etc) should be amongst the priorities in the scientific development of the field of social research in the Republic of Serbia. The results of the research should be an important element in the creation and development of the education policy in the country. System support to the international, and, in particular, to the regional cooperation projects is very much needed, as well as a system offer of developed high-quality education projects to the neighboring countries and beyond, either through Ministries or through the offices of various international organisations (UNICEF, OSCE, UNDP and others), or through the cooperation between universities and research organisations (TEMPUS projects, etc.).

7. Strategic Interactions of GASE with Other Systems

As the GASE is the generator of the future intellectual and cultural elite, its implementation must include, above all, different institutions and organisations of science and culture. Cultural institutions would have to develop their educational function and establish cooperation with schools. Forms of communication may be different (a part of the curriculum should be implemented in a cultural institution or students should see a part of programmes offered at the cultural institutions, which are related to the content taught at school, or schools and cultural institutions should develop joint programmes). Centres for the popularisation of science, research stations, museums, programmes for popularising science in museum-houses (e.g. Milanković, Pupin) are places where it would be necessary to develop a detailed programme for scientific cooperation. Cooperation with institutions and organisations of science and culture must systematically be developed, must be a part of an annual school programme and certain conditions must be provided for its implementation (a developed programme, trained and competent personnel, time, space, material or consumable resources for the implementation of the programme).

Partnerships between schools and cultural institutions are important because they enable dialogue between art education and all other subjects that are taught. Of course, this includes training for this kind of approach, both of artists and cultural workers, and teachers and other professionals who work with children in cultural institutions, schools and various centres for children and other venues outside of school. Modern, creative industries should be included in the GASE programme so that students are introduced to them as a fusion of art models.
(creativity, innovation), industry (consumer goods) and technical-technological activities (use of new materials, new techniques and new technologies under development). It is necessary to strengthen the active creativity of young people in culture, science and technology and ensure active expression of young artists in the fields of culture, art and science.

Comprehensive and secondary art schools must have an established cooperation with different cultural, scientific, sports, health, environmental, technical and technological manifestations (e.g. the Festival of Science, the Laboratory of Fame, Let’s Clean Up Serbia), not only as consumers, but as potential partners in their implementation. It is necessary to promote and validate non-formal education, to support the idea of creativity and learning in everyday life, in the spare time, of supporting cultural and social activities and to link them with school learning/teaching process.

The cooperation with non-government organisations or international agencies which have existing programmes (e.g. youth entrepreneurship, leadership development, schools of democracy) may be part of the extracurricular activities at schools.

GASE would have to act within the local community, but also the local government, the administration in the local community would have to be involved in caring about the network of educational institutions and the quality of their work. The local government should systematically monitor the needs for teaching staff and scholarships for future teachers. Comprehensive and art schools are important for the future of local communities staffing and for nurturing cultural activities in it, and the local community should take on the responsibility for planning, managing and financing the development of GASE in local communities.

Ministries responsible for health, social policy and youth should, together with schools, organise regular, voluntary and humanitarian activities (blood donations, providing aid to poor students, the elderly and vulnerable people, etc.), as well as activities aimed at promoting a healthy lifestyle in the local community (fight against the use of psychoactive substances, alcohol and tobacco, reproductive health care for young people). Systematic connection and cooperation with social organisations (e.g. hiking, scouting associations, environmental associations, societies for the protection of animals, ethnic associations, homes for children without parental care, institutes for the protection of cultural monuments and cultural heritage, etc.) would provide a strong support for the education of active and responsible citizens.

Continued cooperation with the media and abroad public campaign are necessary so as to familiarise the citizens with innovations, to prepare and allow them to accept the strategic changes in GASE.
V. SECONDARY VOCATIONAL EDUCATION AND TRAINING

The mission of the secondary vocational education and training (hereinafter referred to as “VET”) is to provide every individual with the opportunities and conditions to acquire knowledge, skills, abilities and attitudes – professional competences for effective integration into the world of labour or further education.

In order to achieve these tasks, the VET should be a functional, effective, rational and flexible system of education, widely determined and accessible to all, and capable of responding to the current and future labour market needs and preparing the individual for constant improvement and learning.

In pursing this mission, the VET contributes to the creation of a knowledge-based society, which is the foundation of total and sustainable development of the society as a whole.

The functions of the VET are:
1) the acquisition of initial and continuous professional education;
2) the acquisition of knowledge necessary to continue education;
3) the acquisition of qualifications (that is, relevant professional competences) which are recognised and necessary for the participation in the world of labour and which provide employment or starting one’s own business;
4) preparing the individual for the life-long learning process;
5) development of creativity, innovation and entrepreneurship of individuals.

A part of the strategy that refers to the secondary vocational education leans on the Strategy of Vocational Education Development in the Republic of Serbia (“Official Gazette of RS” No. 1/07). The proposed text is consistent with and based on the documents of the EU – the Copenhagen Declaration on Vocational Education in 2002, and the Bruges Communiqué on Enhanced European Cooperation in Vocational Education and Training from 2010.

1. The Vision of the Necessary and Feasible Status in 2020

In 2020, the VET needs to provide an opportunity to students to gain relevant qualifications that are part of a comprehensive National Qualifications Framework of the Republic of Serbia (hereinafter referred to as “NQF”) in the optimised network of secondary vocational schools and educational institutions, whose work is based on social partnership, various forms and methods of teaching and learning, and education and training programmes. This enables, on one
hand, any person who has acquired primary education in accordance with his/her personal predispositions and abilities, to gain his/her first qualifications and training for the lifelong learning process. On the other hand, the secondary vocational education provides an opportunity for gaining additional qualifications, which allows the needs of the labour market to be met in accordance with the economic, technological and entire social development of the country.

The process of achieving the vision should be monitored through the key features of the strategy defined. Monitoring of indicators for each of the key features is needed in order to take corrective measures to ensure that in 2020, the set goals are really achieved. The key features used for confirming the achievement of the strategic objectives in the VET system are: the coverage, the quality, the efficiency and the relevance.

The expected values or the desired status in 2020 of the VET are:

1) **Coverage** – it is expected that at least 95% of primary school graduates will choose to go to a secondary school (88% of the age group). Four-year secondary vocational schools are attended by 39% of the age group, other VET are attended by 10% of the age group, while more than 5% of the unemployed adult population attend some forms of VET.

2) **Quality** – in 2020, it is expected that all elements for achieving high-quality of the VET should be functioning (Sector Councils are already established and operating in their second term, the National Qualifications System is developed and regularly updated based on the needs of the economy and society as a whole; all curricula are developed according to the qualification standards or achievement standards for general subjects; standards for teachers and principals as well as for institutions are in full force; external final vocational and graduation exams will be implemented, as well as exams for other forms of VET, etc.; the dropout rate in VET – reduced by 50%).

3) **Effectiveness** – in 2020, a minimum of 95% of students will have completed four-year secondary vocational schools (37% of the age group); 40%–50% of those who have completed four-year secondary vocational schools enroll at universities (15%–18.5% of the age group) and the remaining youths actively seek employment, while 20% of adults who have completed the training system will find employment or will be self-employed in less than 9 months. 20% of adults will complete continuous VET, including persons who have returned to the VET after leaving education system too early and those who have experienced long-term unemployment (training, additional training and retraining) in order to acquire their first qualifications or additional qualifications.

4) **Relevance** – in 2020, there is a higher degree of compliance with the requirements of the labour market offering qualifications in vocational
education and training based on continuous research of competences within the sector councils. The network of vocational schools is rationalised in line with the demographic trends and the level of regional development.

2. Current Situation in the VET System

Current Situation – Key Features

Coverage

According to the data from the 2009/2010 school year, the share of students attending secondary vocational schools was around 72.59% (25.38% in comprehensive schools; 2.03% in art schools). The most frequent fields of work are Economics, Law and Administration with 13.24%, followed by Mechanical Engineering with 10.46%, Electrical Engineering with 9.88%, Trade, Tourism and Catering with 9.35% and Medicine with 8.20% (these 5 fields enroll more than half of the graduated primary school students who opt for secondary vocational education). Secondary vocational schools are appealing – the basic advantage of them is the possibility of continued education and employment opportunities. The introduction of experimental classes (58% of vocational schools have at least one experimental class which covers around 15% of students in the system) has further increased the appeal of vocational schools (the necessary number of points for the registration in experimental classes often surpasses the necessary number of points needed for comprehensive schools, MoES – registration results VT 2005-2010). Unfortunately there is no accurate data on the coverage of adults in the system of training, additional training and retraining.

The school network is inadequate, the enrollment quota for schools is 89%. The enrollment plan does not follow labour market needs. Systematised data on existing training in the market does not exist, nor is there any data on the number of adults enrolled in the system of secondary vocational education.

Quality

Some of the elements necessary for monitoring and for the achievement of quality in the VET system have already been implemented or are in the process of adoption (school development planning, internal evaluation, work standards for teachers and institutions, participation of employers in creating qualification standards, development of the curriculum and exams, partially external final exams and graduation exams in experimental classes, etc.). There is no accurate data on dropout rates in vocational schools. Based on the LSMS data and the Development of Human Resources in the Republic of Serbia, 2010, the dropout rate in secondary education was 2.3% (2005). However, some other data
indicates that this rate is much higher, as much as around 30% in the secondary education, when compared to other official data which does not account for the age group of students (Government of Serbia, 2003). According to the Ministry of Education and Science, a poll conducted for the 2000–2008 age group shows that the drop-out rate was 7.3%. However, according to other measurements, the percentage of people who have not acquired the initial secondary vocational education in Serbia is 10.0% (EUROSTAT, 2010). In contrast to these figures, the LSMS comes to the conclusion that one-fifth of children from Serbia still do not attend secondary school, especially boys and young people from socially vulnerable areas.

**Effectiveness**

In 2010, 36,127 students who had completed three- or four-year VET enrolled at higher education institutions, making up around 63% of the graduate population. The remaining portion of VET graduates is seeking employment. According to the April 2011 statistics of the National Employment Service (hereinafter referred to as “NES”), the number of people who are first-time job seekers and who have completed *three years* of VET is 61,901. That number includes 49,983 people (80.7%) in the first five fields of work, as follows:

1. Mechanical Engineering and Metal Processing 17,760 people;
2. Trade, Tourism and Catering 12,541 people;
3. Textile and Leather 8,027 people;
4. Electrical Engineering 6,146 people;
5. Agriculture, Food Production and Processing 5,509 people.

With *four years* of VET, 68,208 people are seeking employment for the first time. From that number, the first five fields of employment include 37,149 people (54.5%), as follows:

1. Economics, Law and Administration 10,953 people;
2. Mechanical Engineering and Metal Processing 8,499 people;
3. Agriculture, Food Production and Processing 7,247 people;
4. Trade, Tourism and Catering 4,342 people;
5. Electrical Engineering 6,108 people.

An important difference in the percentual representation of people who have completed three- or four-year secondary vocational schools who are seeking employment arose from a greater number of students opting for higher education and from a decrease in the number of young people seeking employment due to a longer period of time spent in completing their studies.

Youth unemployment rate (15-24 years) reached 46.1% in late 2010 (The First National Report on Social Inclusion and Poverty Reduction, 2011).
Out of those who fall into the category of long-term unemployed persons (by LFS and NES standards, long-term unemployment is any period of time exceeding 12 months), 73% are people with secondary education. In this total percentage, the largest group includes those persons who have been seeking employment from four to six years (17.1%), followed by two to four years (16.8%) and seven to ten years (11.1%). Persons who have been unemployed for a period which exceeds their education period reach a state of de-professionalisation or de-qualification, and, on that basis, they become more difficult to employ. From a social perspective, this is also an economic loss – a failed investment, which requires further social and personal engagement and additional resources needed for training those persons for their possible employment.

Relevance

Precise data on the number of employed persons, who are changing or acquiring other qualifications through some form of part-time education in vocational schools does not exist, nor do we have data on the number of people who have lost their regular student status or have dropped out and are continuing their education as part-time students. Therefore, we cannot assess the percentual amount of this key feature. Compliance between the VET offer and the labour market demand is at a low level. Regardless of the great demand for certain qualifications such as bricklayers, welders, moulders, primary school graduates have not been interested in these professions for many years. On the other hand, enrollment policy does not comply with the unemployment situation (highest enrollment rate is in the fields of Economics, Law and Administration with only a four-year education, but a very similar number of the unemployed are from this group seeking first-time employment opportunities).

3. SWOT Analysis Findings

Strengths

1) possibility of continuing education or employment;
2) large coverage of the population;
3) existence of a broad school network, and broad educational profile offers;
4) increased appeal with the introduction of experimental classes (resulting in schools being equipped with technical equipment, teacher training, smaller number of students in classes, introducing qualification standards, learning outcomes, modular teaching and introducing Entrepreneurship as a separate course);
5) support of institutions and bodies (The Ministry of Education and Science, the Institute for the Improvement of Education – Centre for
Vocational Education and Adult Education, the Institute for Quality Evaluation and Assessment, the Serbian Chamber of Commerce, the National Employment Service, the Council for Vocational Education and Adult Education);

6) experience and results have been acquired through various projects (CARDS, IPA, GIZ, Kulturkontakt and others).

Weaknesses

1) inadequate vocational structure and geographical distribution of the network of schools;
2) poor equipment in schools that are not included in the experiment;
3) inadequate structure of enrollment plans and non-coordination between the educational profiles and the structure of economy and its needs (training of profiles for which there is no need or in case of which a surplus exists in the labour market, while on the other hand, there is no interest in certain crafts needed on the market);
4) obsolescence of a part of the system that is not included in the experimental classes (outdated curriculum, teachers who do not undergo adequate programmes of continuous in-service teacher training, poor equipment in schools);
5) the unresolved problem of quality assurance of practical work in the curriculum (hereinafter referred to as “work practice”) outside the classroom, there are no accredited jobs and instructors for carrying out work practice, nor incentives for companies to provide high-quality practice to students, an insufficient number of companies is interested in this kind of cooperation with education);
6) lack of instruments for quality assurance (The National Qualifications Framework, qualification standards, external final exams, etc.);

Opportunities

1) the need for a high-quality work force (investments, the need for new qualifications, self-employment – starting one’s own business)
2) providing conditions for strengthening the cooperation with social partners (through the Council for Vocational Education and Adult Education, the formation of Sector Councils, support to Sector Unions and Associations)
3) opportunities for secondary vocational schools to actively participate in the development of models for informal forms of VET – training; transfer of knowledge (methodology, concepts, procedures) gained in the development of experimental classes for further VET development)
4) access to EU funds;
5) providing conditions for the introduction of high-quality work practices (incentives to employers, e.g. through tax relief for developing social partnership with their participation in developing a national qualifications system, qualification standards, practical training, exam realisation, etc.).

**Threats**

1) discontinuity in the VET reform due to frequent socio-political changes (frequent interruptions or alterations of initiated reforms);
2) it is very difficult to introduce proven innovations in the education system;
3) weak effects of the existing system of in-service teacher training, which, when combined with the poor social status of the teaching staff in the society leads to their demotivation and apathy;
4) insufficient funding of and investments in equipping schools.

**4. The Strategy for Achieving the VET Vision**

*The Gap Between the Vision and the Current Situation*

Although the coverage and appeal of the vocational education is seemingly at a satisfactory level, its structure is a generator of unemployment because it creates experts for whom there is no need in the labour market.

There are no system data on the efficiency of the system, or the number of those persons who have opted for further education upon completing secondary vocational education, passed through the qualification system, additional qualification, re-qualification, additional training or have found employment. Such systematised data was collected by the Institute for the Improvement of Education for graduates from secondary vocational schools that had completed experimental programmes. In general, there is a lack of data concerning adult training at the level of secondary vocational education.

From the rational point of view, there is no feedback mechanism to correct the enrollment policy which generates long-term unemployment.

In terms of flexibility, there are some good initial results, but, on one hand, the norms are too rigid and complicated while, on the other hand, there are none.

An obstacle to bridging the gap is the absence of coordination and coherence in the strategic management of vocational education, which creates numerous problems and consequences that directly hamper the development of vocational education, or dilute the effects of the already achieved or initiated strategic innovations and reform activities.
5. The Strategy for Achieving the Vision

A comparative overview of the strategic objectives for the development of vocational education in the EU (established by the Copenhagen Declaration and Communiqué from Bruges) and the Republic of Serbia in the future, and measures for their achievement are provided in the table.

Table 1: **Summary of the strategic objectives of vocational education in the EU and the Republic of Serbia in the future, and steps for their achievement**

<table>
<thead>
<tr>
<th>The strategic objectives of vocational education according to the Copenhagen strategy and Bruges Communiqué</th>
<th>The strategic objectives of VET in Serbia by 2020</th>
<th>Strategic measures to be implemented in Serbia by 2020</th>
</tr>
</thead>
</table>
| **Improving the quality and effectiveness of VET and strengthening its attractiveness and relevance** | · Assure the quality of teachers, trainers and other professionals in vocational education  
· Ensure greater compliance with the labour market, and, thus, the relevance of VET | Ensuring that qualifications in VET are relevant and available | · establishment of the National Qualifications Framework for lifelong learning;  
· standardisation of exams for the qualification;  
· establishment of a system of certification of prior learning/recogni- 
  tion of non-formal and informal learning |
| Strengthening the creativity, innovation and entrepreneurship, as well as the use of information technology | Improving the quality and efficiency of VET | · Introduction of master craftsman education  
· Improving the system of teacher training  
· Development of educational programmes based on qualification standards  
· Flexible organisation of classes  
· Harmonisation of the network of vocational schools and offer of educational programmes (profiles) with the needs of the economy |
| Developing an effective system of lifelong learning and mobility as a reality in vocational education | · Providing flexibility in the accessibility of educational programmes and the acquisition of skills to all categories of users  
· Developing a strategic approach to internationalisation of initial and continuing professional education and promoting mobility  
· Promoting the principles of equality, social cohesion and active citizenship – allowing inclusion in the VET | Ensuring that the VET system is inclusive and improving its contribution to the reduction of early dropout rates | · Reduction of early dropout rate |
Strengthening the participation of social partners in vocational education
- Direct involvement of employers in the design, development and monitoring of VET
- Intensive cooperation of stakeholders of VET development policy with other fields, especially economics

Establishing a sustainable system of social partnership in VET in Serbia
- Involving employers in the programming, development and implementation of VET

Establishing an effective management system of VET in all domains of its implementation
- Management of key instruments of VET
- Establishing an intensive cooperation with all stakeholders of VET development
- Ensuring proper statistics management, i.e. quality and relevant data for VET development

Establishing an effective management system in VET at all levels
- Establishing a system of monitoring and evaluation of vocational education
- Defining a clear division of responsibilities, roles and tasks of all stakeholders in the management of VET

**6. The Basic Strategic Measures**

*Establishing the National Qualifications Framework for the Lifelong Learning*

The establishment of the National Qualifications Framework in Serbia (hereinafter referred to as “NQF”) provides support to the development of a modern, relevant and flexible system of education, whose purpose is to:

1. provide relevant qualifications (to strengthen the ties between the labour world and the education world);
2. improve the access, flexibility and mobility in the formal and non-formal system of education;
3. provide identification and recognition of informal and non-formal learning;
4. support orientation to learning outcomes and implementation of the concept of lifelong learning;
5. provide reference points for quality assurance;
6. ensure that the Serbian Qualifications are comparable to the European Qualifications Framework (hereinafter referred to as “EQF”), with the aim of acquiring international recognition.
The NQF is a system which includes the number and description of all levels of qualifications, the relations between qualifications, mobility and career development in relation to the labour market and civil society. It covers the National Qualification System with all levels and types of qualifications, regardless of the manner of acquisition (through formal or non-formal education or informal learning – life or work experience) and age at which the qualifications are acquired (youth or adults). This enables the integration and coordination of existing qualification systems in Serbia (eg the system of qualifications for higher education, the system of qualifications for secondary vocational education and other systems).

The NQF will determine the processes, the organisational bodies responsible for establishing qualifications, manners of acquisition, comparison, identification, quality assurance and standards according to which they are implemented.

The needs for qualifications in the labour market, or the necessary competences in accordance with the technological and social development, must be continuously monitored, which will be provided by the work of Sector Councils. This would enhance the educational offer of vocational education – formal and non-formal.

Activities by the year 2020:

1) to establish the NQF in the secondary vocational education – formal and non-formal (it is desirable that the unified Serbian Qualifications Framework be established, which will include both formal general secondary education and higher vocational and academic education).

2) to adopt laws and regulations on qualifications and establish all bodies responsible for this field;

3) to establish a continuing work of Sector Councils;

4) to establish the National Qualification System, which is regularly innovated.

Standardisation of Examination for the Acquisition of Qualifications

The standardisation of examinations for qualification acquisition at the level of the system (vocational graduation and final exams for all other forms of vocational education and training) should be implemented on the basis of the previous experience regarding different concepts of final exams. In order to raise the quality of the secondary vocational education at the national level, it is necessary to establish standards of exams (external or partially external evaluations, instruments, procedures, and competent bodies/institutions, laws and bylaws). The implementation of the NQF shall determine these standards.

Planned measures:

1) within the NQF, examination standards are set for each qualification (external or partially external assessment, instruments, procedures, the competent bodies/institutions, legal and sublegal legislation);
2) at least one representative of higher vocational schools and faculties is involved as a part of the teams for preparing the instruments needed for the final exams and vocational graduation exam, for every educational profile;

3) at least 50% of external examiners have been accredited;

4) test results are collected in the process of monitoring of the VET system, processed and used for the quality assurance at the levels of school/institution and the VET system.

Establishing a System for the Certification of Prior Learning/Recognition of Non-Formal and Informal Learning

Standards of the certification system of prior learning and recognition of non-formal and informal learning are an integral part of the NQF. The establishment of this system is of great importance for two reasons:

1) at the time of extremely rapid development of information-communication technologies, information accessibility to each individual is much higher than in the period of only 10 years ago, which provides opportunities for intensive non-formal and informal learning in the desired fields – much faster than through the formal education system;

2) there is a great number of people on the labour market with work experience but without any formal qualification.

Certification systems of prior learning have been established in most of developed countries and significantly contribute to the improvement of the qualification structure in the labour market by providing formal recognition of the knowledge, skills, or competences acquired by work and life experience.

Planned measures:

1) to define a system of certification of prior learning under NQF (qualification levels where certification is possible, procedures, instruments, relevant bodies/institutions, laws and bylaws);

2) to establish at least 10 institutions responsible for the certification of prior learning and allow at least 2% of the unemployed without qualifications but with relevant work experience to gain the first qualification in this way.

Introducing Master Craftsman Education

Teachers/training instructors at companies possess the professional competences required for training students, however, they often lack the formal education level. Adopting the Law on Master Craftsmanship, forming chambers of
crafts and introducing master craftsman education, would formally enable these people, who are engaged in teaching, to formally gain the adequate pedagogical knowledge and to be recognised as teachers by the education system. On the other hand, this would allow the maintenance of the traditionally recognised crafts.

**Planned measures:**

1) established accreditation system for employers and instructors who train students/trainees through teaching in enterprises;
2) developed system of master craftsmanship for at least 30 occupations and at least three age groups of master craftsmen who have acquired the degree;
3) at least 50% of teachers/training instructors in enterprises passed the master exam and are accredited as teachers in the competent institution;
4) agreed/adopted laws and bylaws in this field.

**Teacher Training**

Teachers of vocational subjects and modules in the VET do not possess the initial teacher education, while a majority does not possess prior vocational experience in their profession, as this is their first employment. A permanent professional development of teachers and proper training is necessary both in the field of pedagogical-psychological and methodological competences and their profession (see part Teacher Training).

Introducing career guidance and counselling into secondary vocational education implies the introduction of training for expert associates and teachers for these jobs.

**Planned measures:**

1) to develop different models of in-service training, including practical training for teachers in their main profession, conducted at companies or institutions;
2) to develop teacher training programmes that would strengthen their competences to encourage creativity, innovation and entrepreneurship in students;
3) to train all teachers to use information – communication technologies in teaching or its preparation;
4) to establish a measurement system for the effects of in-service training based on the previously accepted methodology;
5) to establish a system of teacher training for using the system of career guidance and counselling in the VET.
Education programmes are developed according to the qualification standards that establish professional competences or outcomes of knowledge and skills to be achieved upon the completion of education for a given qualification.

One of the strategic objectives of the Copenhagen process is to strengthen creativity, innovation and entrepreneurship, as well as the use of information technologies. Introduction of Entrepreneurship as a course in the programmes of vocational education provides training to students/trainees in VET in order to acquaint them with the basic economic principles of entrepreneurship, the necessary legislation, but also to acquire the basic skills of making a business plan for the implementation of selected ideas. The introduction of various methods of active teaching and learning in all subjects and modules, as well as in extra-curricular activities, creates opportunities for the development of students creativity, innovation and entrepreneurship, as well as the acquisition of information-communication competences. This requires additional training of teachers in methods and techniques of teaching and also in the use of information-communication technologies.

In order to enable students/trainees to meet their additional educational needs, whether they are in vocational or general education, a part of the programme should be elective in character. In this manner, effectiveness is increased by keeping two options open (to the labour world and further education). On the other hand, the upbringing and educational process within the school will be improved if the school creates its own education programme in accordance with the needs and possibilities of the local environment and with its own education offer. This would allow for a higher mobility of students through the secondary education.

Some of these qualifications need to be transferred from the school education system into the training system.

**Planned measures:**

1) to develop all formal vocational education programmes according to the qualification standards set forth in Sector Councils, based on learning outcomes, organised modularly or by subject;
2) to introduce entrepreneurship in education and training programmes;
3) to introduce compulsory and elective subjects in all vocational education programmes;
4) to introduce modern methods of active learning and teaching and train teachers in their implementation;
5) to train teachers of secondary vocational schools to create an open part of the school curriculum and actively involve them in the process;
6) to introduce the European Credit Transfer System in the vocational education;
7) to establish an accreditation system for non-formal vocational education programmes;
8) to develop support programmes for interested schools and institutions for the development of training programmes.

Flexible Organisation of Lessons

It is necessary to have flexible lesson hours, or at least to allow variations, depending on the nature of the sector the students are training for (e.g. agriculture, tourism, construction, health care) on the status of the school as regional or local, on the fact whether some teaching contents need short or long period of time, etc. A number of measures need to be implemented based on our own experiences, as well as on the experiences of other countries in the region and the EU.

Planned measures:
1) to align the organisation of classes in schools with optimal learning styles (e.g. subject and modular courses are organised during one semester or in blocks);
2) to align the organisation of classes in schools that educate students for agriculture, tourism, construction and health care with the nature of the profession;
3) to provide, by laws and bylaws, that the norm for teachers is primarily determined on an annual level, and the lesson redistribution during the school year should be determined according to the curriculum requirements.

Harmonising the Network of Vocational Schools and Available Educational Programmes (Profiles) with the Needs of the Economy

Harmonisation of the new network of secondary vocational schools with the needs of the economy and demographic trends in the regional/local environment must be implemented in accordance with the research that will be carried out across the entire territory, and in cooperation with the regional chambers of commerce, associations of producers who are not involved in the chamber system and local governments.

Changing the enrollment policy in the VET is important not only for the education development but also for other social activities. Based on the past experience, the supply must suit the demand – the number of students who finish primary school with the number of available places in a school. Due to the large disproportion, there has been a serious collapse in the balance between the three-year and four-year vocational education, with the vast majority of classes left without three-year profile students, or with a very small number of students so that it is impossible to form a class.
High-quality vocational education is expensive, especially practical training, and only a small number of schools can afford to provide their students with the appropriate conditions for practical training on the school premises. For the purpose of uniformity of the acquired competences, certain vocational schools should be established as regional technological centres in specific fields, and should use the capacities of dormitories for the accommodation of students. Simultaneously, these technological centres would serve as resource centres for practical subject teachers.

It is necessary to consider the criteria for the verification of secondary vocational schools, to modernise the facilities and equipment standards for educational profiles, perform the re-verification of schools and determine which of them meet the set criteria.

Planned measures:
1) to develop mechanisms for identifying the necessary qualifications in the region and at the level of the local communities during the period of 1 to 5 years in the regional chambers of commerce;
2) to establish a new network of secondary vocational schools that is aligned with the needs of the economy and demographic trends in the region and the local community;
3) to establish at least 5 regional technological centres for specific sectors, utilizing the economic capacity, the existing school facilities and student dormitories;
4) to adopt appropriate laws and bylaws for regulating the operations of the regional technological centres, their financing, the work of the teachers/instructors at these centres, as well as the “visiting” teachers;
5) to conduct the verification of all secondary vocational schools;
6) to improve the threshold of knowledge (the summary score of all final exams and primary school marks) for the enrollment in different educational programmes in the VET;
7) to harmonise the offers of the educational programmes with the unemployment data from the labour market and the economic and technological needs of the country and the region
8) to introduce a qualification exam for certain educational programmes which require specific psychological and physical capabilities;

Reduction of the Dropout Rate in Education

Due to the lack of reliable data concerning the early dropout rate from the education system, it is necessary to establish a unified methodology for monitoring the drop-out. It is necessary to establish a system of measures which would reduce the number of students who drop out of schools:
1) to introduce a system of career guidance and counselling in schools;
2) to develop special assistance programmes for vulnerable groups with the aim of implementing the inclusive approach in education;
3) in accordance with the needs of the sector, to introduce vocational education programmes at all levels of the NQF, especially for those occupations for which there is a great demand on the labour market but small interest for the selection of appropriate education profiles.

**Planned measures:**
1) to apply a methodology for monitoring and measuring the early drop-out rates, and through an integrated information system, monitor the number of enrolled students in each age group;
2) to reduce the actual drop-out rate by 50%;
3) to train the teachers and expert associates in each secondary vocational school for career guidance of students/trainees;
4) to develop, test on a sample and apply in practice a variety of assistance programmes for vulnerable groups;
5) to ensure that students who have left secondary education receive some form of vocational education and training and gain their first qualification;
6) in sectors with a great demand for certain qualifications, but small student interest in enrollment, accompanied by a high drop-out rate, to develop specific vocational education programmes and training at the necessary qualification levels.

*Involving Employers in the Process of VET Definition, Development and Implementation*

The National Qualifications System will be determined by the Sector Councils. They are based on the principles of social partnership and their members are representatives of outstanding and successful companies, associations of employers; representative branch of trade unions; higher education institutions; the National Employment Service; the ministry in charge of the particular sector; the community of schools; the Ministry in charge of education; Institute for the Improvement of Education and the Serbian Chamber of Commerce. Sector Councils are established with a multi-year term in order to provide continuity in carrying out their tasks.

**The tasks** of the **Sector Councils** should be:
1) an analysis of the existing qualifications and determining the necessary qualifications in the sectors;
2) identifying qualifications that should be modernised;
3) identifying qualifications that no longer meet the needs of the sectors;
4) preparing draft qualification standards and providing support for their development within the sectors;
5) providing opinions on the expected acquisition of knowledge and skills for the qualifications within a sector;
6) promoting the dialogue and immediate cooperation between the worlds of labour and education;
7) promoting opportunities for education, training and employment within sectors;
8) identifying opportunities for adult training within a sector;
9) considering the implications of the NQF qualifications within the sector.

Including the employers in the work of the Sector Councils, where the qualification standards are determined, in the teaching process as instructors, and in the examination commissions for the acquisition of qualifications, will allow the employers actively to create the labour force needed for successful business development. Employers have informally been involved in this process so far, but in order to ensure their full participation, a number of systematic measures must be introduced into the field of finance (membership in school boards, compensation for work in commissions, accreditations of instructors of practical training from companies as teachers, accredited jobs for the implementation of practical training, tax relief for companies in which the practical education is conducted, etc.).

Planned measures:
1) to develop a system of accreditation and certification of employers on whose premises practical training is conducted;
2) to adopt laws and by-laws on financial incentives to employers on whose premises practical training is conducted;
3) to involve at least 10% of employers in the work of Sector Councils, examination commissions and in the implementation of practical training.

Establishment of System for the Monitoring and Evaluation of Secondary Vocational Education

Through the usage of experience in the monitoring and evaluation of pilot programmes, the existing system of self-evaluation and external evaluation, an adequate system must be established which would allow faster response of those in charge of the education system and comparison with other European education systems. It is, therefore, necessary to establish a system for measuring the indicators of the situation in the education adopted by the National Education Council.
Planned measures:
1) to supplement the quality standards of education institutions with additional standards and indicators specific to VET;
2) to develop a system for the monitoring and evaluation of vocational education (indicators, instruments, procedures, the competent bodies/institutions, laws and bylaws);

Defining a clear distribution of responsibilities, roles and tasks of all stakeholders in the management of the VET

In order to ensure the development of an efficient management system of the VET at all levels, it is necessary clearly to define the division of responsibilities of all stakeholders of the VET at all levels.

In this sense, it is necessary to:
1) provide a clear and coherent management system of key instruments of the VET development;
2) define the roles and responsibilities of all VET participants and stakeholders at all levels;
3) increase the accountability of all decision makers in the field of education in the achievement of strategic objectives and provide consistent implementation;
4) modernise the legislative provisions in all aspects of the VET implementation;
5) establish mechanisms for coordination and collaboration of stakeholders at some levels of VET.

Planned measures:
1) to establish a VET management on the basis of the analysed condition of the VET system at all levels, which will contain clearly defined roles and responsibilities of VET stakeholders;
2) to improve regulations that specify the obligations and responsibilities of VET stakeholders.

7. Necessary Changes in the VET Environment

The state of the economy has a critical influence on the implementation of the set objectives in the Strategy for Development of Secondary Vocational Education. A number of measures envisaged in the Strategy for Development of Secondary Vocational Education rely on the cooperation and support of employers and the economy as a whole – the greatest threat to the implementation of proposed activities will be the inability of the economy to become engaged in the planned activities as it will be preoccupied with its own problems.
In case of such a scenario, the change schedule will be determined by the inflow of foreign funds.

On the other hand, if the measures stated in the Strategy and Development Policy of the Serbian Industry from 2011 to 2020 (“Official Gazette of RS” No. 55/11) are implemented, there is a real possibility that the VET, or at least a part of it, will transform and achieve its desired goals. VET development priorities, in terms of activities which are recognised by the Industrial Development Strategy are: information-communication technologies, food production and processing, traffic, and energy and energy efficiency.

In order to achieve the VET system vision, it is necessary for the reform process to encompass other subsystems and for them, as a continuous educational spiral, to be mutually harmonised.

8. Necessary Strategic Interactions with Other Systems

The state of the Serbian economy and especially the new wave of the global economic crisis are very unfavourable for formulating the development strategy and reform of the education system.

Promoting the knowledge as a key solution for exiting the overall crisis can be implemented through a meaningful and permanent campaign of promoting the most successful in their fields based on the education outcomes. It is necessary to constantly promote the best teachers, pupils and students in the system.

It is necessary to harmonise and coordinate the reform activities in all subsystems of education. Experts involved in secondary vocational education must have insight into all changes related to primary and higher education, as well as into changes of all sectors for which their subsystem prepares skilled personnel. This will avoid schooling excessive personnel in a specific field of the labour market, and for whose competences the need has ceased due to changes in the activities. Sector Councils, established by the NQF, are the right bodies to conduct a successful dialogue with and to plan changes based on the request of the economy, higher education and secondary vocational schools.

The establishment of a coordination body that would include the presidents of all three National Councils (the National Education Council, the VET and the AE Council, and the National Council for Higher Education), a board of the ministries and directors of institutes would create more favourable conditions for joint planning and implementation of the reform agenda. The VET is also implemented in the languages of national minorities, so it is necessary to harmonise decision-making and laws and by-laws in the field of education with the national councils of national minorities.
PART THREE
HIGHER EDUCATION
DEVELOPMENT STRATEGY

Schematic View of the Higher Education System in the Republic of Serbia

**Figure 1:** Schematic view of the higher education system in the Republic of Serbia: IMS-Integrated Medical Studies (360 ECTS); IAS – Integrated Academic Studies (300 ECTS); GAS – Graduate Academic Studies (240 ECTS); BAS – Basic Academic Studies (180 ECTS); BVS – Basic Vocational Studies (180 ECTS); MAS – Master Academic Studies (60 or 120 ECTS); MVS – Master Vocational Studies (120 ECTS); SVS – Specialist Vocational Studies (60 ECTS); ASS – Academic Specialist Studies (60 ECTS) DS – Doctoral Studies (180 ECTS).
I. COMMON FRAMEWORK FOR HIGHER EDUCATION DEVELOPMENT

The higher education is of particular importance for the Republic of Serbia, and is a part of the international, and particularly European, education, science and art fields.

The mission of the higher education is continuously to create and transfer scientific knowledge and professional competences through organised studies and research, which will enable, in the first place, the social, cultural, economic and other progress of our country and its citizens in the constantly changing circumstances of life and development.


The higher education system is facing a number of challenges in its development up to 2020 + and is responding to the following development goals:

1) The higher education system shall, in the first place, direct the structure of its educational and research activities towards meeting the developmental needs of the economy and society in the Republic of Serbia;

2) The higher education is open to anyone who wants a high-quality system to prepare them for employment and further development, the system which assumes an obligation to help them, through modern and high-quality education, to achieve their life ambition;

3) The higher education system shall improve its performance in order to increase the share of population with tertiary education in the total population of the Republic of Serbia;

4) The higher education system and its every part shall dedicate its activities, functioning and development to the consistent fulfillment of its mission in the context of lifelong learning and community developmental needs;

5) By 2020, the higher education system shall develop its resources and improve its performance so as to assume the duties of achieving ambitious goals related to its regional and international reputation and competitive position;

6) The financing of higher education is an investment in the future. Increased levels of investments and the financing system shall be completely directed towards the schooling of creative, innovative, responsible and highly-educated people who are needed to achieve economic growth, reduce unemployment and achieve a general democratisation of the society. The higher education funding shall be carried out under the new system, taking into account all the benefits of the existing one.
The new funding system shall simultaneously and explicitly support (a) the high-quality outcomes, relevance and efficiency in the utilisation of resources and time of study; (b) the responsibility of students and higher education institutions (hereinafter referred to as the “HEI”) for successful studying; (c) allowing those who want to study to study, regardless of social, economic or other status; and (d) transparency of studying costs, acquisition, allocation and spending of revenues in HEIs. The elements that will be introduced on the basis of overall indicators of competence allow the HEIs to access additional funding;

7) The current status, the expressed tendencies of spontaneous development and the expected role of higher education require radical approaches to improving the higher education in each segment of it;

8) HEIs shall develop their organisational structure towards strengthening the cooperation and integration of basic units (faculties, higher schools); towards integrated university and integrated academies for vocational studies; towards work and organisational integration with institutions and parts of the research system, especially in basic research, in creation of joint studies, especially doctoral, all with a view to establishing unique national or regional centres for doctoral studies and cooperation with manufacturing and other systems;

9) The higher education will assume the role of the initiator of the faster improvement of the quality of education at all levels in such a way that the high quality of doctoral studies will raise the quality of the educational system from these studies downwards.

2. The Republic of Serbia in the European Higher Education Area

The higher education will continue to adapt its work, development and behaviour to the principles on which the European Higher Education Area (hereinafter referred to as the “EHEA”) and the European Research Area (hereinafter referred to as the “ERA”) are based. For the achievement of this goal it is necessary:

1) to ensure that these processes take place, but that institutional autonomy and academic freedom are maintained, and with the full participation of students, teachers, HEIs, scientific and professional public, and employers;

2) to set learning outcomes, knowledge, skills and competences of students in the focus of the implementation of the Bologna process to promote the “A Student in the centre of learning” and “Lifelong Learning” paradigms;
3) to harmonise and consolidate the higher education system through: (a) the finalisation of structural reforms; (b) the improvement of the quality assurance system of the education process that includes research, lifelong learning and promotes the opportunities for employment; (c) a wider access to studying; (d) mobility;

4) to adopt and implement the NQF that is consistent with the Framework for Qualifications of the European Higher Education Area and the European Qualifications Framework for Lifelong Learning, which is based on learning outcomes and the unique system of quality assurance;

5) to achieve continuous coordination with the European institutions in all the processes related to the recognition of qualifications and full implementation of the Lisbon Recognition Convention;

6) further harmonisation with the EHEA to increase the flexibility of the system of higher education through the introduction of “short-cycles”;

7) to develop institutional and other policy measures by following the directions of development of the EHEA, which will provide the talented with greater access to higher education in all three cycles of studies;

8) to introduce mobility in the higher education system as an element of quality and a factor that affects the employment; to accept “The Mobility for Better Learning”; and strategy to adopt a strategy at the national level, which will include the mobility of international and local students and teachers;

9) to continuously develop measures which lead to the increase of employment of graduates, including self-employment through entrepreneurship; to use learning outcomes as a tool for improving the dialogue between higher education institutions, students and employers in the adaptation of curricula to the requirements of the labour market.

3. The Structure and Place of Higher Education in Lifelong Learning

Within the system of higher education, there shall be two types of studies, academic (which are realised through three cycles) and vocational studies (which are realised through two cycles), and in order to assure a better quality, flexibility and transparency of the higher education, HEIs will further clarify the differences between vocational and academic studies in the learning outcomes, skills and competences acquired in these types of studies by consistently respecting the mission of these studies.

Universities and faculties will implement both types of studies, academic and vocational, if they combine scientific research, applied research, vocational or artistic work and education.
Academies of vocational studies and faculties of vocational studies will fo-
cus on vocational education development in certain fields, and the focus will
be on developing long-term cooperation with potential users in industry and the
public sector, and will be harmonised with the needs of the region in which these
institutions are located, while the institutions that conduct vocational education,
in the process of their establishment and accreditation, will demonstrate willing-
ness and conditions for the practical training of students.

Academies of vocational studies, which have the organised and recognised
applied and development research, can organise master vocational studies (120
ECTS, vocational master) by exclusively involving teachers with doctorates and
adequate knowledge gained at the academy of vocational studies or university.

As a special form of their activities within their fields of education, HEIs
will organise and implement lifelong learning by following the general techno-
logical progress, development of the field and the needs of the labour market,
and lifelong learning will adapt to the ECTS system, and will include elements
related to non-formal education.

In adult education, HEIs need to offer educational programmes that enable
rapid re-orientation of employees to new fields of work, particularly to those that
allow self-employment.

HEIs, with their study programmes, other activities and behaviour, will be
a constant active factor of preservation of cultural traditions, ethnic and cultural
specificities and development of the national identity.

Study programmes, research, domestic and international cooperation, social,
cultural, sports and entertainment of students, teachers and other employees in institu-
tions of higher education will be based on understanding and cooperation of different
cultures, intercultural relations, tolerance and positive evaluation and preservation of
cultural diversity and mutual influence and enrichment of various cultures.

4. The Restructuring of Higher Education Institutions

Starting from the characteristics of the structure of higher education, the fol-
lowing actions should transform the current structure into the future, more valid
structure, as follows:

1) to adapt the network of HEIs to the needs and capabilities of the
Republic of Serbia;

2) to develop and implement models of integration which improve the
teaching and research process, achieve greater efficiency and rational
use of resources, reserve and increase the autonomy of social responsi-

bility of HEIs;

3) all universities need to integrate their functions, primarily in the fol-
lowing domains: strategic planning; adoption of study programmes;
quality assurance and control; student enrollment policies; the appointment of teachers; diplomas and diploma annexes; international cooperation, investments; employment and engagement of teachers; development of a unique information system; teaching of common school subjects; elective teaching; policies for and standards of making revenues; representing the interests of members in the public and of other stakeholders in the university’s environment;

4) to strengthen the institutions of vocational studies by establishing academies of vocational studies, based on the principles of disciplinary or regional correlation and to achieve integration in the domains of: strategic planning, adoption of study programmes, quality assurance and control, student enrollment policies, the appointment of teachers, the diploma and diploma annexes, and international cooperation;

5) to redefine the conditions for the establishment and accreditation of independent HEIs, primarily universities, bearing in mind the necessity of a critical mass of professional bodies in decision-making on the study programmes and rules of studying, the selection and employment of teachers and the like;

6) to allow the establishment of a university as an institution that realises the education and research process at all three levels of education in at least three fields and/or is active and productive in the minimum of four scientific disciplines (Frascati) and in at least five fields of education (ISCED).

5. Higher Education Access

The main objectives of the changes in the entry system to higher education are: to improve the quality of reception and selection of candidates and to equalize enrollment procedure in HEIs, which is achieved by the high quality of final exams – graduation exam after the secondary education. With respect to this, the requirements for accessing to higher education are as follows:

1) general graduation exam entitles students to enter all HEIs (vocational and academic studies) without taking entrance exams (the exception is access to those study groups that require special skills, i.e. specific talents (artistic, etc.);

2) art graduation exam entitles students to access the relevant study programmes at art faculties. Art faculties, in addition to taking into account the results of art graduation exam, may introduce a test of special abilities (talents). Secondary school students who have passed the art graduation exam may enter other HEIs if they pass additional exams in certain subjects they apply for and which are determined by HEIs;
3) **vocational graduation exam** entitles students to enter universities without taking entrance exam, in the chosen disciplines at vocational and academic studies.

The basic condition for the successful introduction of a new system of access to higher education is that final exams (graduation exams) are of high quality, so that they present the evidence of the adoption of basic standards of student achievement in the entire four-year secondary education.

6. **Higher Education Coverage**

The projection of higher education **coverage** at the entrance in to this system and the projection of participation of the highly-educated people in the observed age group, most often in the population aged 30–34, are given in Part One, section “The Objectives of Educational Development.”

Enrollment structure at basic academic and vocational studies is determined by the number of available places for enrollment, which has been determined and approved by accreditation of higher education institutions. Enrollment structure of study programmes is also regulated by financial instruments so as to support more study programmes that educate students in prioritised or more important fields. This instrument more or less supports the existing study programmes and initiates the development of those study programmes which are insufficient or do not exist (creating new study programmes).

7. **Quality Assurance and Control**

The quality of higher education, which includes academic and vocational work, and evaluates the quality of teaching, research, the success of employees, students and graduates at home and abroad, must be improved significantly, which can be achieved in the following way:

1) The system of quality assurance in higher education will fully adjust its standards to the European standards in higher education (European Standards and Guidelines, ESG), and track their improvement. The system needs to incorporate ethical norms and principles, adopt a code of ethics of research and higher education;

2) Assure quality through the unity of the internal and external systems of quality assurance and control, and through the primary responsibility of HEIs; strengthen the system by introducing additional measures, mechanisms and indicators; and oblige the institutions to publish the results of their work;

3) HEIs are required to promote self-evaluation procedures, to engage students and staff in the continuous improvement of educational
process, thereby following the principle of “student in the centre of learning”,

4) In any programme of study that is performed, to observe academic standards and learning outcomes and skills in line with the NQF and core competences;

5) To develop, as soon as possible, specific standards and measures which improve and assure quality in the field of doctoral studies and teacher education, as these fields are an essential basis for the development of the entire education system;

6) To ensure the improvement of educational process through the improvement of the competences of the teaching staff in professional, scientific and didactic aspects. The founder of a HEI will provide the conditions for scientific and professional progress and didactic training of teachers, and reform the selection of teaching staff by making sure that unique, published criteria are applied, the electoral body is formed from a sufficient number of teachers in the scientific field and with the appropriate titles; independent experts in the field from other HEIs (domestic and/or foreign) are included in the Commissions of Officers; appointments of teachers and researchers are conducted transparently and advertised through EURAXESS network;

7) To improve the ratio of students and teachers, especially in the field of humanities, where this ratio now far exceeds the normal European standards, and for each educational scientific and artistic field to define the upper limit of that ratio;

8) The Commission for Accreditation and Quality Assurance (hereinafter referred to as the “CAQA”) will improve its work by; (a) starting to make necessary changes to the standards with the full participation of the academic community, students and employers (b) including independent (domestic and foreign) experts, students and employers in the accreditation process (c) publishing reports on the findings of the reviewers and CAQA that are relevant for the decision-making on accreditation;

9) To include all HEIs offering study programmes in the Republic of Serbia in the accreditation process;

10) The external quality assurance and accreditation process in the future should be conducted by a national body that operates independently of the academic community and the ministry, and which would become a full member of the International Association of ENQA and EQAR. Starting from the positive experiences of other countries, it is necessary to consider the possibility or appropriateness or transforming CAQA into a National Accreditation Agency that meets specified criteria;
11) To develop and supplement information systems in HEIs and in the relevant government authorities, which will support the defined objectives, especially the continuous monitoring of quality indicators and competencies, a greater degree of electronic administration and the tracking of student achievement and opportunities for employment.

8. Modernisation of Curricula and New Forms of Teaching

The modernisation of study programmes is a required and continuous process that will ensure consistency between learning outcomes and competences required of graduates. For this purpose, the following shall apply:

1) study programmes will be aligned with the latest trends of scientific, technological, economic, social and cultural development so that the final outcome of education, as measured by the quality of scientific and technical skills of graduates, fully complies with the requirements of the labour market;

2) elements of research will be introduced into study programmes, which elements promote entrepreneurship, improve practical skills and competences;

3) HEIs will implement the reform of the existing study programmes, the development of new study programmes, as well as harmonisation of study models during the first two cycles, with the direct participation of students and employers;

4) the relevant public (representatives of employers, professional organisations, etc.) and associations of related faculties will establish expert bodies with a task to define at the national level, the core of the profession by respecting good practices of European and other universities in the world;

5) the existing curricula should further be adjusted, in all forms of student engagement; student workload should be harmonised, as well as learning outcomes and assessment methods with the obligation to observe the maximum load of students (1ECTS = 30 hours);

6) study programmes, through which teachers are trained at the level of the whole system should be harmonised in terms of the length of study, identical definition of the core of a particular discipline and titles acquired at the end of studies;

7) new methods and information technology should be introduced into the implementation of the existing and development of new study programmes, and HEIs should be supported in the modernisation, procurement and implementation of the most modern software and hardware;
8) increased use of the methodology and technology of e-learning as a complement to traditional learning should be supported, through the development of study programmes that are executed simultaneously (in the traditional form and as distance learning) and programmes to be implemented only as distance learning, and quality standards for distance learning should be harmonised with the practice in the world and the EU, especially taking into account the standards which define the workload of teachers.

9. Research, Innovation and Entrepreneurship Components

The higher education based on research is the main prerequisite for social, economic and cultural progress and development of the society. In order to accomplish this, it is necessary to do the following:

1) Increase the share of highly-educated individuals who are engaged in the research and innovation in HEIs, institutes and companies;

2) Ensure that research and innovation development are still an integral part of higher education to a certain extent, by changing the organisational structure, financing and incentive measures for integrations;

3) Support applied research, which relies on basic research oriented towards priorities and which provides a basis for the development of innovations; encourage integral programmes that combine targeted basic and applied research and innovation development and the necessary entrepreneurial activities of the new and existing companies;

4) Include a much larger number of staff (teachers and assistants) in organised research activities at all universities, regardless of their size and ownership structure; include sources and methods of funding, mandatory investment of universities in research which is proportional to the amount of their income, international cooperation, cooperation with economy, requirements for promotion and appointment of teachers and the organisation of research within doctoral studies by using strategic measures for improving research at universities;

5) Establish applied research in the academies of vocational studies as one of the bases for their formation and development, and carry out applied research at these academies in cooperation with the economy, through budgetary co-financed projects in the field of technological development and as a part of the support of innovation projects;

6) Through teaching or projects that the students will work on, all HEIs need to train students to develop innovation and entrepreneurship, and HEIs should train students in self-employment and should create conditions for the support of their lifelong education, innovative efforts and entrepreneurship;
7) Support the concept of “entrepreneurial university”, as it allows these universities to create the nucleus of the new knowledge-based industries;

8) A special programme should assist and encourage HEIs to establish business incubators in which teachers and graduate students may establish companies to commercialise their ideas and innovations. The Government will encourage the establishment of risk capital funds for necessary support of entrepreneurial initiatives within the HEIs, provide incentive grants, pay at least a part of the necessary consultance services and develop other incentives, especially those that have been tested in practice in similar countries;

9) In order to attract foreign companies to open their research and development centres in Serbia, or to cooperate with HEIs and their research centres, a special programme is needed for the support of the development of centres of research-economic-educational excellence which include, in accordance with the good practice in the world, higher education institutions by networking and other organisational forms of cooperation.

10. Intra-University and Inter-University Connections and Cooperation

In order to increase research excellence, improvement of teaching and rational use of resources, institutional and other forms of cooperation need to be established, **intra-university and inter-university networks** should be formed. Internal organisation of universities need to be adjusted in order to allow faculties to establish, accredit and implement joint interdisciplinary, multidisciplinary and transdisciplinary study programmes and research projects, and certain forms of linking need to be financially stimulated.

In addition to faculties, state universities should be encouraged to include research and research-development institutes and, thus, strengthen the research and educational potential and harmonise appointments to scientific-research and teaching positions, facilitating the exchange of teaching and research staff.

Inter-university cooperation needs to be mandatory and encouraged by special measures in the establishment of joint doctoral studies in fields where it is important for the nation, where significant international affirmation is expected, and, particularly, when individual resources may be insufficient to achieve the high quality of doctoral studies.

HEIs that offer vocational studies (academies of vocational studies, colleges of vocational studies) need to be encouraged, in addition to cooperation with the business and public sectors, to establish cooperation with scientific research organisation through joint applied and development research and the establishment of joint research centres and networks.
All aspects of mobility of teachers and the development of rules for horizontal and vertical mobility of students within the higher education system should be included in a mobility strategy, which will achieve a greater flexibility of studies.

11. Modernisation of Governance, Management and Business Administration

HEIs, at the time when the market elements of their operation, internationalisation and globalisation of higher education are being strengthened, should develop and apply modern management, effective management and efficient business administration. For this purpose, the following needs to be done:

1) The existing management system of institutions of higher education, which is very similar in the EHEA countries, should be improved in terms of quality and efficiency of decision-making and adapting to the specificities of HEIs, which mostly stem from their mission and size and organisational complexity;

2) Due to the changes in the environment of HEIs and institutions, different models of governance and management will arise. The selection, adaptation and development of models for each specific case should be completely left to the respective HEI. The only condition to be observed is that models of governance and management ensure the implementation of the planned sequence of the mission and reaching the target levels of coverage, quality, efficiency and relevance of their work;

3) Universities and academies of vocational studies make decisions on their organisational structure completely independently, in conviction that this will guarantee the establishment of a socially responsible, efficient and effective structure. In their official documents, HEIs should define the responsibilities, mode of election, control of work and remuneration of the executive management body (management);

4) Management positions need to be professionalised to the greatest extent possible, and the management should be representative and socially responsible;

5) Ensure that students, in all bodies in which they participate, are full participants in decision-making;

6) At the universities which, apart from the faculties, also have institutes, libraries, and other organisational units within their structure, corporate governance and management should be established, with full respect for academic freedom;

7) Administrative procedures, in all areas of work and operation of HEIs, need to be clearly, sufficiently and well defined by legal norms,
statutes and quality standards; in the administrative operations, modern methods and techniques of organisation and administrative work should be applied; and information flows should be modernised within the institutions and outside: making, storing, searching and distributing documents, providing administrative support to the governance, management, research and education process, students and all those who interact and/or collaborate with HEIs.

12. International Openness and Mobility

International cooperation of HEIs, the mobility of teachers and students are elements that contribute to better quality of higher education, increase competences of both teachers and students and gives them a better chance of employment. In this area, the following activities will be carried out:

1) All institutes and institutions of higher education in Serbia, by following the actions and trends, will closely cooperate with the relevant institutions of the EHEA and the ERA;

2) Institutions of higher education shall, for the sake of their improvement and development, internationalise their activities through joint study programmes, international research projects and mobility of students, teachers and researchers;

3) Base the policy of mobility on various measures that ensure the funding of mobility, availability of infrastructure, the full recognition of studying results and support during the studying, and allow foreign students to obtain a student visa and resolve other issues relevant to their lives in the Republic of Serbia (health care, housing, food, etc.);

4) Create opportunities for mobility in all three cycles of education, in the structure of study programmes and programmes for the achievement of joint degrees with foreign universities, and bind HEIs to issue a diploma supplement in English or some other European language to each student for a minimum fee;

5) Completely define and specify, as soon as possible, the policy of mandatory teacher training (through post-doctoral visits) and doctoral students at foreign universities. This policy has to be very selective and with secured funding. All budgetary funds for scholarships, awards and professional development of teachers and students should be united for implementing a proper and responsible public policy in this area;

6) Accredit, through a special procedure, study programmes that are offered to foreign students (in English, another foreign language or in Serbian) in order to avoid that unprepared HEIs offer inadequate
programmes for foreign students and, thus, undermine the reputation
of the Republic of Serbia in higher education;
7) Higher education in Serbia has the potential, with its quality and ca-
pacity, to attract large numbers of students from the region, because
there are no language barriers for most students, and in order to use
these opportunities, we should organisationally and financially support
the education fields where we already have satisfactory competitive
status, i.e. those in which such a status is yet to be developed;
8) By 2020, formulate and fully implement specific policies, actions and
measures to improve international competitiveness and recognition of
the Serbian higher education, which, as a result of this policy, is ex-
pected to improve the position of universities in the Republic of Serbia
on credible international rankings or in the region.

II. ACADEMIC STUDIES – GENERAL AND MASTER

The mission of the academic education in Serbia is to shape a highly-ed-
ucated and creative population which meets the country’s development needs
based on humane values and scientific knowledge, and which contributes to
strengthening social cohesion and to promoting social and cultural values.

1. The Vision of the Academic Studies Development

For the definition of the vision, the following key symbols should be used: Quality, Relevance, Efficiency, Coverage, Internationalisation, Student Mobility and Modernisation of the organisation of academic studies.

Academic studies contribute significantly to the technological development, the country’s democratisation, social inclusion and poverty reduction. In addition, they are essential for cultural development, since they raise the cultural level of the population, foster cultural diversity and tolerance, maintain and develop the national and cultural identity not only of the majority, but also of the national minorities.

Coverage

1) By 2020, the Republic of Serbia will have had at least 38.5% (and later
at least 40%) of highly educated people aged 30 to 34, with the qualifi-
cation structure in compliance with the projection of Serbia’s needs for
the period after 2020;
2) At least 70% of students entering the first year of graduate studies, opt for academic studies;
3) The planned increase in the proportion of academically-educated citizens should be achieved in those academic fields that are of highest importance for the overall development of the Republic of Serbia, especially in the field of technical and natural sciences;
4) Academic studies are available to all citizens who meet the necessary prerequisites for the enrollment, while ensuring that all citizens enjoy the same rights and opportunities to study. Special support should be given to students from socially disadvantaged groups and people with disabilities and special needs. Anyone who meets the conditions for the entry and wants to study, should be entitled to some form of financial support from the budget, especially if they are low-income, except in case of enrollment in the fields where there are greater numbers of students than it is in the interests of society;
5) At least 50% of students who complete the academic studies (BAS) should enroll in master academic studies (MAS);

Efficiency

1) The average duration of studies will be one year longer than the scheduled time period and during that period of time at least 70% will complete their studies.
2) students who drop out will make no more than 15%;
3) the efficiency is achieved without compromising the quality of education.

Quality

1) The structure and quality of graduates should correspond to the needs of the labour market and of a knowledge-based society;
2) Graduate students will possess contemporary knowledge, the ability to apply it, the willingness to learn continuously and seek creative solutions to problems, have entrepreneurial skills and initiative. Additionally, graduate students are citizens who promote humane values which contribute to the cultural and national development, and who contribute to the competitiveness of Serbian economy and the efficiency and quality of work in organisations where they are employed;
3) The quality assurance in academic studies is ensured through the application of the quality assurance system (QAS) of the Republic of Serbia, which corresponds to the quality system in EHEA.
Internationalisation and Cooperation

1) Academic studies in the Republic of Serbia shall apply the principles and standards that are applied to EHEA universities and are adapted to foreign students, so that at least 10% of students are from abroad;
2) The higher education market is also open to offering programmes of foreign universities, under the same conditions applicable to national universities (accreditation, work permits, etc.);
3) Universities in the Republic of Serbia actively cooperate with foreign universities, especially from EHEA countries, by offering joint degree programmes (primarily at the second level of higher education), supporting the exchange of students and teachers, and implementing joint research, according to ERA research programmes.

Student Mobility

1) Horizontal and vertical student mobility, both within the system of academic studies (all three degrees of academic study), and between academic and vocational studies (the first two degrees of education) is feasible with possible additional requirements and conditions defined by HEIs;
2) Through the exchange or otherwise, HEIs should seek to have up to 20% of students participate in the mobility projects by allowing local students to complete a part of their studies at a foreign university and international students to study at our universities.

Organisation of Academic Studies

1) Academic studies (first and second degree, i.e. cycle of higher education) follow the principles of the Bologna process of higher education that are applied in EHEA and ERA;
2) BAS can last for three or four years (amounting to 180-240 ECTS), and MAS can last for one or two years (60-120 ECTS). It is necessary to determine the model of academic studies that would apply to certain professions at the national level; it will have been achieved by the choice of model 3 +2 (180 + 120ECTS) 4 +1 (240 + 60 ECTS) or IAS (300-360 ECTS);
3) According to the planned pace of studies, there are two types of students: those who study at the normal pace (achieving 60 ECTS per year) and those who study at a slower pace (achieving less than 60 ECTS per year), which has been adapted to employed students (dis-
tance studying). Both types of students acquire the same knowledge, skills and competences, and thereby receive the same degree;

4) In addition to BAS programmes with 180/240 ECTS and MAS with 60/120 ECTS, students can also complete short cycle programmes that provide narrower and functionally-associated knowledge with 30 – 120 ECTS, in accordance with the implementation of short cycle programmes at universities in EHEA;

5) The study regime is tailored to the specific requirements of the type and form of studies, which is particularly mindful of employed students;

6) An important component of academic studies, in addition to the education, especially in the second degree, is a research activity, in which students develop creativity, inventiveness and curiosity, i.e. capacity for research.

Relevance

1) BAS prepare students to adapt to changes at the workplace, successfully carry out certain tasks, but also to develop creativity, and gain the necessary theoretical and methodological basis for moving on to the 2nd degree of higher education.

2) MAS prepare students for the most sophisticated professional tasks, while encouraging creativity, entrepreneurship, the ability to conduct research and resolve complex problems, and, thus, provide a basis for doctoral studies and scientific work.

3) the outcomes of study programmes are aligned with the NQF;

4) academic studies are open to adult education within the concept of lifelong learning, and with the purpose of their further education or acquisition of new skills in order to change qualifications or profession;

5) in addition to the education for the development of Serbia, academic studies enable a personal development of the citizens (personal enrichment, empowering for personal prosperity, and the formation of a personality with developed social and cultural needs).

2. The Current Situation in the Academic Studies System

Quality

The knowledge with which students enroll at the first year of BAS is not at the required level. On the other hand, some HEIs, in an effort to have as many students as possible and increase their income, have too low assessment criteria, which reflects negatively on the quality of their graduates. There is no system to
monitor and measure the quality of knowledge, skills and qualifications of graduates.

The conducted accreditation has had a positive effect on the degree of organisation of the academic studies. The process of providing high-quality teaching is often not integrated with the process of teaching and is not in place at the appropriate level.

Relevance

There is a discrepancy between the learning outcomes of certain study programmes and the structure of graduates and the needs of Serbia and the situation in the labour market (as can be seen from the structure of the unemployed persons). There is no assessment of the professional needs for academically-educated citizens (there is no institution to deal with this in a qualified and professional manner), and no detailed analysis of the extent to which a certain level of education of employees is required. There is a lack of institutions that would systematically track and reliably identify the current mismatch of qualifications of the graduates and the skills that are required, and, in addition to that, predict the needs of Serbia. At the time of accreditation, all study programmes have defined their outcomes, but the problem remains due to their lack of coordination with the requirements of the labour market and long-term needs of the country.

Efficiency

The efficiency of studying is low (Figure 1). The average time of studying before the implementation of the Bologna Declaration, ranged from seven to eight years. The level of dropouts between 2000 and 2004 ranged from 43% to 24% (with a favorable trend of decline). The ratio of graduates four years after the enrollment (BAS and BVS) showed an increase from 28% to 53% in the period of 2003 to 2008. In 2008, 25,931 students graduated from universities (BAS). In 2009, 13,545 students completed the BVS and BAS with 180 ECTS, and 27,682 completed BAS with 240 ECTS, MAS and postgraduate studies (under the old system). However, the success of the same age group of enrolled students (excluding the existing students), expressed as a relative number of graduates after four years, was considerably lower.
Coverage

It is estimated that slightly less than 23% of people aged 30 to 34 hold higher-education degrees. In 2009, 56,843 students completed four-year secondary schools, 37,417 students (65.8% of graduates) enrolled in the first year of BAS, out of which 80.74% at state HEIs, and 19.26% attended private HEIs. Figure 2 shows these data for registration in 2010, 2011 and 2012. They show an increase in student enrollment in BAS at the state HEIs in relation to the private.

**Figure 1:** The number of students per year in the period 2000 to 2006
(Source of data: SORS)

**Figure 2:** Number of new students enrolled at BAS (Source: SORS)
It is estimated, that in the last few years, about 40–42% of 19-year olds have started the BAS. Total enrollment capacity of the first stage of academic studies (BAS and IAS) is 42,445 students, which is satisfactory, because it is about 14% higher than the need, i.e. the number of students enrolled in 2010 year. The accredited enrollment capacity of MAS is less than half the capacity of enrollment at accredited BAS (Figure 3).

![Figure 3: Accredited capacity of basic, master and doctoral studies (Source: CAQA)](image)

In 2009 and 2010, 32 faculties enrolled 4,258 students, that is 4,110 students more than the allowed number, by which the allowed number was exceeded by 43%, and 42%, respectively; which represented 10.7% of enrollment of students in the first year of BAS, or about 60% of enrollment at private universities, which were at the highest disadvantage due to this phenomenon.

Table 1 shows fields of studies of students in 2008/09, and the relatively small number of graduate students.
Figure 4 shows the share of the budget-funded and self-funded first-year students of BAS over the last three school years. It can be seen that almost half of the students pay for their studies, with about 2/3 of them studying at state, and 1/3 at private universities.

Free studies are available to candidates on the basis of their success in the secondary school and at the entrance examination. Social criteria are not used, which make studies unavailable to students from socially vulnerable groups, who, because of the circumstances in which they live, do not achieve success in high school on the basis of which they would be allowed to study for free.
Internationalisation and Cooperation

Upon the introduction of the Law on Higher Education ("Official Gazette of RS" No. 76/05, 100/07, 97/08 and 44/10), the universities in the Republic of Serbia have applied the Bologna process of higher education. This allows a closer cooperation with universities from the EHEA countries. Cooperation in the domain of research also takes place in the framework of FP7 – ERA programme. There are few students from abroad because there are few study programmes in English or another foreign language, but there are students from the former Yugoslav republics who can attend classes in the Serbian language. Students from abroad have a lot of administrative barriers (visas, residence permits, insurance, etc.), which additionally hinders their coming to study in the Republic of Serbia. Joint study programmes with foreign universities are rare. Recognition of foreign diplomas is very difficult in some HEIs because they apply their criteria and standards (for recognition of a doctorate, for example), or equalize study programmes (which is not in accordance with the legal procedure for recognition of foreign diplomas), requiring students with valid diplomas from foreign universities to take additional exams.

Student Mobility

Horizontal and vertical mobility of students attending the academic studies is possible and applied. The largest number of HEIs, to a certain extent, allow this mobility and enroll students with completed or uncompleted BVS at BAS, requiring them to pass certain exams, in order to eliminate major differences in the curricula. Students with a BVS degree cannot directly enroll at master studies. Organised transfer of students from Serbian universities to the universities in EHEA countries is very rare, because the Republic of Serbia has not been part of the EU’s Erasmus programme, so far. There are also financial difficulties for students from Serbia who want to study abroad (the funding of their stay). On the other hand, there is a growing trend of studying abroad, primarily in the EHEA countries, but this is not in the form of the inter-university cooperation, but the result of independent decisions of students to fully complete their studies abroad. As in some EHEA countries the participation in tuition, i.e. the cost of education is low, studying in these countries has become an acceptable option to all students who may cover the costs of their stay abroad during their studies on their own or by scholarships.

Organisation of Academic Studies

Both models of higher education (3 +2 and 4 +1) are applied in the Republic of Serbia, even in the same field or discipline of education. This impedes the continuation of their studies at the second level of studies (master degree), when
students move from 3 +2 model to 4 +1 and the other way round. Students who are employed have problems to study. Distance learning (on-line), which is most suitable to them, is limited because of the decision of the National Council for Higher Education, which has determined that the number of distance-learning students should not exceed 30% of the total number of HEI students. On the other hand, the study regime is not tailored in accordance with students’ employment opportunities, because such students have difficulties to achieve 60 ECTC in one year. In addition to that, when they formally fail a year, they also lose motivation and have additional financial costs (the repayment of a part of the tuition). Due to financial motives, the majority of HEIs (about 80%) have switched to the 4+1 model, even in cases where their 3 +2 model was fully appropriate.

There is a lack of the application of active learning, as well as learning for the practical application of knowledge, and the research work of students, even at the master level, is underused in teaching. The traditional way of teaching is dominant, with students being mainly passive and only need to understand and learn what they have been given, and show it in the test. Although the implementation of the Bologna Declaration has contributed to more work with the students during semester, at some faculties it is still reduced to the minimum and to formality. An important part of teaching is undertaken by associates (they are responsible for practical lessons and work with students on exam prerequisites), while the engagement of teachers in the classroom and in working with students is low (since it is reduced only to lectures). Some faculties have problem with corruption (“buying” grades). There is a problem with plagiarism of project, homework and examination tasks and tests, and there are also other deficiencies in student fulfilment of preliminary exam requirements (e.g. Internet websites that show how to design a project, homework, etc.). A large number of exams (six) per year disrupts the education process.

In the school year 2008/09, 7,878 teachers and 5,461 associates had a full-time employment at HEIs. From 2002/03 to 2009/10 (except for 2007/08) the number of teachers at HEIs increased. The average number of students per teacher was about 35, with a note that at universities with a large number of students, number of students per teacher is very large (over 100 and more). About 85% of teachers are employed full-time (Figure 5). At some universities, teachers re-appointment often is not in accordance with the conditions of competitiveness, so it happens that teachers are selected without satisfying the criteria adopted by the National Council for Higher Education, and these criteria include the adequate number of scientific papers of a certain category, participation in research and industrial projects and others. The largest number of university teachers, in their career, have not gained any knowledge of teaching methods, didactics, pedagogy and others, or have had no training in these areas. This adversely affects the education work of individual teachers and the results of that work.
3. SWOT Analysis Findings

*Internal Strengths/Potentials*

1) Tradition and experience in higher education;
2) Developed network of HEIs;
3) The quality of some faculties or departments, and a significant number of high-quality teachers;
4) Developed academic studies in a number of educational fields.

*Internal Weaknesses*

1) Insufficient efforts of a number of teachers, insufficient research and extra-curricular work of teachers (a low presence and work at the faculty, little involvement in the work outside of teaching hours, lack of organised research, etc.);
2) Teachers hang on to the tradition, are unprepared to change, and there is a longtime habit of seemingly introducing changes, whereas, in fact, nothing is changed;
3) The lack of coordination of quality standards (which are set by global models) with the level of funding of academic studies that is much lower than in the countries that we try to follow, which brings HEIs into a difficult financial situation (if they follow the standards), or leads them to disregard the quality standards (e.g. size of teaching groups, the workload of teachers);
4) As for the election of teachers – there is a lack of competition, frequent disregard of the defined criteria, and the criteria themselves often do not include pedagogical results and skills of teachers;

5) As for the financial interests, some HEIs enroll too many students without providing the required level of education quality (insufficient teaching premises, too big student groups, etc.).

Advantages of the Environment/External Conditions

1) High interest of young people in obtaining degrees and further education (because they do not have a lot of employment opportunities);

2) Students from the neighboring former Yugoslav republics like to come to study in Serbia, for, among other things, they have no language barriers in following the classes (if they are from Bosnia and Herzegovina, Montenegro, Croatia);

3) Positive experience and tradition of students from Africa and the Middle East with the studying in Serbia;

4) The accession of Serbia to the EHEA and the European mobility programmes, students and teachers.

Disadvantages of the Environment/External Difficulties/Risks/Hazards

1) Favourable conditions for studying in some EU countries (particularly at the second and third level of higher education) – young people leaving the country (often permanently);

2) The opening of foreign universities branches and the offer of their services to Serbian citizens, plus their work is not limited by the standards applicable to domestic HEIs, so they can have better conditions for business success;

3) The decline of life standard and underemployment of young graduates destimulate young people to study or to take their responsibilities seriously while studying.

4. Academic Studies Development Strategy

The Main Challenges

1) General improvement of the quality of academic studies, as well as their harmonisation, in accordance with the international and European standards;

2) Adjustment of outcomes of study programmes to the market demands and needs of the Republic of Serbia,
3) Increase on the efficiency of academic studies: the average time of studying should be, at most, a year longer than envisaged by a study programme, during which at least 70% of students complete the studies; more than 70% of the total number of students enroll at academic studies;

4) Internationalisation of academic studies: 10% of students from abroad.

The Main Orientations

1) Increasing the quality of the studies by introducing a system of maintaining the quality and by greater competition of HEIs;

2) Increasing the access to academic studies and effectiveness by financial incentives to encourage students;

3) Adapting the outcomes of study programmes to the market demands and estimated future needs of the Republic of Serbia,

4) Supporting the strategic partnership between HEIs in the Republic of Serbia and the HEIs worldwide, as well as partnerships between HEIs and the economy, administration and other stakeholders in the knowledge-based economy.

The Strategy for Achieving the Vision – Policies, Actions and Measures

In order to achieve the strategic objectives, a list of necessary actions and measures to achieve them and possible performance indicators in achieving the objectives has been made. The strategic objectives are listed in groups under the following strategic directions:

1) raising the quality;

2) harmonisation of study programmes with the needs;

3) increase in the efficiency of studying;

4) increase in the coverage and accessibility of academic studies;

5) internationalisation of academic studies;

6) mobility of students;

7) modernisation of the organisation of academic study.

Here is the list of measures necessary to achieve these objectives, which are a part of the characteristic traits. Certain measures affect multiple traits and objectives, but are listed within those which provide the greatest impact.
<table>
<thead>
<tr>
<th>Raising quality</th>
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<tbody>
<tr>
<td><strong>Strategic objectives</strong></td>
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<tr>
<td>Develop a comprehensive quality assurance system (QAS)</td>
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<tr>
<td>Encourage high-quality study programmes</td>
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<tr>
<td>Evaluate the quality of graduates</td>
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| Harmonisation of study programmes with the market needs |
|----------------|----------------|----------------|
| **Determine the needs of the economy and society** | Establishing an institution able to determine market demands and estimate the future needs of the Republic of Serbia in a professional and qualified manner | Periodic reports on the requirements of the market, Annual estimates of the future market needs of the Republic of Serbia (five years ahead) |
| **Harmonisation of study programmes with the needs** | At accreditation, all study programmes, through learning outcomes, need to demonstrate their coordination with the qualifications necessary for performing the work for which the study programme educates students | Introduction of an improved standard proving the relevance of the study programme |
| **Encourage the creation of programmes in high-priority areas** | Use financial incentives from public sources to direct students towards study programmes that are in line with the set priorities | Adoption of the legal solution for these financial incentives |
| **Position the BAS more clearly** | Provide more permanent, but relevant knowledge (academic and general education, theoretical-methodological and scientific-technical subjects), but also enable the students to apply the gained knowledge in a specific field or discipline, Up to 20% ECTS elective courses (professional-applicable subjects) that provide specialised and applicable knowledge, Ability to learn and adjust to the work requirements | Students who have completed BAS easily adapt to the job requirements |
**Position the MAS more clearly**

Provide more in-depth and advanced knowledge in the specialised field that includes both theoretical and applied knowledge, a high level of analysis, critical evaluation and professional application of knowledge, and the ability to solve complex problems, independent and analytical reasoning. At least 30% ECTS elective courses. Applicability of one-year modules for flexible creation of one-year and two-year studies. Application of personalised teaching and learning. Recognition of non-formal learning and experiential knowledge in accordance with the relevant regulations and criteria.

Students who have completed MAS are qualified for the most complex professional jobs. Application of personalised learning methods. Rules for the recognition of non-formal and experiential knowledge.

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**Adult education and lifelong learning**

Enable employed students partially to complete a study programme and complete it later in full if they want (gradual studying). Training programmes for adults, particularly the employed ones.

The possibility of a partial acquisition of ECTS credits using the method of gradual studies. Training courses tailored to the employed.

**Directing and helping students in professional orientation**

Establishment of centres to help students in their professional orientation.

Number of universities with established and operational centres to help students.

**Study programmes and HEIs are of great importance to the society**

Special funding of study programmes and HEIS that are particularly important for social and cultural development and security of Serbia, as well as of HEIs which cannot survive in the market but their work is of general interest.

Adoption of HEI programmes and programmes that have obtained a status of particularly important institutions for social and cultural development and security of the Republic of Serbia.

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<th><strong>Increase the efficiency of studying</strong></th>
<th><strong>Strategic objectives</strong></th>
<th><strong>Actions and measures</strong></th>
<th><strong>Performance indicators</strong></th>
</tr>
</thead>
</table>
| **Stimulate students to complete their studies faster** | Financial incentives for faster studying  
Any kind of (co-) funding from public sources applies only to students who earn 60 ECTS per year | The average duration of studies is one year longer than envisaged by the study programme, and during that period of time at least 70% of students complete their studies. |
| **Accelerate studying by contemporary teaching** | Application of active learning methods, the “Student in the center of learning” principle, and constant work of students during a semester  
Development of creativity and entrepreneurship among students  
Personalised learning | Faster studying (as above)  
Only 15% of students drop out  
The number of newly established companies and graduates |
| Better preparation of new students for the studies | Introduction of the final graduation exam | Number of study programmes with organised preparatory classes 
Up to 10% retention of students in the first year |
| --- | --- | --- |
| **Greater openness, coverage and accessibility of academic studies** | | 70% of students who enter the studies, enroll at BAS 
50% of secondary school students go to comprehensive schools 
95% of those with completed comprehensive schools enroll at BAS 
All students who study in priority fields have some form of financial support from public sources. Increased enrollment of students from socially vulnerable groups |
| Greater enrollment at academic studies | Increase the number of students from comprehensive schools 
Strengthen the cooperation between secondary schools and HEIs (student competitions, workshops, additional classes, etc.) 
Organised promotion of the BAS programmes in secondary schools 
Provide financial support from public sources as much as possible among students, according to their success in education and social status, especially for socially vulnerable groups | |
| **The internationalisation of academic studies** | |  |
| Offer of academic programmes in foreign languages | Establish study programmes for foreign students 
Provide special financial support from public sources to universities which develop study programmes for foreign students 
Adopt standards for study programmes designed for foreigners | At least 10% of students at academic studies are from abroad |
| Increase the number of joint study programmes, particularly master studies with foreign universities | Adapt the standards and requirements for accreditation of joint study programmes to their specific features | Increased number of joint programmes with foreign universities and the number of students in them |
| Increase the mobility of teachers in the EHEA countries | Simplify administrative requirements for a temporary stay of foreign teachers who want to teach in the Republic of Serbia 
Support temporary visits of teachers from the Republic of Serbia to the EHEA countries for teaching and scientific training | Number of foreign teachers working temporarily in the Republic of Serbia 
Number of teachers working temporarily at HEIs in the EHEA countries for the purposes of teaching and research |
| **Increase of student mobility** | | |
| Increase the mobility of students between BAS programmes in HEIs in Serbia | Allow, by the regulations, horizontal and vertical mobility of students between the academic study programmes in HEIs in Serbia | The number of students participating in mobility projects within the higher education system |
| Mobility to/ from foreign HEIs | Simplify administrative procedures for foreign students coming to Serbia  
Support the students from the Republic of Serbia in their studies in EHEA countries for one semester to one year  
Simplify and accelerate the recognition of foreign diplomas, in accordance with the principles of the Lisbon Recognition Convention | Number of foreign students at HEIs in Serbia  
Number of students from Serbia at HEIs in EHEA countries |
|-------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------|
| **Modernisation of the organisation of academic studies** | Providing opportunities to students who have completed three years of BAS to acquire a degree with the title of “Bachelor” after the 4th year of study.  
The possibility of modularisation of master studies with a view to flexible forming of one-year and two-year master studies (with 60 or 120 ECTS) | Students from the three-year studies, after the first year of MAS, can get a degree “graduated” if the first year of MAS is in the same discipline as BAS |
| | Acquiring a certificate from 30 to 60 ECTS  
Introduce the possibility of organising short-cycle programmes with 30 to 60 ECTS | Students gain narrower qualifications  
Training of employees by using short-cycle programmes |
| | Increase the competences of teaching staff  
Provide additional education and training of pedagogy teachers  
Define the conditions for the selection of teachers so as to encourage their research and achievement of results in teaching | Number of teachers with the additional education in pedagogy  
Number of teachers who have works of M20 category |
| | Specific models of academic studies for certain professions  
Integrated Academic Studies (IAS) with 300 ECTS for teacher education  
IAS with 360 ECTS for students of medicine and veterinary medicine  
Application of specific models of academic studies for regulated professions | Coordinated models of studying for certain professions in accordance with the practice in the EHEA countries |
| | Take into account the specificities of education in the field of art  
Review the existing and introduce special accreditation standards  
Define the minimum workload of teachers  
Harmonise the titles of graduates according to their professions  
Harmonise previous levels of art education with higher education  
Harmonise conditions for entrance exams at the faculties of (different) arts  
Enable, by legal regulations, that students of the faculties of arts who complete the BAS can be employed in pre-school education and in the lower grades of primary education  
Apply 3 +2 model of academic studies  
Provide faculties of arts with appropriate material funds and adequate working premises  
Allow greater mobility of students during the BAS and MAS | More favourable and adequate conditions for studying in the field of art |
5. Necessary Changes in the Academic Studies Environment

1) Directing the economic development of the Republic of Serbia to the knowledge-based economy, in which academically-educated people can provide themselves with adequate jobs;

2) A special institution will professionally and in a qualified manner follow the demands of the labour market and make estimates of the future needs of the Republic of Serbia regarding the qualifications of the employees, and will publish periodic reports with their findings according to which the HEIs will direct their education services, i.e. study programmes and education capacities;

3) Prepare and implementing the NQF, adjusting the classification of occupations, occupational nomenclature, a list of qualifications for certain occupations, etc.;

4) It is necessary to adjust the rules for the arrival of foreigners in the Republic of Serbia to study and to work (simplification of the visa regime, permits, health insurance, and other conditions of labour relations);

5) Legal regulations in the field of labour and employment should be changed to support the specific needs of universities (work of doctoral students, work even after the acquisition of pension rights, etc.);

6) Consistent implementation of legislative changes to meet the needs of the implementation of this strategy.

6. Strategic Interactions of Academic Studies with Other Systems

The most important are the relationships of academic studies with the secondary education, vocational studies, the research system and the economy.

*Academic studies – secondary education:*

1) Improve the quality of secondary education, increase the number of students in four-year secondary schools, especially in comprehensive schools (since they primarily prepare students for academic studies);

2) A common organisation of various forms of additional classes for interested students (courses, workshops, projects, etc.);

3) Common organisation of student knowledge competitions.

*Academic studies – vocational studies:*

1) Allow horizontal and vertical mobility between academic and vocational studies at various levels of studies;

2) Cooperation in the harmonisation of study programmes, with clear emphasis on the specific traits of academic and vocational studies, so that new students have a clear choice in determining the paths of their education;
3) Creation and development of a student mobility programme (conditions for the mobility of students) for moving from the vocational to academic studies and vice versa, and cooperation so as to support students who want to move from one type of studies to another;
4) Joint applied and development research, with the participation of the economy factors and holders of developmental projects.

**Academic studies – a research system:**

1) Doctoral studies and doctoral research projects receive adequate financial support from public sources and have an important role in the research system of the Republic of Serbia;
2) The development and networking of teachers and researchers at HEIs to create joint laboratories, to obtain the status of centres of excellence and attract domestic and foreign companies for various forms of cooperation (joint establishment and maintenance of centres or laboratories, long-term programmes of joint research, etc.).

**Academic studies – the economy:**

1) Harmonisation of academic study programmes with the needs of the economy, as well as cooperation in the implementation of practical training of students, so that students at university acquire more knowledge, skills and competences that are relevant to employers’ needs;
2) Additional formal and non-formal education of employees in the economy in order to meet the new demands of the jobs they do or those they want to find;
3) Engagement of distinguished experts at HEIs, not only as guest lecturers, but also in the positions of external university teachers, but having in mind that an external professor may be appointed to this position although he/she does not have a PhD, and with the purpose of teaching the subject in the field in which he/she has produced significant results in practice;
4) Joint work on innovative projects which are implemented in the innovation centres at HEIs, and where students and experts from business organisations are engaged, with the aim to implement the ideas which can lead to innovation;
5) Joint applied research and development, wherein university resources are appropriately used (additional education, research activities, joint laboratories, engagement of teachers and students, and others).
6) Work on securing the conditions that will enable each university to establish at least one business incubator to help entrepreneurial initiatives of their graduates and, thus, contribute to the creation of new industries based on scientific knowledge.
III. DOCTORAL STUDIES

The mission of doctoral studies is to provide new knowledge through the primary role of science at universities, to develop and promote research potential, train teaching staff for the higher education and top experts in all other fields, and thereby contribute to the general development of knowledge, rapid scientific and technological development, cultural promotion and preservation of the national identity.

Doctoral studies are a long-term investment in the intellectual potential, their function is to transform gifted students into trained researchers, qualified to perform tasks which require the highest level of knowledge and skills.

1. The Vision of the Doctoral Studies Development

The key strategic features of doctoral studies are: coverage, quality, relevance, and efficiency, and specific characteristics which set this level of education apart from all the other levels in the Bologna process: the research outcomes, the research environment and international openness.

The development of a knowledge-based society, and the implementation of general and specific strategic decisions of Serbia are based on the improved research potential of the country achieved through doctoral studies.

Coverage

1) The enrollment of students is conducted in accordance with the research capacities of universities, as determined by the established priorities of scientific and technological development and employers’ demands;

2) At least 10% of students who complete master studies continue to doctoral studies;

3) Gifted and talented students have the necessary prerequisites for research work and progress.

Efficiency

1) The number of students who complete doctoral studies within the scheduled period is at least 200 doctors of science per million residents;

2) At least 60% of students enrolled at doctoral studies complete them within the scheduled period.
Quality

1) Institutions which offer doctoral studies are responsible for their quality;
2) Quality is determined according to the standards in the EHEA countries and improved Standards for accreditation and self-evaluation of doctoral studies;
3) The quality of doctoral studies is based on the indicators developed for each discipline, on the adoption of professional ethics and raising the awareness of the accountability of scientists towards the values of humanity and the natural environment;
4) The overall research result of students and institutions is assessed;
5) The progress of students enrolled at doctoral studies is systematically monitored and encouraged;
6) Doctoral programmes are conducted in full transparency.

Research Outcomes

1) All universities and faculties have organised researches (their own, national and/or international projects), with subjects covering the field of doctoral studies and in which students may carry out their research;
2) Scientific and artistic values of doctoral dissertations satisfy the standards set forth at the national and international level, while each doctoral dissertation makes an original scientific or artistic contribution, judged by independent experts (domestic or international) within the field of research;
3) All scientific-research institutions, which offer doctoral studies, achieve the growth of research excellence through: publications, citations, the number of patents and their implementation;
4) In the field of art, a new concept of doctoral studies has been developed which follows modern trends in the world.

The Research Environment

1) Doctoral studies encompass all research and material resources at the disposal of universities and institutes;
2) University teachers and researchers engaged in the realisation of doctoral studies have achieved internationally recognised results in fields in which the students are pursuing their doctoral dissertations;
3) Every student has the pertinent research environment and a competent mentor, and scientists from our scientific diaspora are included in the doctoral studies;
4) Organised “Doctoral Schools” are recognisable in the European educational system;
5) Special measures will encourage inter-university doctoral studies in order to merge resources and improve the quality of doctoral studies.

International Openness

1) At least 10% of study programmes for doctoral studies are joint programmes with foreign universities;
2) Foreign teachers participate in teaching and mentorship;
3) Foreign students study at our universities;
4) International research projects have provided mobility for teachers and students, every fifth student participates in a mobility programme;
5) Students at doctoral studies are engaged in every international project;
6) At least 10% of study programmes are conducted in English, or some other foreign language.

Relevance

1) Study programmes are modified and comply with the jobs and needs of the public sector, industry, trade and service industries;
2) Interdisciplinary or multidisciplinary study programmes have been developed to steer doctoral students toward jobs which are not in the research field, and yet require a high level of innovation;
3) By 2020, around 40% of graduates of doctoral studies will have had the capabilities necessary to pursue a career in non-academic sectors;
4) Post-doctoral training for candidates who wish to continue a career in higher education is compulsory, which implies a temporary engagement of young Doctors of science in research projects at a given time and enable post-doctoral training as a new form of training of young Doctors of science.

2. The Current Situation in the Doctoral Studies System

Coverage and Efficiency

1) Student enrollment does not comply with the research capacities of universities and established priorities of scientific and technological development;
2) The number of persons who complete doctorate studies per year ranges between 65 and 75 per one million people, which is much less than the average in the ERA;
3) Preparing doctoral dissertations in the past (before the introduction of doctoral studies according to Bologna process) lasted much longer than three years.

**Research Outcomes**

Doctoral study programmes are implemented at faculties within 18 accredited universities, and research work in national and international projects is organised at 70% of faculties which belong to accredited universities, but having in mind that from the total of 5,000 students who are currently studying at accredited universities, 47% are involved in research projects that are funded from the budget.

Currently, only a part of defended doctoral dissertations has original scientific or artistic contribution, and reviews of independent national or international experts. There are standards for assessing the quality of a doctoral dissertation, but many universities do not comply with them. There are no mechanisms that can influence this phenomenon.

In the recent years, there has been an impressive increase in the number of publications in international peer-reviewed journals, but they come from a small number of scientific-research institutions, so out of the total number of publications, 70% of papers are published by researchers from 25 institutions, and there are 176 of them. Currently, there are very few patents and innovations. Our universities are not on any of the lists of ranked universities because they still have insufficient scientific production, they generally have a lot of students per teacher, and do not reach the other quantitative parameters that are relevant in the ranking.

In the field of arts, doctoral studies are available in all fields, which has not been recorded in other educational systems of countries belonging to the EHEA.

**The Research Environment**

Current students are not always provided with the adequate research environment, and are often without competent mentoring, due to the low capacity of individual research institutions, lack of development of some fields of research and disunity, with doctoral studies being organised at faculties that only in some cases collaborate with the institutes.

A certain number of study programmes involve teachers who do not meet the minimum required standards, and do not have adequate number of publications in international periodicals. A certain number (20%–30%) of doctoral programmes is organised with a very small number of mentors (three to five), or with a bigger number of mentors who can hardly meet the requirements of the minimum standards for accreditation, so that doctoral students do not have adequate research environment.
Our scientific diaspora consists of several thousand researchers working at major research institutions in the world, but few of them are engaged in doctoral studies in the country.

Despite the fact that in some fields remarkable results of research carried out at the institutes are achieved, the research has not systematically been involved in doctoral studies, and some university centres do not have a critical research mass for the organisation of high-quality doctoral studies in specific fields.

**International Openness**

The higher education system in the Republic of Serbia is closed, a number of joint study programmes with foreign universities and the number of foreign students are negligible, and the mobility of both teachers and students is very low.

An extremely low percentage (less than 0.5%) of doctoral study programmes is accredited to be implemented in English, and there are no joint study programmes between our universities and renowned foreign universities. Currently, a larger number of international projects are being implemented in our country, engaging doctoral students in some of them, but the scope and number of international projects are still insufficient, and the mobility of teachers and students is not systematically resolved, there are no strategic decisions, there are no financial and administrative prerequisites necessary for the implementation of the said mobility.

**Relevance**

At this moment, doctoral programmes are almost completely isolated within one faculty and one scientific discipline. A number of study programmes with multidisciplinary or interisciplinary outcome, which educate students for broader areas of work and career development, is negligible. The study programmes that contribute to directing doctors of science towards working in the non-academic sector, and which require a high level of knowledge, skills and inventiveness, have not been implemented at any university. Now, a sufficient level of research and other professional skills necessary for the selection to teaching positions in higher education is not reached by the completion of doctoral studies.

The development of doctoral programmes is not connected with the labour market and the requirements of the employers.

**Quality Assurance**

HEIs, guided by the principle of meeting the minimum requirements of accreditation, have enrolled students in study programmes without taking care of
whether they have actually provided the working conditions and mentors, and what chances the graduates of doctoral studies have for employment.

The quality of doctoral studies is based on a few basic standards for accreditation and self-evaluation, and specific indicators for each discipline have not been developed. Particularly there are problems in the field of humanities and arts.

The evaluation of the results of research institutions is conducted only on the basis of accreditation standards of scientific-research institutions that are general and not very precise, and since the doctoral studies have only recently been introduced, methods and criteria for the evaluation of the complete work of doctoral students have not been developed yet.

Study programmes of doctoral studies are limited to 180 ECTS in three years, and the general opinion is that it is a very short period of time.

At most universities, doctoral studies do not have full transparency, no published data on dissertations, mentors, etc.

3. SWOT Analysis Findings

**Internal Strengths**

Serbian Academic Community has an extensive experience in the education of doctors of science.

Upon the introduction of doctoral studies as the third cycle of the Bologna process, the interest of students to continue their studies at the level of doctoral studies has significantly increased.

There is a continuous growth of research excellence in Serbia, which is reflected in the number of papers in SCI, SSCI and AHCI and in citations.

In the recent years, the research infrastructure has been improved, while important purchase of modern equipment and the construction of major infrastructure facilities in all university centres are underway.

**Internal Weaknesses**

1) The Republic of Serbia is among the countries with the largest “brain drain”;
2) Research facilities are disunited;
3) Research, on the very small scale, leads to patents and innovation;
4) There is little representation of applied research;
5) Faculties do not comply with the existing standards, and the willingness to accept quality improvements through the introduction of more stringent standards is at an unenviable level;
6) Doctoral studies are not directed toward the jobs in non-academic sector and in the labour market.
External Advantages

1) Further development and intensification of international cooperation through the participation of our research teams in FP7 initiatives and in 2020 Horizon and bilateral projects, will contribute to the quality of research, international competitiveness and improvement of doctoral studies;

2) Significant investments in infrastructure facilities and science and technology parks (Belgrade, Nis, Kragujevac, Novi Sad, Centre for Nanosciences, Centre for Stem Cells), as well as the funds that will be gathered through the Fund for Innovative Activities, will create a better basis for engaging both doctoral students and young Doctors of science in research and technological development;

3) Taking advantage of training programmes through Erasmus, Erasmus-mundus, Leonardo da Vinci and Marie Cirie campaigns.

External Disadvantages/Risks/Hazards

1) Underdeveloped social awareness of the need to educate, through doctoral studies, specialists of the highest level of education needed in all spheres of life and work;

2) The labour market does not recognise doctoral studies as the highest educational level;

3) In other sectors, the need for Doctors of science has not been expressed;

4) EU countries have a strategy to attract the most talented students to doctoral studies, so they introduce a SCI visa and provide excellent conditions for research – it will further affect the departure of students from Serbia.

4. Doctoral Studies Development Strategy

Main challenges and orientation of the strategy are:

1) Including the research of each student during doctoral studies into the research project, domestic or international; this rule should be embedded in the strategic documents of HEIs, accreditation standards and internal quality assessment;

2) Consolidating higher education and research, carrying out the functional integration of the university and making a connection with research institutes and a network connection of certain fields between universities.
5. The Strategy for Achieving the Vision – Policy, Actions and Measures

<table>
<thead>
<tr>
<th>Strategic objectives</th>
<th>Performance indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESEARCH OUTCOMES</strong></td>
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<tr>
<td>All universities organise scientific research; art universities organise art research and artistic work. Continuously strengthen the research capacity and excellence of universities</td>
<td>Adopted strategies and action plans of science and research development of universities</td>
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<tr>
<td>Doctoral studies are a part of organised scientific research work</td>
<td>University strategy</td>
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<tr>
<td>Each doctoral dissertation is carried out within its own, national or international research project</td>
<td>Number of publications, patents and innovations</td>
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<tr>
<td>Encourage successful institutions and individuals through: further funding of research, acquisition of new research equipment, advantage when applying for new projects</td>
<td>The increase in the number of publications. Increased number of innovations and patents. Increased number of Doctors of science. Annual awards for best university dissertation and most successful researchers</td>
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<tr>
<td>Introduce rewarding of successful scientific-research institutions and individuals</td>
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<tr>
<td>Use funds from other sources to improve the conditions for research (new equipment, work space, etc.), for greater extent of training in foreign countries and to improve the personal standard of PhD students, etc.</td>
<td>The number of international projects, study tours, visiting university teachers at foreign universities Research infrastructure</td>
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<tr>
<td>Redefine doctoral studies in the field of art, enhance and harmonise them with modern trends in the world, and with the needs of our HEIs, art institutions and cultural institutions Implement a comprehensive discussion with the participation of artistic and academic public and employers: define clear goals and outcomes of doctoral studies in the field of art</td>
<td>Standards for accreditation of doctoral studies in the field of art Innovated and modified study programmes</td>
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<tr>
<td><strong>RESEARCH ENVIRONMENT</strong></td>
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<tr>
<td>Increase the critical mass of research resources through various forms of functional integration of universities and government institutes Establish a research network between universities. Include some institutes in universities Establish National Institutes</td>
<td>Migration and exchange of teachers and researchers Number of joint research projects and study programmes Number of government institutes which are a part of universities National Institutes</td>
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<tr>
<td>Establish a system that allows and promotes inter-disciplinary, multidisciplinary and joint study programmes within and between universities</td>
<td>Standards for accreditation of inter-disciplinary and multi-disciplinary study programmes. Number of inter-disciplinary and multi-disciplinary joint study programmes</td>
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<tr>
<td>Constantly innovate equipment for research</td>
<td>State of the research infrastructure</td>
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<tr>
<td>Organise “Doctoral Schools” in the fields that are attractive at regional and international levels. Enable national institutes, within the university, to conduct studies in the “Doctoral School” in fields where there is a favorable research environment (exceptional equipment, research results and staff of renowned reputation) Direct “Doctoral School” towards foreign students and organise classes in English</td>
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<tr>
<td>The Law on Higher Education and Scientific Research Number of developed doctoral schools and their international recognition Greater number of competent mentors in the field</td>
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<tr>
<td>Conﬁgure doctoral studies in the ﬁeld of upbringing and educational policy into a “national doctoral school” with the participation of all state universities. Provide adequate ﬁnancial support for the same</td>
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<tr>
<td>The Law on Higher Education and Scientiﬁc Research Standards for accreditation</td>
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<tr>
<td>Enable universities and faculties which do not have the critical mass of university teachers with international recognition in the ﬁeld of doctoral studies (less than 10 university teachers) to offer studies through joint study programmes</td>
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<tr>
<td>The Law on Higher Education and Scientiﬁc Research. Standards for accreditation of universities Joint study programmes</td>
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<tr>
<td>Connect doctoral studies in certain ﬁelds in a network and allow for mobility, within the system, of professors and students</td>
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<tr>
<td>Joint study programmes, utilisation of research equipment, exchange of teaching staff accreditation standards</td>
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<tr>
<td><strong>RELEVANCE</strong></td>
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<tr>
<td>Modify the existing programmes and create new ones by introducing contents through which they develop: leadership, inventiveness, innovation and orientation towards entrepreneurship</td>
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<tr>
<td>The number of Doctors of science who pursue careers in non-academic sectors The number of new and modiﬁed study programmes The degree of meeting the needs of the labour market</td>
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<tr>
<td>Intensify cooperation with the business and public sectors; form consulting teams for the development of new study programmes Include prominent experts in the non-academic sector, especially if forming “professional doctorates”. Involvement in the industrial doctorates action – European Industrial Doctorates – Marie Curie Actions.</td>
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<td>The number of study programmes The number of students</td>
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<tr>
<td>Introduce compulsory postdoctoral training for those doctors of science who want to pursue an academic career Develop a system of ﬁnancing (national and international funds and projects, etc.) Engage every domestic student in the teaching process for at least one semester, with a minimum of four hours of training</td>
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<tr>
<td>The Law on Higher Education and Scientiﬁc Research</td>
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<tr>
<td>Enable young doctors to begin their own independent research projects, work within technology parks, innovation centres, centres for research excellence and development, and “spin-off” companies</td>
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<td>The number of patents and innovative solutions The number of awards for the best patent and innovation</td>
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<tr>
<td>Open positions for the highest level of qualifications, both in higher education and in scientific-research and cultural institutions, the corporate sector and other fields in which doctors of science should have a leading role</td>
<td>The degree of employment of Doctors of science National Qualification Network</td>
</tr>
<tr>
<td>Define jobs, in the public sector, which require the highest level of knowledge and skills gained during doctoral studies</td>
<td>Defined jobs that require the highest level of knowledge and skills gained during doctoral studies</td>
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<tr>
<td><strong>INTERNATIONAL OPENNESS</strong></td>
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<tr>
<td>Adopt a national strategy which includes mobility of foreign and domestic university teachers and students</td>
<td>Mobility Strategy in Higher Education Strategy for mobility of university teachers and students</td>
</tr>
<tr>
<td>Establish mechanisms to support the mobility of Serbia’s best students and the arrival of good students in Serbia</td>
<td>Simple and transparent procedures for obtaining scholarships and other forms of support</td>
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<tr>
<td>Establish support systems for the participation of university teachers and students in international research projects, with student mobility being directly tied to their dissertations, while the teaching staff mobility will depend on rules for promotion. Intensify all activities related to various European initiatives, such as: FP or Erasmus, Erasmus Mundus, etc.</td>
<td>The number of international projects Increase in the exchange of teaching staff Fund for International Cooperation The number of students who migrate abroad and the number of foreign students in the Republic of Serbia</td>
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<tr>
<td>Develop mechanisms and conditions for the engagement of foreign university teachers and researchers</td>
<td>The number of foreign university teachers and researchers</td>
</tr>
<tr>
<td>Establish regional cooperation between Western Balkan countries as an example of good practise in regional mobility Resolve administrative difficulties related to the residence and working status of foreigners so as to ensure their participation, studying and employment in higher education institutions</td>
<td>Agreements on Bilateral Cooperation Bilateral Research Project Amendments to legal regulations</td>
</tr>
<tr>
<td>Joint study programmes with international universities; joint or double degrees Introduce study programmes in English and other foreign languages</td>
<td>The number of joint study programmes The number of doctors in joint study programmes The number of study programmes in English language</td>
</tr>
<tr>
<td><strong>COVERAGE</strong></td>
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<tr>
<td>Align the admission policy to the actual research capacities of domestic higher-education institutions; provide every student with the necessary conditions for work (inclusion in a research project, a competent mentor, working place, a place in the laboratory and equipment), all verified through accreditation</td>
<td>The strategy of scientific development of the university Standards for accreditation of doctoral studies An act governing the funding of doctoral studies and doctoral students</td>
</tr>
<tr>
<td>Coordination of students, studying in particular fields with strategic priorities, while encouraging students to pursue natural and technical-technological sciences which are of great importance for scientific and technological development of the country</td>
<td>Action plan for the implementation of the relevant strategic documents</td>
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<tr>
<td>Develop a comprehensive financing system for funding doctoral studies for those students who have achieved extraordinary academic results and have shown tremendous gift for research work through their previous education, and motivate their personal and professional development in the country while gaining international recognition for their work</td>
<td>An act governing the funding of doctoral studies and doctoral students</td>
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<td>The number of doctoral students financed from the budget</td>
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<td>Annual report on the achievements in doctoral studies</td>
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<td>Give the status of young researchers to doctoral students</td>
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<td>Define mutual rights and obligations of doctoral students and higher education institutions</td>
<td>An act governing the funding of doctoral studies and doctoral students</td>
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<td>Agreements on mutual rights and obligations of doctoral students and higher education institutions</td>
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<tr>
<td>Increase the coverage by a developed system of funding, and by 2020, include a minimum of 10% of the students who have completed master or integrated studies</td>
<td>The act governing the funding of doctoral studies and doctoral students</td>
</tr>
<tr>
<td>Enrollment of foreign students and of students from the countries in the region (use our comparative advantages – a series of developed research fields) which will, to a certain extent, contribute to strengthening the material bases of the universities</td>
<td>Mobility Strategy in Serbian Higher Education</td>
</tr>
<tr>
<td><strong>EFFICIENCY</strong></td>
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<tr>
<td>Constantly monitor progress and encourage the progress of each enrolled doctoral student</td>
<td>The Law on Higher Education and Scientific Research</td>
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<td>The number of students who completed their doctoral studies within the expected time</td>
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<tr>
<td>Redefine the duration of doctoral studies, and in the fields where necessary, extend the doctoral studies to four or five years</td>
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<td>Perform structural changes</td>
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<tr>
<td>Extend research</td>
<td>Statutes of the universities</td>
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<td></td>
<td>The Law on Higher Education and Scientific Research</td>
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<tr>
<td><strong>QUALITY</strong></td>
<td></td>
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<tr>
<td>Apply European Standards and Guidelines (ESG); strengthen the mechanisms of internal quality control</td>
<td>University publications in accordance with ESG</td>
</tr>
<tr>
<td>Develop criteria and mechanisms for systematic monitoring, evaluation and promotion of the results of scientific research of institutions, doctoral students and all persons engaged in education and research process</td>
<td>An act on the classification and ranking of higher education institutions</td>
</tr>
</tbody>
</table>
A code of ethics in higher education and research | A code of ethics accepted and established in all higher education institutions
---|---
Improve the quality assurance system. Introduce specific quality indicators for each educational-scientific and educational-artistic fields and disciplines (research outcome, the efficiency of completion of the studies, the number of doctors in relation to the number of the registered students, etc.) | Improved standards and procedures for the accreditation of doctoral studies Quality indicators for educational-artistic fields and disciplines
Increase the number of teachers who have research competences and internationally recognised results In addition to the university teachers and researchers in the relevant profession, mentors may also be members of SASA and retired research-active teachers. Carry out the appointment of mentors (in Frascati scientific fields) on the country level, using uniform criteria and procedures. Advertise the appointment of teachers and researchers through the EURAXESS network over which international mobility of teachers is achieved | The Law on Higher Education and Scientific Research Adopted and applied criteria for appointments of teachers at university Register of Teachers Adopted specific criteria for the appointment of mentors. Register of Mentors
Doctoral dissertation: Observe the adopted standards regarding the outcome of doctoral dissertations Introduce international reviews of doctoral dissertations (reviewers may be our own scientists from the diaspora or foreigners in case of dissertations written in English) and a register of doctoral dissertation Mandatory publishing of the topic of the doctoral dissertation, the competences of the mentor and contents of the defense in an electronic form | Uniform rules on doctoral dissertations Register of doctoral dissertations Database for doctoral dissertations in the Republic of Serbia

### 6. Necessary Changes in the Doctoral Studies Environment

1. Establish an adequate and sustainable funding that must include: funding of research (including research equipment and research costs), funding of education, supervision and mentoring, and financing of doctoral students through scholarships or salaries – for doctoral students working at HEIs;

2. Provide doctoral students with basic rights arising from the work – the right to salaries, health and pension insurance – the copyrights and patent rights arising from their research, because they are researchers-beginners who make the basic labour force in research jobs; funding from public sources selectively allotted to specific priority fields; stimulate, through specific incentives, the economic sector to invest
in doctoral studies; and through partnerships between universities and other institutions and funds, establish other forms of financing;

3) By a reform of the entire pre-university education, reduce the proportion of reproductive knowledge, and increase the contents that develop creativity in students, critical thinking and the tendency to research and, at all levels of education, create conditions for the experimental teaching and teacher training;

4) Continuously develop and promote the work of the talented, provided that universities can establish special programmes for talented students and, to the fullest extent, intensify cooperation with institutions such as Mathematics and Philological Comprehensive Schools, with research stations (Research Station Petnica) and the Centre for the Promotion of Science, with a view to the unification of all funds that support talents;

5) Provide the students of the basic, and especially those at the master studies, with an opportunity to get acquainted with the research through independent projects; and at the university level, establish a fund which will provide support to the outstanding undergraduate students for scientific and research work during their studies;

6) At the level of the faculty, define research projects and within them, through a public invitation, include students; affirm, encourage and reward students research work; enable them to participate in national and international scientific meetings.

7. Strategic Interactions of Doctoral Studies with Other Systems

General Interactions of Doctoral Studies with Other Systems

Continuous exchange of students and staff between HEIs, economy, culture and other sectors should be encouraged. Structures and procedures should be established, in which the wider community participates in various activities related to doctoral studies, which involves designing the modules and study programmes, their audit and accreditation. Doctors of science must be recognised in the labour market and acceptable, for the jobs requiring the highest level of knowledge and skills. Qualifications ISCED (6 (1997) (8 2011)) levels need to be included in each sector.

Doctoral Studies – Economy

Raising the level of the country’s competitiveness and development of innovations present a direct link between the economy and doctoral studies. Through the cooperation of business companies, government and academic fields: factories
of future, energy efficiency and renewable energy, development of agriculture, i.e. technological platforms for the production of food – a new generation of doctors of sciences should be created, who are also trained for the development of new technologies and for the effective transfer of technologies and their incorporation into the production system of the Republic of Serbia.

Doctoral studies should be one of the bases for setting a national technological platform of the Republic of Serbia. Small and medium enterprises and other economic entities should be allowed to be relieved of tax under favourable conditions if they employ researchers and invest in research through doctoral studies. What should be mandatory is that projects which are directly related to the development of products and services and are financed from the funds (such as the Fund for Innovation Activity) must include doctoral students.

**Doctoral Studies – Health**

An entirely new system of organisation should be introduced in the field of medical science, which combines education, research and health care, and, thus, provides a functional link between the different institutions and systems of different ministries. Special regulations and standards should regulate doctoral studies in clinical medicine by introducing legislation that applies in EU countries.

**Doctoral Studies – Culture**

Research in the arts, humanities and social sciences is fundamentally important for the development of society, promotion of cultural identity and the preservation of national identity. Specific examples of the social and economic impact of research in the arts, humanities and social sciences can be seen in the direct impact on the performing arts, creative industries, financial services and tourism.

**Doctoral Studies – Environmental Protection**

The need for multi-disciplinary knowledge is most prominent in the field of environmental protection. The state should support, as much as possible, doctoral studies in this field because of the necessary changes that accompany a continuous development of standards for control, knowledge of environmental standards, the development of new recycling technologies, and higher needs for the production processes and products that are not hazardous to the environment. State institutions in charge of environmental activities would directly express the need for research in this field, direct their staff, through doctoral studies, toward acquiring a doctoral degree and would set requirements for universities to educate researchers in specific fields.
Modern public administration will require that all professional positions are filled by professionals of the highest level of knowledge and education. This is necessary to realise, not only because of the development of public administration and management in it, but also because of the management and development of public companies, and other businesses that will require modern educated professionals. To meet these needs, a strategic partnership of state bodies and institutions and universities that have research capacity to offer interdisciplinary research (in the field of law, economics, political science, management, ethics, information technologies) should be established. Improvement and modernisation of public administration should be achieved through improved human resources created through an adjusted and modern concept of doctoral studies.

IV. VOCATIONAL STUDIES

The mission of vocational studies is to provide, through promotion, transfer and exchange of knowledge, opportunities to the individual and society to benefit from the knowledge and skills aimed at the professional world and the labour market.

1. The Vision of the Vocational Studies Development

The development of higher vocational education is aimed at achieving the desired state of the overall strategic features – coverage, quality, efficiency and relevance – and specific strategic characteristics – social recognition, cooperation with the environment, research activities and development of teachers. In the period up to 2020, the development of higher vocational education will reach the vision expressed by the following strategic features:

1. Coverage:
   (1) at least 30% of students entering the first year of basic studies enroll at vocational studies;
   (2) the scope of coverage is based on the geographical coverage of the network of higher vocational schools, aligned with the structure of the economy, at the regional and local level, and based on the diversification and flexibility of the study programmes;

2. Efficiency:
   (1) the average duration of studies will be one year longer than the scheduled time period and during that period of time at least 70% of students will have eventually completed their studies.
(2) students who drop out make no more than 15%;
(3) a larger number of higher schools for vocational studies is integrated into the academies of vocational studies;

3. **Quality**:

(1) within the NQf, the competences of graduated students of vocational studies have been defined clearly;
(2) vocational study programmes provide professional competences to their graduates based on learning outcomes and on long-term cooperation with potential users of their knowledge, and the method of teaching is oriented towards the achievement of practical knowledge and professional skills and abilities, with a curriculum in which practical training has an important place;
(3) significantly improved teachers‘ competences in the sense that all teachers have excellent practical knowledge, skills and achievements in the fields relevant to the study programme;
(4) the organisation of the educational process is based on a clear didactic and methodological approach;
(5) a system for measuring performance has been established based on European indicators;
(6) improved resources that enable students to acquire the necessary knowledge and practical skills, and in the fields in which master studies are performed, applied research is organised;

4. **Relevance**:

(1) **the relevance** of vocational studies (the concordance of the number and type of educational programmes with the needs of the labour market, requirements of the profession and student interests) has been increased by stronger connection of these studies to the economy and the public sector of the regional and local government;
(2) the participation of vocational studies in higher education is supported through a balanced structure and number of students financed from the budget;

5. **Cooperation**:

(1) vocational studies have been incorporated into the European associations EURASHE (European Association of Institutions in Higher Education); UASnet (European Network for Universities of Applied Sciences) and the Copenhagen Process and international cooperation in vocational education and training have established;
(2) increased participation in international cooperation projects in areas of education and pre-accession assistance – IPA, MIFF, MIPD;
(3) a long-term cooperation with the business world has been established;
4. in higher education, an institutional dialogue has been achieved with academic studies and cooperation in the field of education and research has been established;

6. Social recognition:
(1) a larger number of joint programmes with foreign HEIs has been developed;
(2) a coherent structure has been established for the two-stage studying harmonised with the Bologna Declaration – basic, specialist and master vocational studies, and the horizontal and vertical mobility of students between academic and vocational studies is possible, with the additional conditions defined by HEIs;
(3) vocational titles in the legislation that define the labour relations have been harmonised;
(4) Conference of Vocational Studies has become the backbone of organisation, representation, promotion and affirmation;
(5) Student Conference of the Academy of Vocational Studies has a significant impact on the status and development of vocational studies;
(6) titles of the teaching staff have been reconciled with the international practises and criteria for their selection;

7. Research and innovation activities:
(1) research activities take place in applied research, which is mostly performed in collaboration with the economy;
(2) research activities have become a structural element embedded in the organisation of higher vocational schools and are associated with the programmes of specialist and vocational master studies;
(3) increased volume of scientific and professional services and the number of active research staff;

8. Teaching staff:
(1) there are several teaching titles, all of them re-elective, and the conditions have been redefined for election, employment, assessment and re-election of teachers, specifically differentiated from those applied in academic studies;
(2) more than 50% of teachers have doctorates, relevant scientific or professional results in the field of their teaching, and other teachers have excellent practical knowledge, skills and results achieved during the work of at least three years in the field relevant to the study programme;
(3) evaluation, election and re-election of teachers is at the disposal of HEIs which have a “critical mass” for these activities in accordance with the guidelines set out in the Common Framework, and the public
election and application of uniform standards and criteria is provided;

(4) engagement of professionals from the economic and public sector in the implementation of study programmes, on one hand, and further education and training of teaching staff, on the other, allow two-way cooperation with the economy and higher quality of vocational education;

(5) a system for professional and pedagogical training and professional development of the teaching staff has been established.

2. The Current Situation in the Vocational Studies

Coverage

Vocational studies rely on a relatively large VET student base. The number of students in the secondary vocational education is 285,596 which is 80.1% of the total number of secondary school students. Unlike comprehensive school students, a significant number of students in the vocational secondary education do not continue their education and, therefore, in the structure of the unemployed under 29, 68.6% are persons with secondary education.

Enrollment quota of accredited study programmes is about 18,684 students. Since the enrollment quota of academic studies is approximately 32,500, this is about 35% of the total student enrollment quota per year. Total number of graduates in 2008 amounted to 40,330. Out of these, 36.1% (14,399 students) graduated from vocational studies. In the total number of budget-funded students (2009/2010) vocational studies were neglected. Universities educate 183,065, and vocational schools, 43,707 students. Out of these, at universities, 83,528 students (45%) are budget-funded, whereas only 15,081 students (35%) in vocational schools are funded from the budget. One reason for this situation is the fact that there is no defined policy on the number and structure of budget-funded students. The practice is to determine the number of students according to the already inherited situation, which is adjusted annually, based on the proposal of HEIs.

Higher vocational education has developed a network of 65 schools, 47 public and 18 private, located in most cities and municipalities. In many municipalities they are only institutions of higher education (Sabac, Pozarevac, Arandjelovac, Ćuprija, Aleksinac, Prokuplje, Pirot, Trstenik, Sremski Karlovci and Sremska Mitrovica). The exceptions are places where there are no institutions of higher vocational education, but there are institutions of academic studies (Pancevo, Sombor, Bor, Kraljevo, Novi Pazar and Jagodina). The number and geographic distribution of schools are aligned with the needs of the public and the economic sector.
Quality

Basic vocational programmes encompass all five scientific, vocational and artistic fields, in sectors where, in the labour market, there is a need for highly educated professionals.

Vocational studies are carried out within two cycles: basic vocational studies (180 ECTS, vocational BSc) and specialisation vocational studies (minimum 60 ECTS, vocational specialisation) are completed after a four-year education; currently, there are no possibilities of horizontal or vertical transfers to the academic studies.

Higher schools of vocational studies are independent HEIs which autonomously make study programmes, issue diplomas, select teachers, but do not always have the critical mass of teachers, which is reflected in the quality of the teaching process.

In the last period, higher schools of vocational education did not take advantage of the possibility to form academies of vocational studies.

Efficiency

Efficiency of studying is characterized by a significant drop-out rate, which is true for about 30% of students enrolled, and by relatively long studying – about five years. One of the reasons for the low efficiency is the fragmentation of these educational institutions – 65 relatively small institutions – leading to inefficient use of the teaching and administrative staff, library and laboratory resources, etc.

Relevance

Higher vocational education is a relevant subsystem of education, because, in the structure of the total population of Serbia aged 15 and over, 5.5% are people with higher education degree, 7.5% with the university, academy or college degree, 48.5% with a secondary education diploma, 22.6% with completed primary school, and 15.9% without primary education or with incomplete primary education. In the structure of the employed, 5.6% of the employed have a higher school degree, 7.5% university, academy or college degree, 55.9% with a secondary education diploma, 23.9% with completed primary school, and 6.3% with primary school or with incomplete primary education. Such a qualification structure of the labour force is not in line with the market needs. In Europe, on average, 30% of students are at higher vocational institutions, while in the Republic of Serbia, out of the total student population, there are only 19.3% of the students of vocational studies (2008/09 school year).
Higher schools of vocational studies have established, to a large extent, a cooperation with the economy, but due to the closure of many businesses, that cooperation has not been implemented to the extent that is required for high-quality vocational education. Previous cooperation with academic studies was very limited. Individual cases of exchange of teaching staff, participation in research projects, joint use of space and laboratory resources are not sufficient to achieve the overall mission of higher education.

Vocational studies do not participate sufficiently in the international cooperation or use assistance in the EU for projects in the field of education (Tempus, Erasmus, Erasmus Mundus, IPA, MIFF, MIPD, etc.). Modest results have been achieved in the mobility of teachers and students, in research and development of art work and teaching staff, in increasing the attractiveness and recognisability on the national and international level, in improving the material resources and in the improvement and development of academic programmes.

The largest number of institutions of higher vocational education are regarded as heirs of colleges which embrace a half-century tradition of vocational higher education and which have been included, through the accreditation process and the licensing, into the area of higher education in the Republic of Serbia. In the initial stage of the reform of higher education, the first step has been made towards institutional diversification. However, there has been no further development, programme diversification and compliance with good practice in the EHEA. By rulebooks on accreditation and quality assurance, guidance and interpretation of the National Council for Higher Education and the CAQA, the process is aimed at shaping the vocational studies according to the model of academic studies. There are several reasons for this. Firstly, the reform of higher education was implemented with the dominant influence of the academic community. Secondly, the system of vocational studies was ineffective in its own organisation, representation, promotion and recognition. The conference of the Academy of Vocational Studies was inaugurated only in 2011, and the Student Conference of the Academy of Vocational Studies in 2010. Institutional coherence and organisation of institutions of vocational studies are in its initial development phase. The conference of the Academy of Vocational Studies has not established all the necessary functions for the integration, representation and cooperation on the national and European level. Therefore, the objectives have not been fully achieved regarding the diversification associated with the increasing number of highly-educated young people, more flexible education system harmonised with the demands of the labour market, more efficient and more economical higher education, greater penetration of applied research in the world of vocations, etc.
The binary system of higher education has led to significant problems with the recognisability of vocational studies in political, social and academic environment, in the world of employment, and among the young. The labour market under-recognises qualifications and vocational titles borne by graduates, especially those of vocational studies. The classification of new vocations is inadequate, as employment services use classifications of professions accustomed to the vocations existing ten or more years ago. Thus, the NES uses the classification of professions from 1996, and for information about fields of work, occupations and educational levels, they use a unique nomenclature of vocations from 1990, and the codebook of vocations and qualifications from 1998. In this regard, there is a blatant case of vocational specialisation studies, which are not recognised as the second level of formal higher education even the EHEA.

Research Activity

In terms of representation and organisation of research work, the system of vocational studies is significantly inconsistent with the practice in the European and global non-university sector. Research activities are performed on a small scale while their contents mostly include publishing scientific publications, holding conferences, and publishing scientific and research papers and, somewhat less, applied and development research. Precise data on this activity does not exist. An extremely important problem is that the research activity has not been established as a structural element embedded in the organisation of institutions, and, thus, the following is missing: cooperation with the professional world, which enables the integration of knowledge and skills in the teaching process; contact with the professional world in which the institution of vocational studies could be an important partner in the field of innovation and application of the results of scientific and research work; and improving the quality of teaching staff and forming a young generation of teachers. Formal exclusion from scientific and research activities reduces the competitiveness of vocational studies in the service market.

Teaching Staff

The issue of teaching staff in vocational studies includes the following three questions: (a) whether it is enough to recognise the specificities of the required competences of teachers of vocational studies; (b), where, how and whether a sufficient number of teaching staff is trained; (c) what methods and instruments are available in the recruitment of teachers of required profiles?

Competences of teachers are reduced to a scientific title and results of scientific research, as defined in the existing standards and normative quality assurance practice. Specificities of the vocational studies, in comparison to the academic studies is that, along with the research and pedagogical capabilities,
professional competences in a particular field are very significant, as well as the practical experience in solving problems in the professional world. The issue of teacher competences necessary to organise an effective learning process is connected with the teaching methodology. A negligible number of institutions has implemented some form of teacher training in this field.

Renewal and development of the teaching staff is one of the major challenges these studies are facing. So far, the sources of the teaching staff were research institutions, development departments within large economic systems, own staff and staff from the university. As a result of dramatic changes in the structure of the Serbian economy, the possibilities for the selection of new teaching staff with relevant experience in the field are significantly reduced. In the future, the only real basis for the recruitment of personnel will consist of scientific and research staff who are attending the doctoral studies. Currently, 50% of teaching staff are masters of science, a degree in education that does not exist in the new system of university education.

At higher schools of vocational studies, there is no organised scientific and research work, nor are teachers involved in budget-funded projects.

The recruitment of high-quality teaching staff encounters limitations because the experts are more attracted to the economic sector than to higher vocational education. The possibility to promote the teaching staff is limited by a narrow selection of titles (lecturer and professor of vocational studies). Such titles are directly related to the scientific titles of master of science or doctor of science. Senior lecturer title, which existed until the reform and is widely represented in the world, does not exist in the legal nomenclature.

3. SWOT Analysis Findings

Internal strengths are:
1) relevance of the subsystem in terms of the accredited capacities, network of schools and number of students and graduates;
2) a half-century tradition of higher vocational education in the Republic of Serbia;
3) good cooperation with the economy and the public sector in teaching;
4) internationally comparable study programmes.

Internal weaknesses are:
1) lack of high-quality teaching staff with practical knowledge and limited abilities to recruit such a staff;
2) higher schools of vocational studies and the teaching staff are not involved in the organised research work;
3) lack of investment in maintenance and development of facilities, infrastructure and teaching aids;
4) low level of knowledge with which high school students enter higher vocational education.

External opportunities/advantages are:
1) EU education policy recognises and supports the importance of non-university higher education and encourages international cooperation and exchange;
2) reliance on a broad base of secondary vocational schools;
3) MoES policy on the enrollment of the population from the areas inhabited by the Serbian people.

External disadvantages/hazards are:
1) economic crisis and underdevelopment of the Republic of Serbia;
2) demographic trends, the decline in the number of young population;
3) undefined systemic and legal research and artistic activities of institutions of higher vocational studies;
4) non-compliance of the system of higher education with European practice in terms of vertical and horizontal mobility of students, and the fact that the second level of education (specialisation vocational studies) is not recognised in the European educational area;
5) lack of an effective monitoring system in higher education.

4. Vocational Studies Development Strategy

The Main Challenges and Strategy Orientation

As in the previous period, the challenges, which will be faced by the vocational studies development, are primarily related to the resistance to changes, from the external environment, and conflict of interest among certain interest groups belonging to HEIs (academic – vocational studies, private – state-owned institutions).

For the development of vocational studies it is important that an agreement is reached on the generally accepted views and beliefs. Firstly, the subsystem must be in accordance with the principles of a unified European educational space, and based on internationally recognisable and comparable grounds of a binary system of higher education. Secondly, it is necessary to establish a clear organisational and institutional diversification between the academic and the vocational studies.

The outcomes of the vocational studies must serve the purpose of achieving their mission, harmonised with the labour market and vocational needs, and strongly linked with the economy and the public sector.

The quality of vocational studies is based on the concept of learning outcomes and the necessary competences of graduated students.
The Strategy for Achieving the Vision – Policy, Actions and Measures

The vision of higher vocational education will be achieved through a consistent commitment to the implementation of the following strategic directions:
1) Cooperation with the environment;
2) Scientific research and artistic activities as a basis for further development;
3) Regulated environment;
4) An attractive and competitive subsystem of higher education.

<table>
<thead>
<tr>
<th>Cooperation with the environment</th>
<th>Strategic objectives</th>
<th>Key issues</th>
<th>Performance indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in projects on international cooperation in the fields of education and pre-accession aid</td>
<td>Transparency at the national level</td>
<td>The number of projects</td>
<td>The number of projects</td>
</tr>
<tr>
<td></td>
<td>Timely information</td>
<td>The number of institutions involved</td>
<td>The number of institutions</td>
</tr>
<tr>
<td></td>
<td>Training for developing high-quality requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The development of joint programmes with institutions abroad</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement in European associations</td>
<td>Memberships in EURASHE and UAS</td>
<td></td>
<td>Status within associations</td>
</tr>
<tr>
<td>Connections and collaboration with national bodies from the field of education.</td>
<td>The National Council for Higher Education</td>
<td>The number of initiated and processed initiatives</td>
<td>The number of initiated and processed initiatives</td>
</tr>
<tr>
<td></td>
<td>The National Council for Vocational Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Institute for Education Improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community of Secondary Vocational Schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expansion of cooperation with the business community</td>
<td>Contents and structure of study programmes</td>
<td>Number and percentage of revised curricula</td>
<td>Number and percentage of revised curricula</td>
</tr>
<tr>
<td></td>
<td>Competences of graduated students, learning outcomes</td>
<td>The number of issued professional standards or specific competences</td>
<td>The number of issued professional standards</td>
</tr>
<tr>
<td></td>
<td>Labour market needs</td>
<td>Analyses of the needs of the labour market</td>
<td>Analyses of the needs of the labour market</td>
</tr>
<tr>
<td></td>
<td>Cooperation in scientific research and artistic activities</td>
<td>The scope of the Law on Innovative Activities</td>
<td>The scope of the Law on Innovative Activities</td>
</tr>
<tr>
<td>Improving the communication with the Department of Higher Education within the Ministry of Education and Science</td>
<td>Papers on higher vocational studies for the purpose of presenting and resolving the problem</td>
<td>Number of raised and resolved issues</td>
<td>Number of raised and resolved issues</td>
</tr>
<tr>
<td>Neering into a dialogue with the academic subsystem and establishing cooperation</td>
<td>Educational activity</td>
<td>Identification of the field of cooperation, Memorandum of intent</td>
<td>Identification of the field of cooperation, Memorandum of intent</td>
</tr>
<tr>
<td>Scientific research and artistic activities as a basis for further development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Systemic introduction into the field of scientific research activity</td>
<td>Legal restrictions</td>
<td>Amendments to the Law on Innovative Activities</td>
<td></td>
</tr>
<tr>
<td>The establishment of scientific research activity as a structural element embedded into the organisation of the higher vocational schools</td>
<td>Organisational establishment of activities in institutions</td>
<td>Number of registered schools in the Law on Innovative Activities</td>
<td></td>
</tr>
<tr>
<td>The establishment of virtually oriented research programmes for master vocational studies.</td>
<td>Legislation Development of study programmes</td>
<td>Number of accredited master vocational programmes</td>
<td></td>
</tr>
<tr>
<td>Increased volume of scientific and vocational services and the number of active scientific research staff</td>
<td>Strengthening the scientific research capacity of the subsystem</td>
<td>Number of scientific-research and art works Number of the engaged teaching staff</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regulated environment</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A coherent structure of the two-stage study – master vocational studies</td>
<td>Vertical and horizontal mobility Master vocational studies</td>
<td>Amendments to the Law on Higher Education</td>
</tr>
<tr>
<td>Reconciled teaching staff titles with the international practices and criteria for teaching staff selection;</td>
<td>Expanding the list of teaching titles</td>
<td>Amendments to the Law on Higher Education</td>
</tr>
<tr>
<td>Definition of specific competences (professional standards) as part of the National Qualification Framework</td>
<td>Specific competences of vocational graduates required in the labour market</td>
<td>The number of vocational fields with defined specific competences</td>
</tr>
<tr>
<td>The establishment of a system for professional and pedagogical training and professional development of teachers</td>
<td>Defining the system (development centres for teaching competences, opportunities for personal development, stimulation of excellence in teaching, a gradual introduction of requirements for methodical competence in teaching on a systematic level)</td>
<td>The number of implemented training programmes The number of schools in which the programme has been implemented</td>
</tr>
<tr>
<td>Improved conditions for recruiting high-quality teaching staff</td>
<td>Defined and improved conditions for the promotion of teachers A list of teaching titles</td>
<td>Amendments to the Law on Higher Education</td>
</tr>
</tbody>
</table>
5. Necessary Changes in the Higher Vocational Education Environment

In order to achieve the strategic objectives it is of primary importance to establish an efficient and effective system of control, through which a relatively well-defined educational system in Serbia would be consistently applied, but also cleaned from a number of deviations and bad practice. Simultaneously, the implementation of strategic objectives and action plans must be supported by the system of monitoring and evaluation of the progress, which has to be supplemented by a modified SORS methodology.
From the standpoint of vocational studies, the reorganisation of the legislation in the field of labour and employment is fundamental. Acceptance and recognition of vocational titles in the NES, the labour market and in public need to be resolved and, therefore, the norms in the field of labour relations (classification of fields, a unique nomenclature of vocations, codebook of vocations and education level, etc.) should be harmonised. Accordingly, it is necessary to regulate the recognisability of titles of vocational studies in the system of chambers and other professional associations.

Additions are needed in the system of scientific and research activity in order to involve the sector of vocational studies in this field.

6. Strategic Interactions with Other Systems

There are two most important strategic relationships which must be established or improved, and which refer to the vocational studies and the neighboring subsystems of education and the world of employers and the profession.

The nature of the activities and the current state show strong links of vocational studies with VET education and academic studies. The basis for the cooperation with the secondary education must be the improvement of the quality of education programmes in individual fields and specialisations, and the compliance with and integration into a coherent multi-stage process of educating the young. Equally important is the joint development and rational use of teaching and laboratory facilities. In this regard, there may be a considerable improvement in the quality and modernity, as much as allowed by the rational use of already limited financial resources. Initiators and advocates of the process of establishing strategic relations are Conference of Academies of Vocational Studies, on one hand, and the Community of Vocational Schools, on the other hand.

The harmonisation of curricula in joint fields with the academic studies is important, as well as the development and use of laboratory facilities and resources to support teaching. Still, important cooperation activities include: exchange of teachers, mutual alignment of systems of horizontal and vertical mobility, cooperation in the field of scientific and research work, joint participation in international projects and the like. Initiators and advocates of the process of establishing strategic relationships are the Conference of Academies of Vocational Studies and the Conference of Serbian Universities.

With the world of employers and vocations, it is necessary to establish strategic relations in those fields where vocational studies occur as a source of highly educated vocational workforce. In this regard, the economy, health, culture, public administration, army, police and other segments of society are equally important. The main part of cooperation should be focused on the development and improvement of study programmes in line with the market needs and defining the
competences of graduates. Possible areas of cooperation are: applied research, the use of technological and organisational resources for teaching, engaging teaching staff, teacher training and others. In this cooperation, it is necessary to have an active participation of the NES, the Serbian Chamber of Commerce and representatives of professional chamber system.

For vocational studies, of particular significance is the achievement of cooperation and association with the world of work and the labour market on the regional and local level. This would harmonise the development of infrastructure and education policies that are related to the labour market within the framework of regional development policies.

V. TEACHER EDUCATION

The Mission of the teacher education is to build a national system for the professional development of teachers, at all levels of the education system, and training them so as to guarantee high upbringing-educational standards.

The Function of the teacher education system is providing teaching competences in terms of: teaching area (the subject of teaching), teaching/learning methods and assessment systems of student achievements, which will provide a high standard of educational achievements of those who are learning, as measured in an objective way, then, collaboration with other teachers and the local government, understanding the nature of the educational system in which they operate and understanding the cultural context in which we place the education processes.

1. The Vision of Teacher Education Development

No later than by 2020, all pre-schoolers, primary and secondary school students, university students and all students in all systems of further non-formal education will be educated by qualified, modern and prepared teachers. Qualified means that the teachers will know and understand their profession and have all relevant teaching competences (needed to support learning, affective and social development, cooperation in and outside institutions, etc). Training high-quality teachers means developing competences for educational work. Modern means that the teaching/learning concept is scientifically-based (in accordance with the latest scientific achievements and professional knowledge, psychology of learning, development and motivation and teaching methodologies) and flexible; the teacher is capable of successfully adapting to new tendencies in education and improving in accordance with the new trends that will be necessary for the future.

Teachers are able to establish a critical relation to the prescribed and optional syllabus, to choose relevant materials and connect different subjects. Teachers
will have considerable autonomy in the work through which they successfully link programme contents to the real life situations and circumstances; it is accompanied by the overall responsibility for the success of the student achievement.

The teaching profession, which is characterised by dignity and integrity, is recognised and included in the NQF with clearly defined levels of qualifications and corresponding competences, is highly respected and well-paid. This has created the climate in which capable and high-quality candidates will be attracted to the teaching profession.

The selection of students – future teachers is significantly better because the system has been established so as the best in the field are motivated to join in the teaching profession and there is a consensus on the number of candidates and the need for them.

Study programmes for the initial teacher education during undergraduate studies provide for the acquisition of all professional competences based on the model of reflexive practice. This has been achieved by reforming the existing system of education for the teaching profession so the result of that is the professionalisation of the teaching profession.

In the initial teacher education, the specific needs at all levels of education are taken into account, from pre-school through primary and secondary, to university. The education, in addition to the superior theoretical knowledge, also provides adequate practical knowledge that is gained through a high-quality school practicum.

The national doctoral school, where teaching methodology is predominant, successfully produces qualified personnel for research centres and projects which ensure achieving an initial, high-quality education and professional development of teachers, primarily based on the needs of education in the Republic of Serbia. Research in the field of methodology, designed according to the high academic and professional standards, is defined as the key driver of education development at all levels, it is the foundation of high-quality teacher education and significantly affect the definition of educational policy.

The selection of future students, high quality study programmes for teacher education and compliance with the needs on the market result in significant efficiency; the percentage of students completing the studies is above 80%.

Upon graduation, in the process of the recruitment, teachers pass through a number of developmental and control phases which have been provided for by the Law: from an internship position to acquiring a teacher’s license. The professional-methodological part of the examination for obtaining the license is organised at the faculty. Quality criteria in this process are uniform for the entire territory of the Republic of Serbia and, thus, prevent local differences based on improper criteria.

In-service teacher training is done on the basis of high-quality accredited and approved programmes through which the education policy of the Republic
of Serbia is implemented. A teacher (section of teachers, schools) chooses among these programmes the ones which most contribute to the improvement of his/her teaching practice.

Professional promotion and evaluation of teachers are based on the findings of a comprehensive and systematic quality control of the teacher’s professional work (educational inspection, professional-pedagogical supervision, advisory service, objective indicators of novelties introduced by the teacher in teaching practices, better achievements of their students in relation to their initial level, papers, etc.) i.e. are carried out according to the criteria for progress based on the professional competency standards and professional development of teachers. The criteria for all forms of teacher promotions are clear and the procedure for their implementation is transparent.

2. The Current Situation in the Teacher Education System

All teachers in education are formed at the level of higher education (vocational or academic studies) except nurses-educators (who work in nurseries and other institutions which implement the programmes for early age) and masters in vocational schools, which are formed at the secondary school level.

There is a significant excess of graduated teachers and a shortage of teachers in some subjects (mathematics, physics, English) primarily due to their drain into the more demanded (better paid) sectors.

Due to the inadequate legislation, there is a lack of standards for the teaching profession, the current system of teacher education does not provide a high-quality solution because, on one hand, teacher faculties put the emphasis on pedagogical competences of future teachers but with a significant lack of professional competences, and on the other, faculties that educate teachers of particular subjects develop primarily professional competences, while ignoring pedagogical-psychological-methodical (PPM) competences.

3. The Current Situation: Key Features

In Serbia, there is a network of teacher education faculties and higher schools for the education of educators, which is capable, sufficient for the needs of the Republic of Serbia, even too extensive in some segments. Faculties are organised in seven state universities. The specificity is that faculties of primary-junior grades teacher education exist even in small communities, while the faculties of teacher education are almost entirely located in major cities and headquarters of universities.

Universities either do not have or are just beginning to have specialised interdisciplinary master programmes for professionals who would deal with the
development of educational policies or other significant segments for the development of education except teacher education.

At the current time, the quality of secondary school graduates who enroll at study programmes for teacher training in order to work in schools is very low because the whole system of education (and the financial status) is highly underrated. Teaching programmes and approaches in working with future teachers do not follow modern education trends in the field of education. There is no correlation between the number of the approved budget-funded places and the actual needs for a suitable teacher profile. Valid projections of the needs for the staff are not applied, and therefore there is no appropriate planning.

In the current situation, which emerged after the implementation of the Law on Higher Education and the application of the Bologna Declaration, normatively there are three basic models for the initial teacher education: model 1 – simultaneous model, in which the teacher obtains the master level of academic studies in a teaching field, and at the same time, in close connection with the chosen field, they acquire pedagogical and other competences that are important for the teaching profession; model 2 – consecutive model has the same requirements in terms of professional and pedagogical competences, but allows acquiring the competences at different times; in model 3 – transitional model (applies to teachers who are already employed) a person having a master degree in a certain field of study, after studies must acquire further education of 36 ECTS (6 ECTS from school practice) in the pedagogical, psychological and methodical fields. These models have not been applied in practice so far (except occasionally). In the accreditation process, which was started in 2006, and through which all teacher faculties passed, the requirements for teacher education were not properly perceived. This is primarily reflected in the lack of interdisciplinarity, that is, teacher education is mostly related to the standards of education and scientific fields to which it belongs. The fact that the NQF has not been prepared in the process of accreditation, has further adversely affected the definition of study programmes, so, thus far, there is no formally defined teaching profession.

The consequence of the current system of introduction to the teaching profession is that those who are employed as teachers, during their studies, do not acquire the basic competences needed for the teaching profession. In the case of scarce human resources, undergraduated students are very often employed as subject teachers, who have insufficient knowledge of the field itself, particularly of the PPM contents. In vocational schools, the teaching of vocational subjects is normally performed either by faculty-educated people or qualified people (masters), without pedagogical competences.

The same practice is still applied in the education of university teachers: training for the teaching role is neither established nor system-defined. Basic knowledge of the vocation (contents) is much more valued than how this
knowledge is communicated to others. At the universities, in the implementation of the election/re-election of the teachers, there are no real indicators to assess the quality of teachers’ work (except within the professional field, which is shown by the number of scientific/technical papers). The minimum selection criteria also include clearly defined indicators of scientific and artistic work, while the educational work is not evaluated at all. It is now estimated either through the insufficiently relevant indicators, such as student surveys, or there is a complete lack of objective indicators for the assessment of the quality of methods of teaching.

This is especially important since the Bologna reform has begun, and it is impeded due to the fact that universities in Serbia do not work as a whole, and this activity cannot be developed by individual faculties. In Serbia, teaching methods in any particular field are usually not seen as a part of the scientific field, but only as part of the (general) didactic (education) field, so they are not developed in the relevant scientific fields. Research in the field of teaching methods is carried out only sporadically and is then often of insufficient quality or does not improve the teaching process in Serbia.

Within the system of further professional development of teachers at all levels, there is no system for the promotion of teachers in the pre-university education and there is no system for evaluating teachers’ professional work (professional and pedagogical supervision, evaluation of teachers). In-service training programmes exist, but many are not selective enough, and many do not contribute to the improvement of the teaching quality and the implementation of education policy at all. Current regulations do not define the parameters for the practical application of the knowledge acquired in the process of in-service teacher training. Hence, the quality of teaching (and teachers) can only be indirectly inferred from the educational achievement of primary school students on national and international student tests (PISA, TIMMS).

Some provisions of the umbrella law on education have provided possibilities to improve the quality of education, so there are sporadic measures aimed at improving the quality of education: quality standards for educational institutions for the external evaluation of schools (which is being piloted), standards for professional competences and professional development of teachers, standards for textbook quality. The introduction of these recently adopted standards into practice is just starting, so it takes time to assess their use and significance.

In educational institutions, from primary schools to the universities, there are no internal strengths for the implementation of a relevant self-evaluation procedure on the basis of which development plans would be planned and which would improve the quality of teaching. The quality system is most often formally defined, while its implementation has not begun in the desired extent.
4. SWOT Analysis Findings

Internal strengths/potentials are:
1) A relatively long tradition of teacher education;
2) There is a widespread network of public higher schools and faculties where study programmes for teacher education are implemented, thus providing the state with the opportunity to make a significant impact on improving the quality of education;
3) There is a significant number of professional associations where expert meetings of university professors and school teachers are held.

Internal weaknesses/disadvantages are:
1) The teaching profession has lost its social status and the social and economic status of teachers is bad. The consequences are that there are not enough qualified candidates interested in teaching positions, and that there is an uncontrolled overproduction of staff in one field (primary-junior grades teachers) and the lack of teachers in other fields (subject teachers);
2) Universities are not integrated, which entails the lack of high-quality interdisciplinary study programmes for teacher education and research related to education and teachers;
3) The core of the profession is not uniquely defined in any field, therefore, each HEI forms its programme of study individually and independently, often in accordance with the currently available teaching staff;
4) The criteria for the accreditation of study programmes that were implemented in the period from 2007 to 2011 did not take into account the specific features of teacher education;
5) Professional associations are not active enough and their work primarily depends on the enthusiasm of a group of teachers and professors; there are no recommendations for professional associations in the field of education; there are no professional teacher associations;
6) The NQF has not been adopted, so there are no defined learning outcomes that are expected from each qualification, and just that is the necessary condition (the foundation) for defining special knowledge, skills and competences for the teaching profession.

External opporunities are:
1) The Law on the Foundations of the Education System (LFES) introduced a necessary condition of having at least 30 ECTS from PPM subjects and six ECTS in school practice, with the introduction of four levels of progression as a form professional advancement of teachers;
2) Recent documents of the European institutions dealing with education policy (OECD, EU, UNESCO) have put an emphasis on the role of
teachers and teacher quality as a key factor in the quality of education; a significant number of international projects in Serbia is being implemented to raise the quality of teacher education.

External disadvantages are:
1) A key obstacle (trouble) is the social status of the teaching profession;
2) There are still no crucial national documents (e.g. the NQF) which would define the teaching profession;
3) In the process of accreditation of institutions and study programmes, standards for study programmes are not separated and clearly defined;
4) There is a large gap in student funding at basic and master studies;
5) Taking professional licence exams has not been organised properly, which was taken over from the faculties by the MoES (and they should have a parental interest in their staff);
6) There are no adequate data on the needs of the teaching profession, nor on the number of students who are studying for the work in education because there is no adequate information system and there is no well-defined methodology for collecting data related to teacher education,
7) Teachers at academic studies are educated simultaneously with those at vocational studies;
8) Teacher faculties enroll a large numbers of students (which significantly exceeds the requirements), and in addition to that, teacher faculties are mostly situated in smaller towns, which endangers the quality of the teaching staff and teaching.

5. Teacher Education System Development Strategy

The Main Challenges and Strategy Orientation

Poor performance of students in PISA and TIMMS international tests and in the national assessments has raised the question of the quality of our teachers, because it is clear to everyone that they are a key factor in the student achievement.

The highest authorities in the field of education have no perception that the teaching profession is – a special profession. In the list of professional, academic and scientific titles adopted by the National Council for Higher Education, the position of a teacher/professor is almost nonexistent. On the other hand, the current regulations on the type of qualifications needed for teachers and professional associates to work in schools introduce additional problems because they often do not specify teaching competences (language teaching, according to these regulations, may be carried out by graduated philologists, teaching biology by graduated biologist-researchers, etc.).
During the accreditation of study programmes (with some exceptions), the programmes whose unambiguous mission was teacher education, were not accredited, and there were big dilemmas whether to educate teachers at the basic or master studies (this dilemma was later resolved by the umbrella law on education). Teachers who work in higher education have never had any support for the educational work and system training for the implementation of the teaching process at universities and higher schools.

The focal point of the development strategy for the teacher education is the requirement for the full professionalisation of the teaching profession at all stages of the professional life of teachers. It will be achieved through:

1) good initial education of all teachers and continuity in the development of professional competences of teachers in order to have teachers with considerable autonomy in work and a high degree of responsibility;
2) high quality of the scientific and expert research in the field of teaching methodology;
3) the formation of interdisciplinary university centres.

Strategic Policies, Measures and Actions

The basic policy is to build a national system of teacher professional development at all levels of education, and to establish (in some parts of the education system only to upgrade) a defined quality evaluation system for teachers, which should provide clear indicators on the basis of which a good teacher should be recognised, i.e. the one that provides the key contribution to high educational achievements of learners.

The strategic policy will allow the system comprehensively to solve the problems of: (a) recruitment of students entering study programmes in teacher education; (b) initial teacher education; (c) the introduction of new teachers to work (internships, licensing); (d) professional development of teachers; (e) evaluating the quality of teachers’ work; (f) professional advancement of teachers.

The system will be efficient if it ensures the rewarding of high-quality teachers and the gradual elimination of bad teachers through the system of re-election for all levels of education. Continuous monitoring of the quality, adoption and implementation of preventive and corrective measures will ensure that the educational process, at any moment, includes only the highest quality teachers. In order to achieve the best results, teachers will constantly be improving, the norms will be improved, as well as license exams, selection criteria, methods of self-evaluation and external quality controls. A prerequisite for achieving the best solution is de-politicisation of all educational institutions and introduction of an obligation that every employee should have professional competences only.

The strategic policy will be further elaborated and specified in the corresponding Action Plan, and will be implemented by using the following strategic measures:
1) Define in the NQF, as soon as possible, the teaching profession for all levels of education (different levels, such as nurse-educator, pre-school educator, teacher, teacher in elementary and secondary school, and various teaching positions in higher education), and these documents will define different levels of teacher qualifications and relevant professional competences;

2) Precisely define, in the process of revising the accreditation system (in particular the standards for accreditation), the competences that students need to acquire for the teaching profession within each study programme for teacher education. In addition to the five scientific and educational fields defined in the Law on Higher Education, the field of education will also be defined and will include specific standards for accreditation of academic programmes for teacher education. An appropriate sub-committee will be formed in the accreditation committee that will be responsible for implementing new standards;

3) The National Council of Education has adopted the standards for professional competences and professional development for teachers in pre-university education; they will be revised and upgraded after the analysis of the initial application. Professional competences of teachers will include the following components: technical competences in the subject (discipline) the teacher should teach, educational competences (knowledge of the teaching/learning methods, method of assessment of student achievement, supporting personal development, communication and cooperation, knowledge of educational resources and how to use them, knowledge of information technology and of its use in education, knowledge of education and cultural contexts in which the teaching is preformed);

4) Measures will be taken to attract the best candidates to teacher education programmes, including:
   (1) The MoES will make a projection of the needs for the recruitment of teachers at all levels of education, and the improvement of the quality of students who want to study at faculties that educate for teaching positions (for pre-school, class and subject education in the primary school and in the secondary school), as an element of positive selection, will be achieved by adjusting the number of teachers needed according to the number of places financed from the budget at study programmes for university teacher education (like the system where the health sector prescribes the required number of doctors of appropriate specialisation, depending on the needs);
   (2) greater competition in the enrollment, with certain guarantees for employment, will raise the quality of students;
(3) the quality of the enrolled students will further be improved significantly by providing scholarships for students preparing for scarce teaching profiles;

5) The laws and bylaws will precisely define three basic models for preservice teacher training (listed earlier in this text).

For teachers of general education subjects in the primary school and in comprehensive schools, and for teachers of general education subjects in secondary vocational schools and in art education, the most efficient model is 1, i.e. the one where the initial education is systematically linked to the acquisition of competencies for the teaching subject and pedagogical competencies. The improvement and expansion of the model, through the definition of five-year integrated studies, will best provide all necessary professional competences of teachers, while the preferred ratio of the scientific/vocational subjects and the subjects that provide teachers with other teaching competences (including professional and methodological subjects and teaching practice in schools), expressed in ECTS credits, would be 180: 120.

In the initial education for classroom teaching (grade 1 to grade 4), special attention should be paid to training teachers for the work in small groups (given the large number of small schools in Serbia) and/or in languages of national minorities, as well as in inclusive education. The same goes for subject teaching (grade 4 to grade 8) in some parts of Serbia, where it is necessary carefully to resolve the problem of introducing dual-subject studies which would be conducted at the respective faculties for each of the subjects. In this manner, the problem of education of teachers who teach Serbian as the second language to minority groups, and minority languages to students whose native language is Serbian may be resolved.

The issues regarding the concept of initial education and its implementation must be handled in very close cooperation with the universities in Serbia, with the National Council for Higher Education and the Ministry of Education and Science. During the resolution of those problems, the standards for accreditation of higher education programmes should be relied on, which, among other things, call for a very precise definition of the mission and objective of each programme (what kind of work and work tasks the given program is prepared for), that is, accreditation standards for the programmes should be elaborated with a view to the acquisition of teaching competencies.

Indicators and procedures for collecting data on the quality of teachers in schools for the needs of the institutions that educate teachers shall be defined. Based on the analysis of the feedback from schools, universities will develop and correct their study programmes. In this way, a feedback loop will be established between the faculties that educate teachers and institutions which employ graduates;
6) The introduction to work (the concept of internship, requirements for obtaining and maintaining licenses) will be regulated by statutory provisions. Obtaining licenses is an additional opportunity for improving the system for the professional development of teachers. The organisation of professional and methodological exams which teachers must pass should be returned to the competent HEIs, i.e. the faculties at which the teachers have initially been educated. Those are the only institutions capable of following the newest trends in teaching, carrying out scientific research which could generate doctorates, while some of these things would be transferred to everyday life within the school and classroom.

7) The professional development of teachers and associates in the course of work is carried out through accredited and high-quality professional development programmes aimed at acquiring professional competencies required for the effective performance of the teaching function in a particular educational institution and for the professional development of teachers.

The system of selection and approval of these programmes has been upgraded and is based on the needs of the educational system which are determined on the basis of expert analyses. Accredited programmes, among other things, should eliminate deficiencies, i.e. shall be used as a corrective measure in achieving high-quality education in schools.

Exceptional attention should be paid to the in-service training of currently employed teachers, the greatest number of whom will be employed for several more decades. This training must introduce those innovations in the teaching/learning process which could increase the educational achievements of the students. The choice of priority programmes for in-service training determined by the Ministry must be in the service of building a national system of education and professional development of teachers. Through accredited programmes (which require special analysis), the teaching staff that is currently in the educational process, should be moved to interdisciplinarity.

8) The professional development of teachers in pre-university education is achieved on the basis of legal provisions referring to the levels and types of promotions, with a corresponding increase in wages. In order to promote the implementation of professional evaluation of all teachers and their career, it is necessary to establish a comprehensive systematic control of professional work and define the criteria for the promotion of teachers. The assessment of the acquired competences for professional development shall be based on objective criteria (participation in programmes for professional development and indicators of practical application of the acquired knowledge and competences, innovations in the teaching practice, the application of the evaluation system of teachers, published papers, etc.).
It is extremely important that, from the next financial year, the statutory system for the promotion of teachers in primary and secondary schools is applied. The promotion should primarily be based on introducing innovations into practice and improving the teaching/learning process that produces better educational outcomes (the application of innovations that are introduced into the education system, finding new solutions for learning the parts of the material that create difficulties, meaningful learning process, assessment of students by the achievement standards, finding solutions for better grades of students from socially and culturally unfavorable backgrounds, real introduction of inclusive education and the like).

The MoES will immediately begin to develop a service of professional-pedagogical supervision. This development will also include the formal training of experts in professional-pedagogical supervision;

9) The education of nurses-educators (for nurseries) will remain a specific form of education at the secondary school level, with the possibility of specialisation. An adequate system for the career advancement applies to this personnel as well. Teachers intending to work in preschool education are educated in higher schools for vocational studies with the programmes of 180 ECTS, with the possibility of subsequent specialisation;

10) Measures will be taken to attract the best candidates to work in HEIs. The practice of choosing the students who graduated from a certain HEI to work in the very same institution will be terminated. Should the accreditation of doctoral studies be allowed only for the best universities in the Republic of Serbia, this will enable all teachers in the Republic of Serbia to have the minimum guaranteed quality. Where possible (in terms of number and types of faculties), great solutions can be used (for example, British or German) according to which a student may obtain a doctorate at one university, be selected for the first position at the other, and for the third position at the next one, and so on. The alternative is to establish joint doctoral programmes, for example, doctoral studies in the teaching methodology as the joint studies at state universities;

11) For the purpose of the initial education of teachers for tertiary education (academic and vocational studies), university centres for educational development shall be established. In these centres, standards for competences and professional development of university teachers shall be developed and implemented as a realistically achievable professional portrait of a future university teacher, while defining specific indicators of quality. Teachers in higher education shall obtain pedagogical competences at the latest upon their appointment to the first teaching position. This will be regulated by the Law on Higher Education. The statutes of HEIs should include provisions regulating the above said, how and
when the appointment and promotion of teachers should be specified in the criteria for determining their pedagogical competencies;

12) The system shall require the teachers in higher education to continue their education in the fields of PPM, while connecting the promotion of teachers with professional teacher competences (and not only with the scientific and practical ones, as it is now). The established university centres for the development of education and teaching/learning at integrated universities and at larger universities should perform this function for smaller (and private) universities and higher vocational schools;

13) The MoES shall require the competent organisations (institutes and institutions) to develop a reliable system for evaluating the quality of teachers. A multi-year professional work should be invested in the construction of a national system for quality assessment of teachers at all levels of education. A possibility of international cooperation should also be used for these purposes;

14) A set of relevant indicators for each phase of teacher development shall be defined;

15) In order to raise the quality of education it is necessary to provide funding of the research in methodology as an independent project funding. It is necessary to establish a database on this field, make foreign experiences available and use professional support from those foreign universities which have good results and more experience than us.

6. Necessary Changes in the Teacher Education Environment

In order to overcome the problems caused by the lack of competent teachers and their continuing professional development, it is necessary to establish high-quality doctoral studies in the teaching methodology of individual subjects. Joint studies at the level of all interested universities or a national doctoral school are the most effective and best solution. A network of university centres that will develop joint study programmes at all three levels (basic, master and doctoral studies) needs to be made.

Appropriate steps should be taken to raise the scientific research in the field of education. We should insist on a larger number of projects in this field and significant connections with institutions in the region and the EU. Interdisciplinarity of such projects is important, i.e. joint work of a pedagogue, psychologist and researcher in the field. The core of the research should remain in the domain of the profession, with professional support of researchers in the field of pedagogy and psychology.

It is necessary to strengthen the existing standards for the accreditation of study programmes, or introduce additional standards related to the achievement
of professional and PPM competences. The evaluation of these programmes of study must be conducted by experts, and as a result, the contents of study programmes for teacher education at all universities must be adjusted. It is necessary to stop the practice of the contents of study programmes depending on the available teachers at faculties.

Universities should be allowed flexibility in the approach to teacher education, and there are a few options for that:

1) introducing integrated study programmes for teacher education, which would achieve higher quality and avoid problems with funding, and large differences in the number of seats at the undergraduate and master studies;
2) introducing the possibility that higher grades of primary education are taught by dual-subject teachers who would be equally competent in both subjects;
3) introducing modules or double degrees for teachers of vocational subjects in secondary vocational schools.

Universities should take the responsibility to raise the quality of their teachers. This will be achieved through the re-election and by introducing additional criteria that are related to teachers’ work and by defining indicators that will measure the pedagogical work of university teachers. Only after that can we expect to make progress at the university in the change of the (current) approach to the professional development of university teachers.

Local communities should take some responsibility for the development of primary education, and partly for secondary education. The development plan of each local community (city, municipality) must include investments in education as a primary task.

It is necessary to connect professional societies with universities and the MoES. Professional societies should take some responsibility for monitoring the status of teaching in their field and for its further development.

The legislation for the promotion of teachers should be brought into line with the law governing labour relations. They should open up the possibility of losing one’s position in education for not fulfilling the minimum level of performance indicators and for lack of competence. This has previously existed at universities as the possibility through the re-election system (otherwise unused).

7. Strategic Interactions of Teacher Education with Other Systems

1) Providing high-quality teaching practice (school practice) in all types of schools in order to gain practical knowledge (schools should be
internship premises for the students of teaching faculties, for the implementation of practical work, internships, seminar papers, small projects, final papers during the studies) with a choice of outstanding teachers for mentors for the students of teaching faculties, with supervision and counselling;

2) Performing high-quality control of the general and vocational graduation, final exams at the end of education, in order to provide high-quality entrance to the university;

3) Ensuring continuity in the development of career guidance of teachers;

4) Harmonising education standards for secondary school completion and study programmes at faculties that educate teachers, and outcomes of the entire studies;

5) Considerable strengthening the relationship between universities and comprehensive schools as the largest base of prospective students, and universities should seriously affect the development of high-quality education in comprehensive schools;

6) Increasing the quality of supervision in schools, considering the possibility of additional education of supervisors in the form of specialisation studies;

7) Establishing a mechanism for obtaining information on the quality of graduates in institutions or schools where they are employed, primarily through a survey of employers (directors) and graduate students.

With Cultural Institutions and the Media

1) The promotion of learning and acquiring knowledge and skills need to become the primary goal of all employees in education;

2) Ensuring a joint appearance of teachers of all education levels in all types of media in order to raise the awareness of the importance of high-quality education (currently, the strongest media are used primarily for the sake of presenting negative examples – low wages, fights in schools, corruption, etc.), and put the accent on positive things.
PART FOUR
PERVERDING STRATEGIES OF EDUCATION DEVELOPMENT

I. ADULT EDUCATION

The mission of adult education is to provide adult citizens with a right to education and lifelong learning and, thereby, contribute to their personal and professional growth, better employment and social participation.

The subsystem of adult education, as an integral part of the entire educational system and the manifestation of the concept of lifelong learning, has the following functions: to respond to labour market needs and individual needs for new knowledge and skills; to improve employment opportunities; to facilitate professional mobility and flexibility of working-age population; to increase the value of human capital and the possibility of sustainable social and economic development of the country and its integration into the global economy; to contribute to poverty reduction, to increase inclusion and inter-generational solidarity; to contribute to quality of life, the development of democracy, tolerance and inter-cultural relations.

1. The Vision of the Adult Education Development

The key strategic features of the subsystem of adult education are: coverage, quality, relevance, efficiency, recognition of prior learning, and career guidance and counselling of adults.

Coverage

In 2020, at least 7% of the adult population in the Republic of Serbia will be covered by the programmes for adult education. The system of adult education is available to all citizens, regardless of their social and economic and physical, age, intellectual, regional, ethnic, linguistic, national, religious or other characteristics.
**Quality**

A high quality of environment/conditions, the programmes (curricula), teaching/learning processes and learning outcomes has been provided. The accreditation system for institutes/institutions and adult education programmes has been developed and implemented in accordance with the international standards. International cooperation has been established in the monitoring and evaluation of the quality of adult education system.

**Relevance**

Adult education has become a significant force of the development not only of individuals but also of the society in all its aspects – economic, social, civil, and political. Adult education contributes to the improvement of knowledge and skills of the working-age population in accordance with the requirements of the labour market and, thereby, positively affects the economic and social development of the country and the quality of life of its citizens. The contribution of adult education is recognised in facing the challenges of “aging” society, migration and the needs of especially vulnerable groups.

**Efficiency**

The efficiency of the educational process has been increased by improving the quality of all parameters of educational outcomes and the rational use of resources. Diverse forms of formal and non-formal adult education are adapted to the needs of individuals and rely on the rational use of different sources of funding. Investments of individuals, employers and government into the programmes of lifelong learning are seen as a viable long-term investment in human resource development.

**System of Recognition of Prior Learning**

A unique system of recognition of prior learning has been developed and fully implemented, and it recognises prior learning competences and qualifications acquired through non-formal and informal education, accepts them and issues certificates in accordance with the NQF and the European Qualifications Network. A system, which recognises ECVET and ECTS points based on competences and qualifications of individuals, has been implemented regardless of the manner of their acquisition.
The Career Guidance and Counselling System

The system of career guidance and counselling has been developed and fully implemented, and it advises adults on better employment, greater social participation and acquiring knowledge, skills and competences needed to make valid decisions in all areas of life and work of the citizens.

2. The Current Situation in the Adult Education System

Coverage

In the absence of reliable data, we use 2008 Eurostat data, according to which only 3% of adults (25 – 64 years of age) in Serbia participated in some of the adult education programmes. The institutional framework, through a series of legislative acts (the Law on the Foundations of Education, the Law against Discrimination of People with Disabilities, the Poverty Reduction Strategy, and the Strategy for Improving Roma Education), provides access, non-discrimination, and high-quality conditions for the education of all citizens of the Republic of Serbia regardless of their physical, intellectual, age, religious, cultural, ethnic, and other characteristics. However, the problem of inclusion of everyone in programmes of additional education and learning remains, especially among the poorest and most vulnerable groups. One of the problems is also the low participation of the old population in education. Territorial distribution of facilities for adult education is very unfavorable, especially for the population living in rural areas, because most institutions are located in cities – 90% of the adult education schools are located in central Serbia and Vojvodina, while other parts of Serbia are insufficiently covered by these institutions. The number of institutions participating in the formal education of adults has been reduced since the beginning of the 1990’s to a small number of schools for adult education. It was expected that the existing institutions of formal education would develop adult education programmes. There is an increasing tendency of coverage of the adults by the non-formal education, especially by the education and learning programmes offered by NGOs and private providers. The current non-formal adult education providers are: centres for professional development of employees; national, labour and open universities; Serbian Chamber of Commerce; agencies and institutions for regional and economic development and entrepreneurship; professional organisations and associations; civil society organisations; private educational institutions and companies (training centres, consultation firms, etc.); foundations and charitable organisations; museums, libraries, reading rooms, theatres, cinemas and galleries; scientific and professional institutions, correctional institutions; institutions for social care for the elderly and NGOs for the third age. The most prominent is the role and scope of activities of the National Employment Service (NES), which
offers a variety of training, including: additional training and retraining for the labour market needs and a specific employer and functional adult education.

**Quality**

There is no adequate system of control, evaluation and improvement of the quality of adult education, nor a system of national quality standards. In spite of many providers, there are still no clear criteria for assessing the quality of education services. There is a lack of adequate equipment, teaching resources and facilities for carrying out the education process. No modifications of the existing education curricula have been made based on the needs and goals of adult education. There is a problem of availability, the number and quality of teaching and other staff in the field of adult education. There is no specific methodology developed for monitoring and evaluation of adult education, but the same instruments and criteria are applied as in case of the education of children and youth. The main technical and referral institution for the evaluation of the quality of education is the Institute for Evaluation of Education Quality and Assessment, which does not recognise adults as a special target group in the formal system.

**Relevance**

The current system does not provide adults with knowledge and skills that correspond to the needs of potential users, the labour market and social community. There is an insufficient supply of adult education programmes, although the population of Serbia is classified as a very old population, with an average age of 41 years, with a tendency for the share of the elderly population (65+) to increase to 23.2% by 2050. In addition, unfavorable education and age structure of the employed population and the total population, requires a higher offer of re-training and professional training programmes. There is a great need for adult education of vulnerable groups, especially the poorest ones, because 71% has not completed primary school education or has only completed primary school. There is a lack of a systematic approach to the development of adult learning and education that would be consistent with the policy of lifelong learning and provide diversity and flexibility of formal and non-formal learning.

**Efficiency**

The current system does not meet the needs of individuals and/or employers in the appropriate time period and with the appropriate range of programmes and training. The inefficiency is the result of an imbalance in the allocation of resources throughout the life cycle of an individual, because the investment in the education is made largely up to the age of 25. The necessity and importance
of the continuous improvement of the workforce through innovation, additional training, and retraining have not been recognised. Adult education is not viewed as a profitable investment. It has not been established how much of the total funds in the RS is allocated to all forms of adult education and lifelong learning, from direct budget allocations based on the activities of various ministries, followed by the allocations of local governments and public enterprises, allocations of employers, allocations of individuals and foreign donations.

**Recognition of Prior Learning**

There is no clearly defined legal framework for the recognition of prior learning. The basis for the development of the system of recognition of non-formal and informal learning is established by the European Qualifications Framework and the National Qualifications Framework. Serbia is still in the process of defining and adopting the NQF. By recognising the knowledge and skills acquired in non-formal and informal learning, rights of an individual are respected, and, simultaneously, significant economic and social benefits for individuals, communities and the state are achieved.

**Adult Career Guidance and Counselling**

The system of career guidance and counselling is partly developed as in 2010, the Strategy for Career Guidance and Counselling was adopted (“Official Gazette of RS” No. 16/10), as well as an Action Plan for its implementation. It is intended for further development of the existing and new centres for information and professional advice to all users of the NES, in order to cover the unemployed and the users who belong to vulnerable target groups better. Since 2005, the NES has been organising workshops for active job searching, participation in the clubs for job searching, training for people who are difficult to employ, who have been unemployed for a long period of time, returnees to the labour market, and the redundant employees. Service users are mainly adults who are unemployed or individuals who want to change their jobs. During the last decade the centres for career development and counselling of students at higher education institutions have been established. These centers are primarily focused on providing services to students and are not aimed at the general adult population.

**3. SWOT Analysis Findings**

**Inner strengths** – A low proportion of people who leave the education system prematurely (10%) compared to other countries in Southeast Europe. The number of providers of education and training has increased. As the Strategy for Career Guidance and Counselling in the Republic of Serbia (“Official Gazette of RS” No.
1/07) was adopted in 2006, as well as the Action Plan for its implementation, important steps have been taken in the institutional development of the adult education.

**Inner weaknesses** – Underdevelopment of the non-formal and inflexibility of the formal education system. The education contents are insufficiently oriented to the development of the key competences of the labour force. Insufficient number and poor technical equipment of educational institutions and a lack of experts in the field of adult education. The mismatch of educational programmes with the needs of the labour market. There is no NQF that would allow recognition of prior learning. There is no clear system of internal and external quality checks, or models for the financing of adult education.

**Options** – Recognise the importance of lifelong learning and adult education for the social and economic development of the country. The harmonisation of educational programmes with labour market needs for new knowledge, skills and competences. The harmonisation of national normative acts with the reference framework of the EU and other international organisations. Involvement in international projects through programmes of lifelong learning and development of cooperation through networking with transnational institutions.

**Threats** – Lack of financial resources for further education and training. Inadequate promotion of the culture of learning. Increase in the educational gap between members of different social groups. Resistance to the implementing of necessary reforms and restructuring processes within the institutions of formal education. Lack of a system for the recognition of competences and qualifications obtained through formal education or non-formal learning.

### 4. Adult Education Subsystem Development

**Strategy**

The Strategy for Adult Education in the context of lifelong learning refers to all forms and levels of education and encompasses all ages, from the childhood to the third age, and different target groups. This strategy includes:

1) Primary education of adults who were not included in formal education;
2) Adults who have left the formal education system – primary, secondary general or vocational, higher education – and they need to get a second chance;
3) Continuing education of adults in various professions in order to improve their knowledge and skills, retraining and additional training;
4) Education of adults who have previously left the formal education system in some forms of higher education (short-cycle, specialisation/vocational studies, specialisation/academic studies, master studies);
5) Education of the unemployed with a view to getting better opportunities for employment;
6) Professional education of the rural population in order to improve agricultural activities (such as training for organic agricultural production, for the development of rural tourism; in the local arts and crafts, the reanimation of old crafts, etc.);
7) Adult education in order to gain key competences defined by the European Qualifications Framework for lifelong learning;
8) Adult education necessary for the role of active citizens;
9) Education for the “third age” citizens.

The Main Challenges and Orientation of the Strategy

The development Strategy for the Adult Education subsystem is based on the concept of lifelong learning that encompasses all subsystems of education and allows anyone, from pre-school to higher education, under the same conditions, to obtain key knowledge-based competences required for the inclusion in the society and economy.

In the conditions of accelerated development of science and the process of globalisation, while the population is aging, adult education, with its quality, directly determines the degree of utilization of human resources of a country. Adult education has to respond to the labour market needs and the needs of individuals, to correct the regular education system, to be a flexible and innovative subsystem that adapts to the demands of new technologies and sustainable development.

The application of the concept of lifelong learning requires networking and collaboration of all social partners and relevant stakeholders. In developing the strategy, the good practices of Member States have been used, while respecting cultural and national characteristics of Serbia. The strategy is based on the EU policy in the field of lifelong learning, as reported in the European Commission document “ET 2020”, i.e. the “Agenda for New Skills for New Jobs” programme.

The Strategy for Achieving the Vision – Policy, Actions and Measures

Coverage

Each individual must be allowed access to the learning process at all levels and in all forms of education under the same conditions and in a way that best suits their abilities and needs. It is, therefore, necessary to provide institutional and programme diversity and educational opportunities for adults and make adults choose different paths and ways of acquiring key competences. In the formal education system, from the primary school to higher education institutions, it is necessary to offer adult education programmes. The non-formal system of education must become part of the overall education system.
**Actions:**

Develop a broad network of providers of adult education that will, for certain education programmes, operate under the same conditions and standards. The following categories of service providers, should be formed:

1) The formal education system – institutions from the primary to the higher education;
2) The non-formal system of education – institutions and organisations specialised in adult education (national, trade, open universities), NGOs in the field of education;
3) The non-formal education system – chambers of commerce, trade associations, companies and their associations;
4) The non-formal education system – other institutes, institutions and organisations, such as institutes, institutions and organisations of culture, sports, local government, political organisations, etc.

The formal and non-formal institutes, institutions and organisations for adult education are subject to the same standards of the accreditation process.

A complete offer of adult education programmes in the context of lifelong learning must include:

1) Economically oriented educational programmes (the unemployed, persons with no qualifications, redundant employees, employees, entrepreneurs and persons starting their own business, the rural population);
2) Socially oriented educational programmes (the illiterate and persons without primary education, persons with disabilities and special needs, ethnic minority groups, women, and the elderly);
3) Education programmes for personal development i.e. knowledge, attitudes and skills of individuals in accordance with their wishes and interests.

**Measures:**

1) Cancel specialised primary schools for education of adults and establish learning centres in the existing educational institutions with new programme contents adjusted to the needs of adult education in order to benefit economically from the existing network (in the afternoons and on weekends) and achieve a good geographical distribution;
2) Develop and implement programmes of adult primary education;
3) Develop vocational training programmes for adults in accordance with the labour market needs;
4) Develop an offer of vocational training programmes for adults through short-cycle courses and training at higher education institutions, for providing of ECTS credits and flexible learning paths;
5) Develop distance learning programmes and e-learning programmes;
6) Establish universities for the third age;

**Performance indicators:**
1) The number of formal and non-formal adult education institutes/institutions;
2) The number and structure of participants in the formal and non-formal adult education systems;
3) The number and diversity of adult education programmes;
4) The geographical distribution of offers of programmes and adult education institutes/institutions.

**Quality**

Variety of programmes and providers of adult education, and the need for flexibility of the teaching programmes and process, require quality assurance through defining quality standards, clear procedures for the application of those standards and their improvement. The quality of adult education is best assessed through the outcomes expressed by quality achievement standards. The European Qualifications Framework for lifelong learning is a common framework of reference for all levels of qualifications achieved in the general, technical and academic education and in the initial and continuing education.

**Actions:**
1) Develop a system for monitoring and evaluation of the environment/conditions, teaching/learning process and educational achievements (key competences) in the adult education;
2) Define standards for education programmes, for in-service training of teachers and facilitators for adult education and for the teaching process;
3) Provide high-quality curricula – link to the educational achievements in accordance with the national and European Qualifications Framework for lifelong learning and key competences;
4) Intensify the international cooperation in the field of monitoring and evaluation of the quality of adult education and lifelong learning system, through the participation of Serbia in the international programme for the assessment of adult competences – PIACC.

**Measures:**
1) Develop a system of accreditation for institutions of both formal and non-formal adult education;
2) Establish an independent institution that will be responsible for defining and introducing a quality system, accreditation and certification of non-
formal adult education in accordance with international instruments and standards for research, monitoring and evaluation in adult education;
3) Create a stimulating learning environment through the implementation of programmes for reconstruction and refurbishment of existing facilities and equipping them with modern audio-visual equipment;
4) Pass the Law on Adult Education and bylaws which would allow the implementation of the Law and the establishment of institutions at the national, regional and local level.

Indicators:
1. Level of development, functional capacity and the actual functioning of the system for accrediting the institutions;
2. An independent Institution for Accreditation and Evaluation of Quality of Adult Education is established;
3. Degree of implementation of programmes for reconstruction and refurbishment of the existing facilities and equipping them with modern audio-visual equipment;
4. The Law on Adult Education, which will regulate the issues of adult education and bylaws are adopted on the basis thereof.

Relevance

The improvement of the relevance of adult education is achieved through monitoring and research of labour market and coordination of educational programmes with the identified needs. It is necessary to ensure a high level of impact of all stakeholders (social partners) on the adult education system, i.e. on the education policy, defining and implementing the programmes and verification of acquired skills and qualifications.

Actions:
The relevance of the system is achieved through the flexibility and the ability of organisations and institutions for adult education to respond to the needs for new knowledge and skills in a timely and adequate manner:
1. Flexibility of education – the required construction of the system of non-formal education and recognition of competences and qualifications acquired by non-formal programmes;
2. Flexibility of curricula – modularisation of curricula and development of the NQF framework model. This is particularly pronounced in Europe in the field of vocational education and it facilitates the mobility of workers and access to the educational process;
3. Flexibility of contents – instead of the transmission/acquisition orientation of large chunks of knowledge, it is necessary to be focused on
the acquisition of skills such as learning to learn, creativity, entrepreneurial skills, problem-solving ability;

4. Flexibility at the level of methodology/didactics – a greater emphasis on self-organised and independent learning.

**Measures:**

1) Monitoring and research of the labour market and coordination of educational programmes;
2) Development of a flexible education system that provides flexible learning paths;
3) Optional modules must provide qualifications that allow for further development or career change.

**Indicators:**

1) Participation of social partners in defining the curricula;
2) There is a system of monitoring the labour market needs;
3) Flexible learning paths at all levels of education.

**Efficiency**

It is necessary to raise the quality requirements for adult education to ensure the maximum utilization of capacities and resources. The implementation of standards will provide the practical use of capacities and efforts (financial, material, institutional and human). The effectiveness of the system will be established through the maximum utilization of the existing educational institutions of formal education – mainstream schools for primary, secondary and higher education, as well as adult education institutions from non-formal education system. Counselling and career guidance services will contribute to better information about the meaning and function of lifelong learning, types of programmes, requirements and opportunities for professional and personal development. A model of sustainable funding of adult education will be defined and tailored to the needs of all stakeholders, and will use different sources of financing: from the budget, through direct investment by employers and individuals to international donor projects.

**Actions:**

1) Adopt standards for the quality control of conditions, processes and achievements in the field of adult education;
2) Make a unified register of all institutions in formal and non-formal education, from national to local level, and assess their available capacities;
3) Organise counselling and career guidance services in the centres for learning within the existing formal and non-formal educational institutions, NES subsidiaries, social institutions and companies;
4) Establish a system of adult education financing.
Measures:
1) Defining standards for quality control in the field of adult education;
2) Funds from the budget should exclusively be intended for the needs of the vulnerable groups;
3) Special tax relief should be introduced, which will stimulate employers to invest in In-service training of employees;
4) Establish financial incentives for individuals to use the services of adult education;
5) Encourage efforts of educational institutions and ministries to apply for international donations.

Indicators:
1) Adopted Standards for Accreditation and Quality Assurance in the field of adult education;
2) Funds allocated from the budget for the development of adult education subsystem;
3) Employers contribute funds for vocational education and training;
4) Legislation;
5) The number of donor projects.

Recognition of Prior Learning

By 2020, it is necessary to develop a unified system for the recognition of prior learning which will recognise and certify the competencies and qualifications acquired through the additional training in accordance with the competencies defined in the NQF, so that they are valid at the national level. The system of recognition of prior learning must be based on the following key principles:

1) The unique right of every individual – identification and recognition of non-formal and informal learning. It is necessary to provide equal access and procedure to every individual in the process of recognition, with due respect to the privacy and rights of individuals.

2) Obligations of stakeholders – in accordance with their rights, responsibilities and competences, relevant stakeholders must establish a system for identifying and recognising non-formal and informal learning.

3) Reliability – processes, procedures and criteria for identifying and recognising non-formal and informal learning must be fair, transparent and based on quality control mechanisms.

4) Credibility and legitimacy – The system must be recognised at the national level and based on international standards.


**Actions:**

1) Defining the National Qualifications Framework (NQF) and the National Framework of Vocational Qualifications (NFVQ);

2) Adopt the ECVET system (European Credit System for VET) in order to provide credits for the previously acquired professional competences, regardless of where and how they were obtained;

3) The System of University Lifelong Learning (short-cycle courses and training, special programmes for employees, distance learning programmes, e-learning programmes, etc.) requires the introduction of ECTS and certification of acquired competences;

4) Recognition of the prior learning requires participation in joint international programmes in order to review good practices in the EU countries and to formulate the appropriate models in accordance with the specific characteristics of the education system of the Republic of Serbia.

**Measures:**

1) Adopt the NQF and the NFVQ in 2012;

2) Change the Law on Higher Education by including various forms of university lifelong learning through short-cycle courses – up to 30 ECTS – modularisation, the introduction of professional masters and masters for the needs of employers;

3) Develop a model for the recognition of prior learning adapted to the Serbian education system;

4) Conduct the accreditation of institutions that will implement the process of recognition of prior learning.

**Indicators:**

1) The NQF and the NFVQ adopted;

2) A new Law on Higher Education;

3) A model of recognition of prior learning;

4) The number of institutions for the recognition of prior learning;

5) Beginning of the process of recognition of prior learning and issuing Europass.

**Adult Career Guidance and Counselling**

In accordance with the concept of lifelong learning, and in order to improve the development of skills and knowledge needed for the labour market and adequate social participation of adults, it is necessary further to develop and improve the system of career guidance and counselling of adults in education and employment. The process of guidance and counselling of adults helps individuals in making the right decisions on the possibilities and ways of acquiring knowledge,
skills and competences that will serve them in the individual and professional development. The system is particularly important for the socially excluded individuals who are disadvantaged by age, gender, class, ethnicity, religion, employment status and illiteracy.

**Actions:**
1) Providing information and assistance in understanding and interpreting information, in discovering desires, abilities and needs when choosing a career;
2) Guidance and advice on how to acquire skills necessary for making important decisions on the professional development;
3) Collecting information on the degree of users’ satisfaction, as well as that of the social partners, primarily employers.

**Measures:**
1) It is necessary to establish centres for career guidance and counselling of adults in the institutions of formal and informal education.
2) Counselling in the field of additional education and employment of adults.
3) Creating a unique database of adults who are interested in additional vocational training (re-training and additional training).

**Indicators:**
1) Number of centres for career guidance and counselling;
2) Number of service users in the centres;
3) Organisation of seminars, training, workshops and other forms of education for adults in accordance with their needs.

5. Necessary Changes in the Environment

1) Develop an institutional framework which would support the establishment and development of adult education subsystem, because it has, so far, been slow in defining the present legislation and inefficient in the application. Therefore, in practice, there are fragmented series of actions and policies of individual ministries, which are not synchronised enough with each other, and with negligible effects on the needs for adult education;
2) Establish a social dialogue between the relevant social partners (employers, unions, government) and stakeholders (chambers of commerce, professional associations, communities of vocational schools, professional associations) in order to identify the educational needs, define programmes and evaluate the outcomes. The partnership should be developed at all levels – from local, through regional to international;
3) At the national and local levels, establish councils for the development of human resources in accordance with the law. The councils are required to include an equal number of employers, employees and citizens and representatives of educational institutions of formal and non-formal sectors. In this way, representatives of business community, trade unions and citizens will affect the shaping of adult education offers. At the local level, in order to adjust the offer to the needs of the local labour market, it is necessary to establish a partnership between the potential students and educational institutions, NES subsidiaries, centres for adult guidance and counselling, research centres, businesses, local governments, NGOs;

4) Develop cooperation with international organisations (EU, OECD, UNESCO) and participation in joint programmes and projects through a network of institutions and centres. The most important for Serbia is to carry out the harmonisation of legislation with the EU, in order to have access to the funds that are specifically set aside for the development of the subsystem of adult education and lifelong learning. For this type of partnership, it is also necessary to participate in international quality control systems, such as the Programme for the International Assessment of Adult Competences – PIAAC;

5) Diversify the funding sources – involve the private sector, business community and individuals in financing the programmes of lifelong learning. Fiscal policy should provide fiscal incentives for individuals and employers if they invest in adult education programmes. Through the development of international cooperation, access should be provided to various funds related to education, for example, EU structural funds in education – Tempus, Leonardo da Vinci Lifelong Learning Programmes, Grundtvig, Comenius;

6) Change the media attitude toward education – it is necessary to define a national programme of support and promotion of the concept of lifelong learning. Introduce a scientific-education channel, and specialised programmes that promote and emphasise the necessity of the adult education.

6. Strategic Interactions of Adult Education Subsystem with Other Subsystems

1. Adult Education – Economy:
   (1) Defining programmes and training at all levels of education in accordance with the needs of the labour market and economy, as well as with the wishes and needs of individuals;
(2) Cooperation in career guidance and counselling at all levels of education, especially in counselling adults to choose appropriate programmes for improving the knowledge and skills;

2. Adult Education – Professional Associations:
   (1) Joint research in the areas of interdepartmental cooperation, participation in legislative activities;
   (2) Joint participation in international projects;
   (3) Defining the required skills and knowledge;
   (4) Cooperation in defining educational profiles;
   (5) Development of the system of recognition of prior learning;
   (6) Dialogue and partnership at various levels of planning, development and implementation of adult education.

3. Adult education – Fiscal System:
   (1) Introduction of tax relief to employers’ investments in further education and training of employees;
   (2) Fiscal incentives for individuals who invest in their own education;

4. Adult Education – Culture:
   (1) Adult education programmes can contribute to increasing the national and cultural identity of the population as a whole, as well as respect for their individual values;
   (2) Programmes must be financed by the Ministry of Education and Science and the Ministry in charge of culture, information and IT society.

II. EDUCATION FUNDING

The mission of the education funding is to direct the budget and other resources effectively, in accordance with the educational strategies in order to achieve the desired effects. The financing functions are related to each level of education separately, while the relations between the levels are regulated in accordance with the defined general education strategy. Education funding is one of the most important instruments for the implementation of the educational strategies and improvement of the education system.

1. The Vision of the Public Funding System

Starting from the fact that education is a kind of a productive public expense, the vision of education should be developed on increasing the share of
total public expenditures related to the education to the level of 6% of the gross domestic product by 2020. This increase has to be continuous, as the strategic orientation of the state.

The increase of the public expenditure on education must achieve four key effects:

1) Increasing the quality of education;
2) Improvement of accessibility, i.e. coverage of education;
3) Increasing the efficiency of the education system;
4) Increasing the relevance of education, i.e. providing support to those levels, forms and education programmes that provide the greatest contribution to the society and economy.

Increasing the **quality** is the most important goal of the education process. The system of education funding at all levels must become a powerful education strategy which contributes to the increase of quality.

Improving the **accessibility** of pre-school and primary education means increasing the coverage of pre-school children, ensuring full coverage of preparatory pre-school programme and primary education, preventing dropping out in primary education and increasing the number of students who enter the secondary school. In the secondary and higher education, the funding system must ensure quality and equal treatment through the additional funding and a system of scholarships and student loans to the students of lower social and economic backgrounds. The financing system of the academic and doctoral studies must provide the coverage of all costs of scientific and educational processes that allow universal accessibility and application of the principles of excellence at the highest level of formal education. Lifelong learning must become an integral part of the work process and progress of every working-age citizen, and therefore must specifically be stimulated.

Increasing the **efficiency** has to provide better management of the education system with the reduction of the non-rational use of funds and shortening the average duration of studying. However, increasing the economic efficiency must not compromise the quality of education nor may reduce its accessibility.

Increasing the **relevance** of education is achieved by directing the financial resources in a greater extent, towards those forms of education, especially higher education, which educate the personnel for the priority development areas in Serbia.

The further text specifically elaborates the above principles and contains two parts, the first one is devoted to pre-university education, and the second one to the higher education. As higher education and scientific research are expected to become true generators of development of the entire society, one of the most important instruments for the realisation of this goal is the model of financing the higher education and science. It is, therefore, essential to formulate, through the
development of an Action Plan, a consistent policy of funding. The model shown below is one of the possible models of one of the segments of the system, which can be tested and verified only through a complete professional evaluation.

2. Pre-University Education Funding

**A Brief Description of the Existing System by Levels of Education**

In the present system of financing, there are no defined relationships and priorities on the three levels on which the system of pre-university education funding can be observed, and these are:

1) macro level – level of participation of the funds allotted for education in the GDP;
2) meso level – ratios of investments in certain levels of education;
3) micro level – ratios between certain levels of education.

At the macro level, it is necessary to prevent the reduction of public investments, and in terms of economic expansion to ensure the increasing participation of public investments in education in the gross domestic product, through prescribing the fiscal rules that limit the discretionary power of holders of the fiscal and educational strategies, and provide a stable level of education funding in the medium and long term.

At the meso level, it is necessary to remove systemic deficiencies and to direct funds saved on some level, towards the level of education identified as needing additional investments. An example of improving the management at the meso level is the reduction of the number of secondary vocational schools, transforming a number of secondary vocational schools and opening a number of comprehensive schools. Funds saved can be redirected towards improving the conditions in which the education process is implemented, purchasing modern equipment and teaching aids, etc.

At the micro level, it is necessary to establish priorities within a certain education level and redirect funds saved in order to achieve the defined goals. It is, therefore, possible, if we take the example of the primary education, to invest the funds which will be generated by the reduction of the number of classes and by merging the schools in improving the work with children who need additional education support.

The financial management at the above three levels must be implemented in two ways:

1) the adopted decisions must have a long-term character and present a strategic decision of the state in a particular sector of education;
2) the financial management becomes an instrument for the implementation of developmental education strategies.
The current system of **pre-school** education funding is decentralised and based on a model in which the co-funding parties are local communities and parents. According to the present model, the local government provides funds to cover 80% of costs, and parents provide 20% of costs (the average level, while the level of participation in particular cases depends on the social and economic status of the parents). Furthermore, the models of public-private partnership will be developed with the aim to provide a greater coverage of pre-school children.

Funds for the **preparatory pre-school** programmes are provided by the national budget and transferred to local governments based on the number of children groups formed. This system has shown different effects, depending on the method of funds management at the local level. One important example of inefficiency is building new nurseries in local communities where there is available space in schools in which the number of students has drastically been reduced. The reorganisation of space in schools and its allotment for pre-school education would achieve significant savings:

1) a new facility would not be built;
2) the administrative school staff could perform the same tasks for the pre-school institution.

As there has been no planning on and coordination of the national and local levels in the previous period, an inadequately developed network of pre-school institutions has emerged, especially in rural areas and underdeveloped local communities. Therefore, in the existing system, there is no accessibility and equity for vulnerable groups of children and students, whose social and economic background is under the average, so chances of early drop-out are getting higher, and poverty reproduction is continued.

The system of **primary and secondary** education funding is based on several input variables, where the most important variable is the number of classes. As the demographic trend is negative, school principals are struggling to obtain the approval to maintain the existing number of classes or to have as little reduction of that number as possible. Thus, due to an inadequate reduction of the number of classes, a fundamental inefficiency arises in the primary education. In the period of 1990-91 to 2008-09, the number of students in the primary education was reduced by about 215,000 (SORS). In the same period, the number of classes was reduced only by about 2,300, and the number of schools (central schools and satellite classes) by 86. It can be concluded that the real per student investment has increased significantly, but also that the funds have not been invested in the development of education but in the retention of the existing number of employees. Reducing the number of students has not been followed by the optimisation of the network of primary schools. In the secondary education, we can see the dominance of the vocational secondary education, which is significantly more expensive than the general secondary education. Having in mind the fact that
most students at the end of the vocational secondary education enter higher education, further inefficiency arises because the vocational secondary school students have more expensive curricula, and are preparing for the labour market, not for the enrollment at HEIs. It follows that it is necessary to optimise the network of secondary schools and to increase the number of students in comprehensive schools, which can remove the detected inefficiencies and save some funds. Also, the current funding system has not adequately regulated the in-service teacher training whose financing is the responsibility of the local governments. In practice, there are large differences in the application, which largely correlate with the economic development of local governments, because poorer local governments do not have sufficient resources to fulfill the legal requirements.

The Main Shortcomings of the Existing System

In addition to the above stated problems, in the existing system in which more than 95% of the national education budget is spent on salaries in the preparatory pre-school, primary and secondary education, it is neither possible to determine the strategic orientation of the state nor is the financial management possible. The current dual system of pre-university education funding, according to which the Republic is responsible for the salaries and the local governments for the provision of capital investments, covering material costs and other expenses, has shown other significant shortcomings. The negative effects of the existing concept are reflected in the fact that there are no adequate resources for developmental projects (construction of new nursery schools, funding of the professional development of teachers, purchase of modern equipment and teaching aids) at the local government level, which is especially pronounced in the poorer local governments which have a low source income. Therefore, the current state of educational facilities in the given local governments is worse than the national average, and, as time goes by the differences between the most developed and least developed local governments will only increase. Consequently, increasing the differences in the equipment of facilities, in the qualification of teachers and in the availability of modern equipment and teaching aids leads to lower educational achievement of students from undeveloped local communities and dropping out during the primary and secondary education. Also, the basis of the existing funding system also includes the maintenance of the existing network of educational institutions.

The New Funding Model

The described shortcomings of the existing system are the main generator of ideas for introducing a new model of pre-university education funding, with a mission to contribute to the shift in focus from the existing static dimension (portrayed in keeping the same network of institutions and number of employees), to
the new – dynamic dimension, directed towards the planning of measures for education development and to raising its quality and efficiency. Meeting these goals can be achieved only by introducing the system of *per-capita* funding, which means that the level of funding will vary depending on the students’ education needs and the social and economic characteristics of the environment in which a student is involved in the teaching/learning process.

The main instrument for pre-university education funding is the introduction of a funding system based on the number of children and students. In doing so, the system of pre-university education is approached as a unique one (not as a sum of three separate systems – pre-school, primary and secondary education), which defines the principles, key features, and responsibilities on the central and local levels.

A prerequisite for the introduction of a new funding system is the existence of an information system, from which data will be collected at the local community level and the level of each individual school.

In the new model of university-education funding, three key elements should be created:

1) **the central formula** – in which the cost per child, i.e. per student is differentiated based on differences established by the curriculum;

2) **the system of cost sharing** – determining the participation of central and local levels in the financing of a child or a student;

3) **local formulae** – rules for determining the level of funds at the local level.

The role of the **central formula** is primarily the calculation of costs of the educational process per typical child and student, while the purpose of the system of cost sharing and local formula is to provide an adequate level of funding in accordance with the specific education needs of children and students in a particular local environment. The **system of cost sharing** must ensure fairness and a different (or equal) degree of participation of the central and local levels. The entire system must take into account differences in the economic strength of local communities and, thus, ensure a greater participation of the central level in the financing of students who attend schools in the local communities with less economic power. After the application of the cost-sharing model with a view to equalizing the level of funding, local governments must develop models of **local formulae** within which they will quantify all the specific traits of the educational process, while bearing in mind different local circumstances (number of satellite classes, population density, various forms of additional education needs). Achieving the objectives of education strategies is only possible through the coordination of all three elements of the new funding model.

In the central formula, the system for determining salaries of employees is centralised and uniform for all employees. Given that fiscal decentralisation
also implies a decentralisation of salary determination, it is necessary to define the level of autonomy that local governments will have in determining the salaries. It is certain that full deregulation could lead to a great number of negative, undesired effects (a wide gap in the salaries in developed and underdeveloped municipalities, teachers leaving municipalities with a lower salary level, etc.), and, therefore, a certain form of limited autonomy of municipalities in defining the salaries should be established. According to that solution, local governments, in accordance with the system of cost sharing, could increase the salaries of the school staff by a certain percentage, which would make those salaries higher than prescribed for a particular position on the level of the Republic.

The process of defining the formula on the central level needs to be based on the determination of specificities of education programmes, taking into account the indicators and defined criteria that affect the costs, for a particular category of students:

1) education cycle and profiles (the preparatory pre-school programme, basic education from the 1st to the 4th grade, primary education from the 5th to the 8th grade, primary music schools, comprehensive schools – general, philological and mathematical or other specialised ones – different profiles in the vocational secondary schools, etc.)
2) education in minority languages;
3) number of children with special needs;
4) density of population in the territory of local communities;
5) quality of roads;
6) status of the social and economic indicators in a local community in comparison to the national average.

The new funding system must include the current expenditures and expenditures necessary for the professional advancement of teachers provided by this strategy and legislation. Although, in strictly fiscal terms, the increase of teachers’ salaries is a part of the current expenditures, a certain percentage of increase in the budget funds for funding the salaries of teachers who have attained a higher position will essentially be a form of a clear educational state strategy by which teachers are encouraged continually to work on their training and on acquiring new knowledge and skills.

The above indicators are the guidelines for defining and calculating the quotients in the central formula that determine the level of additional funding in accordance with the student unit price (students from the first to the fourth grade in the primary school). That actually means that, within the central formula, the amount of funds that local communities receive for pre-university education will be calculated by multiplying the student unit price with the number of students and the sum of all quotients, which reflect the specificities of the educational process in a local community. Consequently, student costs on the same educational
level will not be the same in all local communities, but will reflect the real differences that exist in the implementation of the education process.

The rules of the central formula rely on the possibility that local governments can develop specific models of local formulae and make additional adjustments, include additional indicators and calculate additional quotients, and by their application, transfer the funds to each individual school.

The focus of funding in the new model needs to be shifted from the funding of the existing network of institutions to funding the education programmes which are defined by the national regulations, as well as to the funding of education development. Through the new funding system, the funds must be provided for funding:

1) current expenditures related to the education process;
2) capital expenditures;
3) funds for education development.

**Financing of Current Expenditures**

The principles of the new expenditure funding model are:

1) fiscal decentralisation;
2) efficiency;
3) effectiveness;
4) equity

These principles are inter-related and form a coherent entity. While the principle of fiscal decentralisation means that it is necessary to share the jurisdiction over the education funding between the central and local levels, the other three principles form a connection between the funding model and objectives of the education strategy. The principle of fiscal decentralisation entails two basic types of the central level jurisdiction:

1) defining the central formula and prescribing binding rules regarding the structure of the funding model and the values of the quotients of different categories of input variables – children and students;
2) control over the transfer of funds from the local government level to schools, and control over the structure of the funds allocated, in accordance with the clearly defined rules based on the principles of the educational strategy.

This increases the role of the local government through the management of the resources on the micro level, including: the network of pre-school institutions, primary and secondary schools, the establishment of classes in accordance with the prescribed maximum number of students per class depending on the type of schools and classes, development of transport system for students, scholarships for students from socially vulnerable families, etc.
In order to increase the efficiency, effectiveness and equity, to reduce the current unit costs per child, i.e. student, and to increase the investments in equipment and development of the education system, the following means are possible:

1) optimisation of the network of primary and secondary schools;
2) increase in the work load of the teachers in schools;
3) reducing the number of students in vocational secondary schools and increasing the number of students in comprehensive schools;
4) reducing the number of hours of direct teaching in secondary schools.

Efficiency and effectiveness are the basic criteria for directing funds, which can be saved on a certain level of education, towards other levels or other goals within the same level of education.

The purpose of the principle of equity is to provide additional education support for children and students on the basis of additional education needs arising from personal needs and abilities, or social and economic background of students and children. In practice, this principle must be fulfilled so as to introduce different corrective factors.

The relationship among the efficiency, effectiveness and equity has a cause-effect sequence: more efficient use of funds and resources (efficiency) creates the conditions for defining and implementing measures to achieve the desired effect (effectiveness), which ultimately reduces the social and other differences caused by the social and economic backgrounds or personal characteristics of children and students. This helps reduce social differences between the most vulnerable segments of the population and the population on average, and reduces the need for various forms of social assistance in the future.

Education Development Funding

Funds for the education development are a part of the budget of the Ministry of Education and Science and are regarded as a part of the programme budget. Programme budget operates as a system of connected vessels with a part of the budget allocated for the running costs of the education process. This provides the sustainability of the level of university education funding in the GDP, even in case of reducing the number of students in comparison to the preceeding year, or in case of reducing certain variables that determine the level of current expenditures. So, within the same total budget (excluding adjustments for the inflation), the level of funds allotted for current expenses will decrease, and the level of funding allotted for the development of education will increase.

Funds for the development of education will provide conditions for the implementation of school development plans, which include various activities related to improving the functioning and quality of the teaching process (in-service teacher training, delivery of seminars, workshops, clubs for students, provision
of equipment and modern teaching aids, etc.). Local governments, along with the schools on its territory, will define proposals of school development plans and propose their participation in the funding of the implementation of development plans. The Ministry of Education and Science, according to the defined priorities, will make decisions on the acceptance and the level of funding of individual school development plans.

As an additional form of education development funding, the Ministry of Education and Science will allocate some funds within the programme budget intended for the implementation of developmental priorities significant for the nation. In this case, the MoES will publish an invitation for the submission of requests for developmental priority funding, and eligible schools will receive funds for the implementation of a certain programme.

Exceptions to the Funding Model due to the Number of Students

When we take into account the negative demographic trends and migrations to larger centres, the system of financing by the number of children and students cannot be applied in a number of local communities. In fact, in some local communities (especially in the primary education system), due to the small number of children, a sufficient level of funds, through the new system of education funding, could not be allocated for the smooth and efficient implementation of the teaching/learning process. In those cases, the following mechanisms are provided:

1) defining the criteria according to which certain local communities and school types (four-year, eight-year, small village schools with satellite and combined classes) are excluded from the funding system based on the number of children and students;

2) besides the variable part of the financing based on the number of enrolled children and students, the new system of financing should be adapted by introducing a fixed part – institutional grants, whose amount will depend on the number of satellite classes, the number of combined classes, and other factors.

The new funding system will be the rule, while the proposed additional solutions are only a proof that no funding system is perfect and that it is necessary to take exceptions into consideration. Sustainability of the funding system is possible only if we secure the achievement of the set goal that increasing efficiency must not undermine the effectiveness, quality and equity.

Requirements for the Implementation of the New Funding Model

The introduction of the new funding model has already, in principle, been prescribed by the Law on Foundations of Education, and in the future it will be
necessary to adopt amendments to the Law, which will further define the way of adopting the central formula, the cost sharing system and the role of local formulae. Also, after the amendments to the Law, the adoption of new rulebooks will also follow, which will provide for the completion of the new funding model, and, thus, create the prerequisites for its successful implementation in practice.

3. Higher Education Funding

* A Brief Description of the Existing System

The current funding model is governed by the Decree on the Norms and Standards of Working Conditions of Faculty and University Activities Financed from the Budget (“Official Gazette of RS” no. 15/02, 100/04, 26/05, 38/07 and 110/07), whose elements are connected to the old studying system (non-Bologna), and it is, therefore, necessary to align the Decree with the new studying system, or replace it by another model of financing. On the other hand, the Law on Higher Education foresees the conclusion of special funding agreements between the MoES and each independent HEI, which also has not been implemented in practice yet. So, the public, but also the professional community have the opinion that it is necessary critically to reexamine and improve the funding system.

The Decree mostly allocates funds in proportion to the number of the first-time budget-enrolled students, taking into account other elements such as: the size of teaching groups, the number of groups, the number of teaching staff for the group, size of the HEI premises, number of specific non-teaching positions, etc. In this way, the total level of resources is determined (expressed through the required number of employees), which is, then, adjusted to the actual number of employees at HEIs. Based on the annual balance sheets, a certain level of funds is paid to HEIs for salaries each month, regardless of the fact whether each employee is covered financially. Each HEI, from that amount (and possible from its own income), determines the level of salaries of their employees.

The funds for material costs are determined on the basis of the established norms and annual balance sheets of HEIs, and in the current costs, they represent the participation of the budget funds in the total assets of HEIs applied to any realistic account. Costs for equipment and capital maintenance are practically not paid from the budget due to the lack of funds, although it is required by the Decree (the Ministry uses funds for this purpose only in emergency cases).

For several years now, the state has not been paying material costs at the level defined by the formula in the Decree. This creates major problems to the state HEIs when they need to provide funds for covering the heating and other operating costs, and the consequence is the violation of the delivery and the quality of teaching.

The present system provides funding of the education to one part of students at the state HEIs from the national budget (about 50% of the enrolled students).
While, for some of them, the costs of living are covered, these costs are not covered for others, which complicates the situation for students studying out of their birthplaces who are not in dormitories. One part of the state HEI students (who are not in the category of budget students) and all students at private HEIs pay their own tuition.

The scientific-research work at universities is not an integral part of the Decree, but is implemented through project financing, based on the Strategy for Scientific and Technological Development of the Republic of Serbia for the period of 2010 to 2015. So, formally, there is a gap between the financing of research and of the higher education, which is not in line with the essence of academic education mission, where these two areas are inseparable.

The implementation of doctoral studies, which combines educational and research activities, at some universities, began in 2006, and there is still no defined system of financing. Most of doctoral students pay the tuition fee established by universities on their own. Slightly over 50% of doctoral students are involved in projects, through which research costs are financed, and through which students are engaged either as scholars (only health insurance provided) or as young researchers with the status of graduate research assistants at institutes or universities, or graduate assistants at universities (health and pension insurance provided).

Scholarships at all levels of studies, set up by universities, at some faculties are very high and not based on transparent calculations of actual costs of education.

**Main Shortcomings of the Existing System**

The application of the existing model of higher education funding in Serbia is characterised by the following problems:

1) HEIs, sometimes guided by short-term financial interests, allow excessive student enrollment and uncontrolled opening of their branches across the country, and, thus, jeopardize the quality and effectiveness of studies.

2) The former state enrollment strategy, and partly the way of funding, have led to the inadequate number of registered (and consequently graduated) students in various professional and scientific fields in terms of the development needs of the country. A small number of students enters faculties of natural and technical sciences, and many of them enroll at faculties of social sciences. It is therefore necessary to implement a new strategic plan for the student enrollment at universities, appropriate to the priorities of the economic and social development.

3) The current funding system makes a big difference between the budget students and students who pay the tuition fee. A part of the budget-
funded students, after meeting the appropriate requirements, receives additional budget support, in the form of very conveniently-priced accommodation and meals and other student benefits. Self-funded students pay the tuition fee and have no right to use these benefits.

4) Studies have shown that students whose financial situation is better also achieve better results in the secondary school, so ranking students only by their achievements reduces the accessibility to studies for the students in a weaker financial position.

5) The financing system is not transparent – the public does not know how much it costs to educate a student at a university. Students also do not know how much the state allocates for their education.

6) A valid comprehensive system of financing of doctoral studies is not in place. The system admitting doctoral students to funded research projects is not sufficiently transparent. Information on the possibilities of joining a project is not publicly available to students.

7) On the whole, the current funding system of the higher education does not solve any problems regarding the equity of access to education or the efficiency of studies, or quality of the studies, and it does not support studying in those fields which are particularly important for the development of the economy and society in Serbia.

These shortcomings indicate that the higher education funding is not well-regulated, so the result is social dissatisfaction both among students and among teachers, and in all segments of society that rely on higher education.

Social, Economic, Education and Other Reasons for Formulating a New Funding Model

Guidelines for the adoption of a new funding system result from the above mentioned perceived shortcomings of the current funding system.

An important and always present parameter of each good model of funding is raising the quality of education. The current funding system encourages all HEIs to enroll as many students as possible, and, implicitly, to let them pass as many exams as possible. These are not objectionable goals, because the new system should also achieve them. However, the current system has not provided mechanisms that would prevent these goals from being achieved at the expense of high-quality education. The new system should provide such corrective mechanisms, because the quality of education is the primary goal and it generates two secondary objectives – increasing the number of students and increasing the efficiency of studying.
The new funding model must still include a unique variety of levels and types of studies (academic and vocational) and establish uniform rules. The strategic aim is to reach the European average in terms of the relative spending on higher education from public funds by its increase to 1.25% of GDP. The fulfillment of the given objective can be achieved gradually, according to the following dynamics: in 2014, an increase to 0.9%; in 2016, an increase to 1.05%; in 2018, an increase to 1.15%; and in 2020, an increase to 1.25%. This includes all kinds of allocated resources – tuition, subsidized loans and scholarships, student accommodation and meals, and all other funds in the budget which, for any reason, are directed towards higher education to finance its current expenses and development.

The basic idea of the new funding model is the public establishment of the amount of the costs of studying in certain fields and the introduction of an obligation that both the state and students pay a part of the tuition. Such a distributed state and student participation is aimed at the termination of the current unjust differences between those students who do not pay for anything and those who pay for everything. The funding system is still based on the number of students, but HEIs whose founder is the Republic of Serbia will now include:

1) budget-funded students (only successful and talented students in a poor financial situation who know how much their studying costs, and the state fully covers the identified costs of studying);
2) co-funded students (a part of their studying costs is covered by the state, and another part, in the full amount of the tuition fee, is payed by themselves, with a possibility to use a subsidized state loan);
3) self-funded students (who pay the full tuition fee alone, also with the possibility to use a subsidized loan from the state).

Ranking lists of students, according to which the state will define quotas for budget-funded and co-funded students, as well quotas by fields and higher education institutions, will be uniform for an institution and, for the first year of studies, it will be formed not only on the basis of the achieved success (which is the current situation), but also based on the social and economic status of students. Each school year, the state will determine the above quotas, and strictly control their application in accordance with the terms of accreditation.

Each year, the state will make decisions on the level of funds and the distribution of those funds by fields, depending on the assessment of priorities. It is, therefore, necessary carefully to plan the quotas for the admission of budget- and co-funded students to certain fields based on the criteria of quality and relevance of HEIs and their study programmes. Quotas must be consistent with the established strategic priorities and the needs of the public and private sectors. Initially, this Strategy defines that the ratio of the enrolled budget-funded students and
co-funded students should be as follows: 15% of students enrolled at scientific faculties; 35% at the technical-technological ones, 15% at the medical ones and 35% at social sciences and humanities faculties. In addition, it is necessary to include direct incentives in the new funding model for the enrollment at scientific and technical-technological faculties.

The new funding model is further based on the existing Decree where the way of determining the required number of teaching and non-teaching staff, and the principle of existence and distribution of the university own revenues are particularly important. In addition to the required innovation in terms of compliance with the Bologna principles (models of financing of BAS, BVS, MS and doctoral studies), the Decree is necessary to be further amended, as follows:

1) Determine the amount of studying costs in certain fields and institutions, taking into account the norms of the Decree, while paying attention to the quotas of students that the Ministry plans to approve in accordance with the accreditation requirements. Determine the factors affecting the level of expenditures required, make the necessary adjustments and determine the costs of studying that will serve students as the reference amount which they will be required to co-fund. Some HEIs can prescribe certain tuition fees even higher than the amount of studying costs, including and publicly announcing other costs not covered by the norms of the Decree.

2) Terminate the unfair difference between the budget-funded and self-funded students, which refers to the extreme cases of complete non-payment of tuition fees and payment of full fees, by introducing a linear scale of co-funded tuition for each co-funded student. Thus, for a given higher education institution, a unique ranking list of students ranked by success should be formed, and only for the first year of studies, it should be combined with the criterion of social status (criteria ratio can be, for example, 50-50%, with strict control of the information on the social status). Based on the ranking list, there would be fully budget-funded students (best placed on the ranking lists), while, for other students, personal participation in the scholarship would be introduced (up to the maximum quota for co-funded students). The amount of participation would be determined according to the place a student takes in the ranking list. Students from the top of the list would participate less in the funding of the tuition fee, while those at the bottom would participate more. Students would provide funds to co-fund scholarships either in cash (as in the current system) or from loans offered by the National Development Bank and other interested banks (which would be repaid after the graduation), and those loans would be subsidized by the state. The loan amount can include the costs of living, especially for those
students who study outside the places of their living, and did not manage to get a place in the dorms. With a view to that, the state would regroup the available budget funds and create a special budget account for this purpose. The Action Plan will thoroughly define different ways of co- and self-funding through contracts and loans.

3) New funding system will continue to stimulate HEIs to generate a part of the funds through the collaboration with the economy and participation in different types of projects. In this sense, with the strict observance of standards of teaching quality and research, HEIs would be allowed:

(1) Independently (with the active participation of HEI Councils where, for the influence and control, there are state representatives) to manage assets acquired on their own, to manage their own independent income, including its investment in order to profit from the interest, and to decide independently, without the existing limitations, on the distribution of income for staff salaries and the like.

(2) To cover all fixed material costs (e.g., heating, etc.), and partially other costs (electricity, utilities, telephone bills, etc.) by applying the principle existing in the Decree on the percentage of own income participating in the coverage of total material costs (i.e., HEIs cover material costs from their own revenues in the percent in which their own income participates in the total income). It is also necessary significantly to increase the financing of costs of the current and capital maintenance, the costs of the libraries, laboratories and the like, according to the requirements of the Bologna process.

4) Gradually to increase the salary quotients based on the complexity of the work up to the ratio of 1:7 from the least to the most qualified, and to increase the so-called value of the financing ponder in accordance with the budget possibilities.

5) To develop and incorporate in the funding model the indicators of the quality of the education process and encourage excellence of the teaching staff. In doing so, special attention should be paid to making the conditions for the selection of teachers more stringent, and to the existence and implementation of a real assessment of their educational work;

6) If the new model of funding (for example, due to the small number of enrolled students) jeopardizes the work and operation of some HEIs that are particularly important for the nation, or especially important for the national culture, the state should implement an institutional budget financing. In doing so, all students may have the status of budget-funded students;
7) For some disciplines, the MoES can order a special education programme from any state or private HEI and finance it separately;
8) The model of funding of doctoral studies has to cover: tuition fees (costs of teaching, mentoring, administrative costs); research costs (material and overhead costs, research equipment, mobility, participation at scientific meetings, support for publications); work of a doctoral student – a young researcher beginner (personal income, health and/or pension insurance). The status of students is analogous to the one on the basic and master studies, and it is necessary to define the rights and obligations both of students and HEI budget users. The number of doctoral students, as well as quotas for budget and co-funded students, should be based on the need to develop the necessary academic disciplines in universities and priority fields of scientific, technological, economic, social and cultural development. The number of budget-funded and co-funded doctoral students needs to grow so as to reach 10% of students completing master studies by 2020.

In addition, it is necessary to establish other models of funding doctoral studies through partial funding from public sources, with the participation of the private sector, from foundations, where it is necessary to ensure that each doctoral student is involved in organised scientific-research work. The full funding of doctoral studies by students should be available only in those cases where the HEI guarantees to student the organisation of the research work that is covered by tuition. A special act needs to determine the rules for the financing of doctoral studies, whose terms will be implemented openly and consistently. This act should provide funds to encourage the mobility of students and professors, especially the arrival of students and professors from abroad. If possible, tax incentives for companies that send their young staff to doctoral studies should be introduced.

9) Define the rules for the allocation of funds for capital maintenance (facilities, infrastructure), as well as for the funding of the higher education development – procurement of didactic equipment (audio-visual equipment, computer equipment for teaching, laboratory equipment for teaching at HEIs); learning resources (book, magazine and database subscriptions); supporting the establishment of centres for the improvement and evaluation of teaching; financing the independent reviewers of the teaching process, etc.;
10) It is necessary to make an expert economic analysis of the effectiveness of the existing HEI network and clearly define criteria for closing some institutions and for opening new ones. In particular, we must take into account the sustainability of individual institutions and the whole network, with a clear idea about the inclusion of high-quality scientific and research institutes in the academic network.
11) To intensify professional and financial supervision of HEIs, including involvement of external evaluators, with strict monitoring of compliance of work with the financial and accreditation standards.

12) Accreditation requirements and quality standards should be harmonised with the methodology of calculating the price of education, in order to determine the optimal quality/cost ratio, where the upper level of costs is limited by the financing options, and the lower level – by the cost of providing the minimum acceptable quality of education (which is usually defined by accreditation standards);

13) To align the new way of funding with the funding of scientific-research work, as well as with introducing the elements related to: equipment, scientific and in-service training of teachers, encouraging the development of young teaching, research and artistic staff; work with gifted students; international cooperation and mobility; information support to research, financing of equipment and conditions for students with disabilities, and so on.

The effects of introducing the new funding model would be:

1) greater equality in the access to studying;
2) transparency: for each student it is known how much his/her education costs and how much the state invests in it;
3) students have the same rights, i.e. are eligible for public assistance, depending on their financial situation, success in studies and field of studies;
4) improving the structure of graduate students (by fields/disciplines), through financial incentives to guide students in their selection of studies;
5) achievement of greater efficiency of studying (timely completion of studies), under threat of losing the rights to the budget (co)funding in the event of poor results in studying and the responsibility of students for the funds that have been invested in their studies, because they have an obligation to repay those funds if they do not complete the studies;
6) satisfaction of students (and their parents), because anyone can get the budget (co)funding (to the extent defined by certain conditions) and a favourable student loan, which can cover the full amount of tuition fees, and a portion must be returned through the repayment of the loan after the employment;

On the other hand, the most sensitive issue is the reaction of students who have enjoyed, to the much greater extent, completely free studying, so far, and with the new system they will not be able to benefit from it. The estimate is that many more students will accept the new funding system with approval because it
provides free education in some extent to everyone, with the possibility that they pay a part of tuition fees not covered by the budget by using a favorable student loan. The student loan will be repaid after graduation, so during the studies, students will not be burdened with the repayment of the loan.

**Necessary Conditions for the Implementation of the New Funding Model**

It is necessary to form the National Development Bank, and to provide a fund for subsidizing loans to students. The National Development Bank and interested commercial banks would agree with the student on the terms of the loan for the payment of tuition fees. Through the subsidies to the banks, the fund would provide particularly favorable credit terms (long grace period, low interest rates).

It is essential that the Serbian Government directs the HEIs towards more rational operation with a better use of all resources available to HEIs, but not in a way which would make HEIs lower the quality of the education.

In order to achieve and monitor the necessary structure of highly qualified personnel, we should consider the establishment of a new or qualify one of the existing national institutions, with qualified and independent experts, to prepare a proposal based on which the Government should make decisions on priorities and on the number of students (by the fields) who are provided with the budget funding with different levels of co-funding. This institution can be a part of the National Employment Agency, or of some other existing institution which has the capacity for timely and continuous monitoring of trends in the society and the needs for staff, development trends in the world and in Serbia, and on the basis of that, it can make a realistic assessment of the necessary personnel and their competences.

**4. Adult Education Funding**

The model of funding of lifelong learning and, particularly, of adult education, is not determined within the system, so, at this point, it does not exist. Additional education and training is not aligned with the needs of the society and the market, so funding, either from the public or from private sources, is not continuous, but sporadic, on case-by-case basis.

A permanent lack of funds in the budget and their direction towards the basic types of education leave no special public funds for adult education. This has created a great disparity in the allocation of funds for the education of the young and the adults, as well as other discrepancies described in the section dedicated to adult education strategies. On the other hand, as a mild (because investment is not great) compensation, this kind of education features the most prominent funding of private companies and individuals.
Therefore, at this point it is necessary immediately to implement the following measures:

1) In accordance with the budget possibilities, where the state (at the national or local level) has an interest in funding those types of adult education it needs (various additional qualifications, knowledge innovation, acquisition of new competencies required etc.), particularly in the public sector, the model described in the higher education funding should be applied. Thus, public and individual funding should be combined (participation of adults who are being educated as they will profit from it by getting a new or a better-paid job more easily), and the adults who are trained should be enabled to obtain subsidized loans.

2) Introduce measures which obviously lead to increased financial investment in this type of education, particularly from the private sector, for example, by adopting certain forms of tax incentives. Namely, when there are tax incentives, companies would allocate funds to professional development and training of employees, rather than pay the funds into the budget. This would create a positive feedback because the companies would directly consider the positive effects of direct investment in employees and improvement of their business. Incentives should also be introduced for individuals who want to continue their education, as well as for the establishment of market supply and demand for this type of education.

Based on the example of best practices, a sustainable funding system for adult education and lifelong learning can gradually be established by using all kinds of funding sources – the budget, private investment of employers and individuals, as well as international donor projects.

5. Financing of Pupil and Student Meals and Accommodation

The current funding model of pupil and student standard is very good, but not sufficient. The allocation of funds, as well as the rules for obtaining benefits, have been developed and well-tuned for years. Given the overall economic situation, the level of allocations enables a relatively broad coverage of students who are awarded benefits. Therefore in this segment, such a practice must be continued by increasing the capacities of and access to education.

The importance of maintaining the achieved level of funding, as well as of its possible raising, will particularly be reflected in relation to the new scholarship funding model. So, as a large number of students will have to pay the tuition fee, this will certainly increase the demand for a better (cheaper for students, and more expensive for the state) standard (accommodation, food, transportation, pocket money, etc.). In comparison to the current system, changes will have to
occur, which means that each privilege will be given separately (not everything
to someone, and nothing to someone else), and also that a part of the costs will be
repaid through the student loan (analogously with the scholarship). So, just as the
participation of the state in scholarships is defined, the same will be done in case
of the student standard.

6. Education Funding from Other Sources

In comparison to funding from public sources (which has predominantly
been considered), the financing of education must increasingly include other
sources, such as private (personal, family, corporate and other non-governmental)
and international funding (donor and other projects). In the systems of both pre-
university and higher education, the methods of private investment are presented,
and they are mainly reflected through self-funding and co-funding. If, only for the
higher education, we take into account that the number of students at private uni-
versities makes about 20% of the total enrollment, and that the ratio of the budget
and self-funded students at state universities is about fifty-fifty, it means that the
system of the higher education, in addition to the presented level of income from
public funds, receives approximately 40-50% of funds from private sources.

The level of investment of public funds measured as the percentage of the
GDP represents a clear objective of this strategy, which is to achieve the aver-
age of the developed countries and developing countries, while larger incentives
(some of which were described earlier) should raise the level of investment from
private sources. Also, by 2020, the amount of funds that can be gained from in-
ternational projects is not at all small, and the task of all educational institutions
at all levels of education is to become engaged in these projects. This is certainly
important on the financial side, but much more on the education side, so that
those who manage finances could be better trained through those projects and
could participate in the struggle for funds which is led everywhere.

III. EDUCATION AND UPBRINGING OF CERTAIN
CATEGORIES OF STUDENTS

1. The Education and Upbringing of National Minorities

The education of national minorities is an integral part of the educational
system in the Republic of Serbia. What arises from this is that all SEDS strategic
orientations are also valid for the education of national minorities, while respect-
ing the rights of all minorities in the field of education on the basis of the consti-
tutional and statutory provisions.
In this sense, the mission of the education of national minorities is to ensure, on one hand, the right to a high-quality education as for all other citizens of the Republic of Serbia, and, thus, to enable the integration of minorities into society, and on the other hand, to secure the right to preserve and develop the national and cultural identity of all national minorities.

Specific strategic measures aimed at achieving such a mission of the national minorities education are:

1) additional financing of specific costs of national minority education (e.g. printing of limited-edition textbooks in minority languages),
2) the development of educational programmes in those disciplines (school subjects) that are of particular importance for the preservation and development of the national and cultural identity;
3) a special right to cherish the native language of every national minority, the right to teach in the native language, and in cases where it is possible, to provide teacher education in the native language for performing the teaching in the native language, and the right to obtain educational resources in the native language;
4) adequate representation in the management and leadership bodies of educational institutions;
5) the right to participate in decision-making on the network of educational institutions when it is relevant for the rights of the national minorities to education;
6) special measures to increase the access to education and other support measures, especially for those national minorities whose members largely belong to educationally defavourised social groups (Roma, Vlachs);
7) the education of national minorities should, wherever possible, take place within real bilingual institutions and programmes, which include members of both the minorities and the majority, in order to develop good inter-ethnic relations and better social cohesion and integration.

2. Education of Gifted and Talented Students

Gifted/talented students, and students who achieve very high educational results represent that part of the population of children and youth who have the potential to become the leading resource in the creation of new values in different fields. These categories of students should be provided with education that will encourage the full development of their capacities while taking into account their full development. In order to meet their needs and capabilities within all educational subsystems, the following measures for continuing the support of the development of these students will be provided:
1) Development of a system for the identification of gifted and talented children, regardless of the environment in which they live. It is particularly important to identify those children in underdeveloped, poor and socially underprivileged backgrounds, where the local community, rural teachers and assistants in the departments of the MoES may play a key role. Greater involvement of children from vulnerable groups in pre-school education will also enable better early identification of the talented;

2) Applying modern concepts of teaching/learning and methods of active learning/teaching, research teaching and the like in the pre-university and university education provides greater individualisation of teaching and opportunities for education to meet the needs of different types of children and young people;

3) Existence of optional subjects and a rich offer of extracurricular activities in school creates room for the development of specific interests, abilities and talents of students and introduction of a wide range of activities by type and complexity. Extracurricular activities that involve cooperation between schools and scientific, cultural, sports, technical, technological and other institutions provide special room for the gifted and talented students;

4) A single-shift work and good working conditions in the school (equipment, books, learning and work materials) allow the multi-purpose use of school facilities and equipment, and the creation of conditions for group work, peer education, exchange and cooperation with relevant experts and institutions within small research and project teaching, all of which provide opportunities for those with special interests, skills and talents to become engaged in many different ways;

5) Possibility of modularisation of teaching, and different trajectories for the student to move through the general secondary education provide an opportunity to choose different programmes and more challenging teaching/learning methods (research teaching, project-mentoring system, including projects in research institutions, individual projects);

6) Developed performance standards also define achievements in the highest categories, and the measures and actions planned within these strategies are aimed at significantly increasing the number of students in the highest categories of achievement;

7) Developed system of career guidance and counselling in schools and higher education institutions;

8) Development of active learning in school activities (research, art, sports and other summer schools, camps, excursions, classes in nature, and so on) provides a possibility to connect, design and practically
apply school and academic knowledge, which is an additional challenge for the school and the academically successful students;

9) In addition to promoting the intellectual growth and development of specific talents, equal attention is paid to other aspects of this category of students. In working with gifted and talented children and young people, special attention will be paid to the upbringing aspect: to encouraging their cooperation with others; to the relation to their own communities; to raising the awareness of mutual interdependence; to understanding the rights and obligations; and to the psychological and social support of this group of students in developing a realistic self-image, self-evaluation skills, metacognitive knowledge and skills for effective and efficient management of their own lives and careers;

10) Developing a school and HEI ethos must include the creation of a climate in which the following is supported and valued: efforts and persistent work, initiative, constructive cooperation with others, a wide variety of knowledge and skills to be connected and applied in daily lives, striving for excellence and top achievement, participation and awareness of one’s own responsibility, concern for the welfare of one’s communities and sustainable development, humanitarian work and community work. Such an environment, which supports and shows all good and high-quality activities and products, raises the overall level and quality of work at school and creates a fertile basis for the development of top achievements;

11) The education of the gifted/talented should tend to avoid competition for awards, especially in contests focusing on one-sided and simplistic performance indicators that suppress learning patterns characterised by the depth and breadth of knowledge, skills, creative performance and intrinsic motivation. It is necessary to design new forms of competition that really support really top achievements in learning and creative learning, and the genuine products of young people’s creative work;

12) in the evaluation of schools, both specialised and mainstream, the key measure is not the effect of the abilities and talents of students, good home, social and cultural and economic circumstances, or work with private tutors, but the assessment of the pedagogical added value of schools, i.e. the specific contribution to school development, upbringing and education of students;

13) Develop a complete system of support and incentives to gifted and talented students. The primary mission of this system is to create top experts who prove themselves by the quality of their results, to introduce standards of excellence to our education system which, at the
highest levels of education (master and doctoral programmes, post-doctoral programmes), creates new values of innovation, research and artistic products;

14) The system of incentives to the gifted/talented students and students who achieve outstanding results in learning should include: various awards, special scholarships, funds and foundations for scientific and artistic youth, centres of excellence, talent centres, specialised schools and programmes, research stations, regional centres for the talented, artistic colonies, summer schools, etc. All these forms of incentives to the gifted/talented that are funded from public sources should be coordinated in terms of functions they have, should be linked to social priorities, and based on the same principles of providing financial support. All of these support systems must be within the MoES, for they are an important part of the education system and should be in line with the mission of education as a whole;

15) The state should encourage (through tax relief, by highlighting those who demonstrate social responsibility in this area) forming a support system for gifted/talented students by companies, local governments, private founders who should all have full freedom to define the fields in which excellent results and methods of support and incentives are achieved.

3. Education of People with Disabilities and Special Needs, People with Learning Difficulties and People from Underprivileged Backgrounds

People with disabilities and special needs, people with learning difficulties and people from underprivileged backgrounds and social groups (children, adolescents and adults) have the right to high-quality education and to respecting their specificities (OECD classification).

The main strategic orientation in the education of these people is an inclusive approach to education that ensures their rights and ensure their social inclusion.

Taking into account the characteristics of these people, the following two models of education will be applied:

1) inclusive education;
2) special education (education in special education institutions and programmes).

The model of inclusive education will be applied, as a rule, for all people who fall into the categories of persons from underprivileged backgrounds (social
groups), for all people with learning difficulties and for persons with disabilities and special needs for whom this is the best solution.

Decisions on which of the two models to apply should be based on an expert assessment of what solution is in the best interests of the people with disabilities and special needs, people with learning difficulties and people from underprivileged backgrounds, but also on the assessment of effects of inclusion for other people in inclusive groups.

Decisions on which model of education is the best for people with disabilities and special needs, for people with learning difficulties, and for people from underprivileged backgrounds in practice will be made on the basis of the opinions of experts (doctors, pediatricians, child psychiatrists, psychologists, therapists and educators). The introduction of the inclusive education model and the gradual translating of certain categories of special education model into a model of inclusive education, especially for people with special needs shall be decided on based on the opinions of experts and after providing all requirements for this translation: provision of additional financing; preparation of facilities and special assistance to institutions which have a higher number of such people; training of staff; provision of adapted spatial and other conditions; development of appropriate programmes (including individual education plans); learning resources and technical tools; providing special support systems (including personal/education assistants).

By introducing an inclusive model of education, special education institutions will necessarily alter their character (in terms of people they include and mode of work, they get a new role of a specific resource center).

The progress in learning of people in the inclusive education system should regularly be monitored by professional teams and based on the monitoring they should determine which specific types of support should be provided to such people in the future work.

In order to ensure access to the education to people with disabilities, in addition to the general requirements, special conditions must be provided, such as: providing transportation when education institutions are at a greater distance; the physical availability of space in which the education process is performed; providing technical aids; possibility of using adapted information and communication resources and distance learning; help of a personal assistant, etc.

In terms of standards for education achievements of people with disabilities and special needs who can be educated, it is necessary to consider the following alternatives: to apply the basic level of standards that have been developed for an appropriate level of education in mainstream schools or to define specific standards (or to make them dependent on the category and degree of disability). Education programmes for these people have to be developed by starting from the defined standards of achievement.
The advantages of the inclusive approach to education are not only reflected in the achievement of the right to education for all, in the increase of social inclusion and poverty reduction, but also in the **significant upbringing effects**. Inclusive approach in schools and in HEIs creates the basis for the establishment and development of cooperation, solidarity and mutual respect, tolerance to diversity, openness towards something else and different, and the prevention of prejudice and stereotypes in thinking and behaviour.
PART FIVE
IMPLEMENTATION

1. Action Plan

Further activities on the elaboration of the SEDS document shall include producing an action plan and defining specific measures, implementers, timelines for the completion of activities and the resources needed.

The objectives set by this document will be achieved by the implementation of the Action Plan.

Funds for the implementation of the SEDS will be envisaged by the Action Plan in accordance with the resources allocated in the budget of the Republic of Serbia.

2. SEDS Reference to the Previously Adopted Strategic Documents

The Vocational Education Development Strategy in the Republic of Serbia (“Official Gazette of RS” No. 1/07) and Adult Education Development Strategy in the Republic of Serbia (“Official Gazette of RS”, No. 1/07) shall apply until the expiration of the period for which they have been adopted having in mind that the Action Plan for the implementation of the Vocational Education Development Strategy in the Republic of Serbia for the period 2009 – 2015 (“Official Gazette of RS”, No. 21/09) shall apply by the beginning of the school year 2013/2014 by which time the Action Plan for the implementation of SEDS will be adopted, which will include the measures and activities relevant to the implementation of the Strategy for the Development of Vocational Education in the Republic of Serbia and Adult Education Development Strategy in the Republic of Serbia.

3. Appendices

This strategy includes: Appendix 1 – 2020 + Serbia: Vision Development and Requirements for the Education System and Appendix 2 – Development and Use of Educational Statistics and Information System in Education, which are attached to this strategy as its integral parts.
4. Publication

This Strategy will be published in the “Official Gazette of the Republic of Serbia.”
No. 61-7279/2012-1
In Belgrade, 25 October 2012

GOVERNMENT

PRIME MINISTER

Ivica Dacic

Appendix 1: SERBIA 2020+: EDUCATION SYSTEM
DEVELOPMENT VISION AND REQUIREMENTS

General trends of long-term structural changes in the entrepreneurship, public affairs, science and technology, culture and lifestyles, in the wider environment of Serbia

Taking into account the general trends of long-term structural changes in the wider environment, the primary development goal of Serbia is to raise the competitiveness of the Serbian economy. General trends indicate that the dynamic development of the Serbian economy is not possible without structural changes, whose pace will primarily depend on three factors: (1) increase of investments, (2) reform of the education system, (3) improvement of the business climate. Only new investments can create competitive production and sustainable economic growth based on the opening of new working places. Here, under the investment, we also refer to the private investments, which are highly dependent on the business climate, as well as public investments, particularly in the infrastructure. Investments in the public infrastructure can be achieved without a serious increase in the debts of the country, if the efficiency of the public sector is improved; it implies the establishment of a programme budget, combating corruption and restructuring public enterprises.

In addition to the negative demographic trends, technological and industrial stagnation and large regional differences, a comparative analysis of the development gap especially shows the education differences:
Table 1. **Education differences**

<table>
<thead>
<tr>
<th></th>
<th>Norway</th>
<th>The Czech Republic</th>
<th>Slovenia</th>
<th>Hungary</th>
<th>Romania</th>
<th>Bulgaria</th>
<th>Serbia</th>
</tr>
</thead>
<tbody>
<tr>
<td>The expected number of years of education of children</td>
<td>17.3</td>
<td>15.6</td>
<td>16.9</td>
<td>15.3</td>
<td>14.9</td>
<td>13.7</td>
<td>13.7</td>
</tr>
<tr>
<td>The average number of years of education 25+</td>
<td>12.6</td>
<td>12.3</td>
<td>11.6</td>
<td>11.1</td>
<td>10.4</td>
<td>10.6</td>
<td>10.2</td>
</tr>
<tr>
<td>Index of education</td>
<td>0.985</td>
<td>0.924</td>
<td>0.933</td>
<td>0.933</td>
<td>0.831</td>
<td>0.802</td>
<td>0.790</td>
</tr>
</tbody>
</table>

Source: UNDP, HDR 2011

The vision of the education system in Serbia in 2020 is based on an adopted strategic concept of a new model of economic growth of *Serbia 2020: The Concept of Development of the Republic of Serbia by the Year 2020*, which assumes some important changes in the environment: macroeconomic risks will be more pronounced; regulatory requirements at national and international levels will be more stringent; and the growth of public expenditures in most countries in the world that stopped a drastic reduction in demand is of a temporary character. In addition to these external factors, the economic growth of the Republic of Serbia in this decade will be determined by the local and inherited problems and future challenges. The key agent of economic development of the Republic of Serbia in the last decade has been the improvement in labour productivity, but primarily on the basis of reducing the number of employees, and in the structural sense, it was followed by the rapid growth of the service sector and the production of non-tradable goods, with a rapid decline in the participation of industry, especially manufacturing and agriculture. Global development trends unambiguously indicate that such a nature of growth is not sustainable and this tendency must be reversed toward increasing employment and reindustrialisation.

Re-industrialisation in Serbia will take place through two parallel processes:

1) revitalisation and modernisation of manufacturing industry and associated services;
2) development of a series of knowledge-based industries, especially the creative industries.

The education system must provide strong support for these processes. The essence of education reforms lies in adapting the entire education system to the needs of the overall development of the Republic of Serbia, and particularly to the needs of the future labour market by meeting the demand of the employers at the end of the decade.

By recognising the global trends of long-term structural changes, the vision of the Republic of Serbia in this decade should include growing-up into a society where educated and creative people create high quality innovative products.
and services. Focus must be placed on increasing the competitiveness, that is, increasing the productivity and better utilisation of all available resources, and on the transformation of the economy towards areas of higher productivity, which support the growth of the creative potential of the Serbian economy. Only in this way can the absolute and relative gap in development be reduced in comparison to other countries. The role of education in Serbia, as a lever for economic growth and social progress, is to develop the ability of understanding and critical thinking, as well as to encourage initiative, creativity and entrepreneurial spirit, with teamwork and positive social values. Free, open and high-quality education, accessible to all as a basic democratic right, one that covers the entire lifespan and that includes ethical and aesthetic relationship to the world, should be a framework for developing our potential and moving our society on the scale of competence and active participation in the global market. Creating a new class of young, well-educated, creative, energetic people, with the values of individual freedom and social responsibility characterised by dedication to work, achieving profit rationally, healthy competition, and competition in the market, savings and investments, will be the determinant of the future economic growth. A huge effort should also be made to re-train and improve the current workforce, by providing them with knowledge and skills that are required by a new economic structure.

**Expected Changes in the Labour Market Demands in Europe**

**Originating from the “Europe 2020” Strategy**

The basic assumption of the Europe 2020 Strategy is that the future labour market in Europe needs to be made more educated, more innovative and more entrepreneurial in order to maintain and increase competitiveness in the global context. Given that the labour price in this country is growing, the conclusion is that Serbia should launch the same initiative aimed at the development of an educated workforce that will attract more investments in higher value-added manufacturing, while, at the same time, serve as a basis for encouraging the creation and growth of innovative entrepreneurship.

Strengthening knowledge and innovation as drivers of future “smart” growth means improving the quality of education at all levels, free flow of people, greater mobility of students and working practice, learning foreign languages, gaining experience through studying and living abroad, building networks, raising the quality of the research infrastructure and research, promoting innovation and knowledge transfer, maximising the practical benefits of research for small and medium enterprises, public-private partnerships, encouraging career development for researchers, access to cheap loans for innovative products, high-quality Internet access and so on.

The European Union has set key competencies described in the European Qualifications Framework to be acquired: 1) communication in the native language; 2) communication in foreign languages; 3) knowledge of mathematics
and basic knowledge of science and technology; 4) computer skills, 5) learning how to learn; 6) social and civic competence; 7) sense of initiative and entrepreneurship; and, 8) cultural awareness and cultural expression. In order to raise the quality of work at universities in the EHEA, the following standards have been formulated: accountability for quality; interest of society in high standards; quality of academic programmes; effective organisation; transparency and external expertise for quality assurance; accountability to private and public investments; and openness to diversity, creativity and innovation.

Serbia has begun the process of adaptation to the changes in Europe with the initiation of the Bologna process of university reform as an equal partner, but also with a certain inconsistency. Particular concern is raised by the fact that even today we have a large number of students per teacher, many students do not graduate on time, interactivity in the classroom is low, teachers continue to advance in rank without published papers, etc. Reticence of universities to new people and new ideas is considered a key obstacle to achieving the necessary reforms despite many TEMPUS and other EU university programmes aimed at the greater integration of Serbian universities with the flow of reforms and improved curricula and teaching standards in the EU. The process of adaptation to changes in Europe is also supported in Serbia by involvement in research projects such as the Framework Programme 7 (hereinafter referred to as “FP7”) with more success than the average in the Western Balkans. This is particularly important, because about half of the Serbian FP7 projects are aimed at increasing the research capacity. However, the reform of scientific-research organisations and the evaluation of work of scientific-research organisations have not occurred, given that the funding is provided on project-basis only by name because the pass rate is about 90%, and the earnings of all researchers are similar (only partially affected by the success in publishing), which does not encourage the best but the average. By obtaining the status of an official candidate for the EU membership, many additional opportunities will be opened up for Serbia for scientific and educational European integration, with significant support from the EU.

The Prediction of Demographic Trends

Demographic transition of the Republic of Serbia, especially in the last two decades, has been characterised by a strong demographic regression: the total population in the period 2002 – 2011 declined by 377,335, or more than 5%. Observed by regions, the number of population has decreased in 146 municipalities, and is higher only in 22 of them. Since 1992, the natural population growth has been steadily declining, which resulted in an absolute population decline, regardless of a positive migratory balance. Serbia has recorded a decrease in the fertility rate from 1.6 to 1.4 children per woman, which alignes it with the group of countries which failed to provide even simple reproduction in the population.
The aging index of Serbia has doubled in the past 50 years. In the structure of the total population of Serbia in 2010, young people under 14 years of age represent only 15%, which is less than the participation of population older than 65 (17%). The working-age population comprises only 67.6% of the total population, which is less than in most transition countries. The life expectancy of the male population of the Republic of Serbia in 2010 was 71.4, and of women 76.6 years of age. In the past 60 years, the average life span of women in the Republic of Serbia has been extended by 20 years (from 56.9 to 76.6).

The trend of the regional demographic depopulation of underdeveloped and border areas leads to the complete demographic extinction. Spatially, settlements of a small number of population and settlements of up to 300 residents prevail. Internal migrations are still going in a steady direction, i.e. from underdeveloped, isolated areas to the economically developed, with better living conditions and higher living standards (leaders are the city of Novi Sad with the migration balance of 9.4 ‰ and the City of Belgrade with a rate of 7.8 ‰).

Map 1. Regional demographic typology of areas
Demographic projections, based on the current assumptions, indicate that the total projected population of Serbia in 2020 should be lower in all cases than in 2011. According to the pessimistic predictions, the population of Serbia would be about two million lower in 2052 than in 2002. In the period of 2010–2050, the share of young population (15–24) in the total population would fall from 12.1% to 11.2% (according to the moderate predictions).

Table 2. Projected demographic structure of Serbia in 2050

<table>
<thead>
<tr>
<th>Key Demographic Indicators</th>
<th>2010</th>
<th>2050</th>
<th>Growth/Decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young (15-24)% of the total population</td>
<td>12.1</td>
<td>11.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>Elderly (65 +)% of the total population</td>
<td>16.9</td>
<td>23.2</td>
<td>6.3</td>
</tr>
<tr>
<td>Labour force (15-64)% of the total population</td>
<td>67.6</td>
<td>61.1</td>
<td>-6.5</td>
</tr>
<tr>
<td>Demographic dependency rate of the elderly</td>
<td>24.9</td>
<td>37.9</td>
<td>13</td>
</tr>
<tr>
<td>Share of the elderly in the population of working age %</td>
<td>20.9</td>
<td>21.6</td>
<td>0.7</td>
</tr>
<tr>
<td>Share of very old (80 +) in the elderly (65 +)</td>
<td>22.3</td>
<td>26.4</td>
<td>4</td>
</tr>
</tbody>
</table>

Source:: SorS

All options of demographic projections indicate a significant increase in the share of older people (65 +) in the total population, from 16.9% in 2010 to 23.2% in 2050. The activity rate in Serbia, due to a relatively low level (62% in 2010) compared to the EU member states will gradually increase, as suggested by the European Commission projections. For both sexes in the 15-24 age group, the activity rate will be declining throughout the whole period, reflecting the trend of the expected increase in the duration of education.

The increase in the average age and life expectancy, and the share of older population will cause changes in the age structure of the workforce. A certain increase in the share of older workers (55 +) in the total labour force is expected – from 13% in 2010 to 14% in 2040. However, if there was an increase in the activities of the older men and women of working age, especially of women, then the share of older workers could be increased by 3% in the period of 2010 – 2050.

Table 3. Projection of the structure of the labour force
– according to the moderate demographic predictions with the increasing activity rates –

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>Growth/Decline 2010–50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young 15–24</td>
<td>8.6</td>
<td>9.0</td>
<td>9.3</td>
<td>9.0</td>
<td>9.4</td>
<td>0.8</td>
</tr>
<tr>
<td>Working age 25–54</td>
<td>78.2</td>
<td>78.6</td>
<td>76.1</td>
<td>74.4</td>
<td>75.0</td>
<td>-3.2</td>
</tr>
<tr>
<td>Older working age 55–64</td>
<td>13.3</td>
<td>12.5</td>
<td>14.6</td>
<td>16.7</td>
<td>15.7</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Source: SORS
The largest number of workers in 2010 belonged to the age group of 30–34, and in 2020, the greatest number of potentially employed is expected in the age group of 35–39. It is anticipated that in 20 years, half of the employees in some organisation world-wide will be hired on part-time basis (which directly affects the way of education). These trends will mean a growth in immigration, and, for Serbia, it entails a danger of an even greater brain drain, and the inability to attract professionals from abroad, if the production system, the social ambience and the culture do not change. As shown above, the fundamental changes in the labour market, especially the decrease in the share of the younger generation, will lead to a new employment structure that should attract and retain older people in the employment status. The intensity of these changes will directly depend on the level and quality of the acquired education, and also on the establishment of greater gender equality and greater social inclusion of all marginalised groups.

Therefore, special importance belongs to the development of lifelong learning and more massive adult education as mechanisms for structural adjustment of the new workforce to the labour market needs. These processes can be encouraged by knowledge innovation, re-training, additional training, etc.

The Structure of Future Production System in Serbia and the Types of Technologies that Will be Used – Changes in the Structure of Demand in the Labour Market

The industry and the education system are related and functionally complementary systems, and their development in a stable social environment is always a co-evolutive process. Therefore, in one of its important part, the SEDS has to be aligned with the strategy of industrial development and should actively contribute to the achievement of the key objectives of the industrial policy.

The industrial system of the Republic of Serbia is in a state of profound crisis. The development discontinuity that occurred at the beginning of the 1990’s, has been maintained in its foundations to this day and has only partially been compensated with the new investments launched after the transition that began at the end of 2000. The global economic crisis of 2008 additionally aggravated the situation by limiting investments while harshening the competition. This process has had a major impact on the state of the labour market and the technological profile of the active part of the economy. Today, the focus of the technological profile of Serbia is on sectors of low and middle technologies that employ over 80% of industrial workers and within which the very same share of the total volume of industrial activities is achieved. Industrial production and export structure, in the most part, are based on low added value products.

The strategic document “Serbia 2020: The Concept of Development of the Republic of Serbia until 2020” recognises this situation and states that “continued economic growth according to the existing model is not only undesirable, but
it is no longer possible”, where it explicitly states the necessity of establishing a “new industrial policy based on the production of industrial goods, promotion of export, saving resources and energy efficiency” (2010). In this context, the strategy and policy for the development of industry of the Republic of Serbia for the period of 2011 to 2020 further elaborate and quantify the set framework in detail (2010).

Table 4: **Projected number of employees by 2020 in the Serbian economy**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Situation in 2010 (x1000)</th>
<th>Relative Share (%)</th>
<th>2020 Growth (%)</th>
<th>Relative Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Number of the Employed</strong></td>
<td>2,540.0</td>
<td>100</td>
<td>16.9</td>
<td>100</td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td>621.0</td>
<td>24.4</td>
<td>3.2</td>
<td>21.6</td>
</tr>
<tr>
<td><strong>Industry</strong></td>
<td>614.5</td>
<td>24.2</td>
<td>27.3</td>
<td>26.4</td>
</tr>
<tr>
<td>Mining and Quarrying</td>
<td>27.3</td>
<td>1.1</td>
<td>26.4</td>
<td>1.2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>422.1</td>
<td>16.6</td>
<td>17.8</td>
<td>16.7</td>
</tr>
<tr>
<td>Electricity, Gas, Water</td>
<td>45.8</td>
<td>1.8</td>
<td>3.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Construction</td>
<td>119.3</td>
<td>4.7</td>
<td>70.6</td>
<td>6.9</td>
</tr>
<tr>
<td><strong>Service Industry</strong></td>
<td>1,304.5</td>
<td>51.4</td>
<td>18.4</td>
<td>52.1</td>
</tr>
<tr>
<td>Trade</td>
<td>347.2</td>
<td>13.7</td>
<td>43.5</td>
<td>16.8</td>
</tr>
<tr>
<td>Hotels and Restaurants</td>
<td>76.4</td>
<td>3.0</td>
<td>7.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Transport and Communications</td>
<td>158.4</td>
<td>6.2</td>
<td>29.5</td>
<td>6.9</td>
</tr>
<tr>
<td>Public Utilities and Personal Services</td>
<td>119.1</td>
<td>4.7</td>
<td>7.9</td>
<td>4.3</td>
</tr>
<tr>
<td>Real Estate, Renting</td>
<td>89.6</td>
<td>3.5</td>
<td>14.8</td>
<td>3.5</td>
</tr>
<tr>
<td>Financial Intermediation</td>
<td>55.5</td>
<td>2.2</td>
<td>7.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Administration, Army, Police</td>
<td>128.2</td>
<td>5.1</td>
<td>1.7</td>
<td>4.4</td>
</tr>
<tr>
<td>Education</td>
<td>148.6</td>
<td>5.9</td>
<td>2.5</td>
<td>5.1</td>
</tr>
<tr>
<td>Health and Social Work</td>
<td>174.1</td>
<td>6.9</td>
<td>2.4</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Source: Strategy and Development Policy of Industry of the Republic of Serbia of 2010 to 2020

Economies based on services are successful if they have developed manufacturing industry in their structure. Therefore, the Republic of Serbia needs the following:

1) revitalisation and re-engineering of the manufacturing industry, which is closely associated with the development of clusters, open to cooperation with universities and scientific-research institutions, competitive and export-oriented;

2) development of a wide range of service activities associated with this production.

In accordance with the current industrial policy, the basis of the future production system of Serbia by 2030 will be determined by the process of reconstruction and transformation of the technological bases in the field of traditional
low and middle technology (LMT) industry sectors. A new industrial strategy determines that this process will be accomplished by using three transformational instruments (3R package): revitalisation (2011 – 2015), re-engineering (2015 – 2020), and development expansion (2020 – 2030), with some of these tools overlapping in time.

In this context, the changes and types of technologies of the future production system in Serbia will be determined by the impact of three key factors that are associated with the general trends of the development of the manufacturing technology in the global framework and with global social megatrends related to the engineering:

1) new production paradigm of personalised, i.e. multivariant production;
2) standards of energy efficiency, renewable energy sources and efficiency in the use of natural resources;
3) standards of environmental protection and climate changes.

Technological bases of the new production paradigm are industrial ICT technologies, empowered by cognitive functions integrated into the production equipment: intelligent robots, intelligent numerically-controlled machines, intelligent automation, intelligent manufacturing systems. From the aspect of engineering in the upcoming decades, strategic programmes established by the European Commission named Factories of Future (FoF) are very important and include three key components:

1) **Smart Factories** – a technological platform for agile manufacturing and personalisation, including the automatic control of production processes, production planning, simulation and optimisation, robotics and a complex of tools for sustainable development;
2) **Virtual Factories** – a technological platform for creating new values within the global network operations, including the management of global supply chains;
3) **Digital Factories** – a technological platform for the design of manufacturing processes and systems to manage the life cycle of products effectively, including simulation, modelling and other ICT CAx engineering techniques, which cover the complete life cycle of products.

Regardless of the current state of the domestic industry and its objective distance from such production systems, it is of existential importance for Serbia to create the necessary resources through the education system, particularly in the field of engineering and research, with the aim that in the near future it creates a strong and sufficient base for an efficient transfer of production technologies of this type and their integration in the industrial system of the Republic of Serbia.

Energy efficiency and renewable energy sources will create a very wide corpus of manufacturing capabilities through technological changes that will
affect the LMT industrial sectors and winning new products. This will bring the need for new occupations/competencies/skills which, at this point, do not exist in Serbia. For example, a very large space opens up in the area of renewable energy sources: wind energy, solar energy and energy derived from biomass, which is a whole new area for the development of new industrial sectors and creates a new demand for specialised workforce profiles. Energy efficiency also carries great potential, especially for the construction industry, which through various private and public partnership (PPP) programmes can gain a great development momentum in building a trans-sector corpus of industrial high value-added products. Here, of particular importance is the application of energy efficient and environmentally neutral buildings, including smart buildings that pull the development of new highly-valued construction technologies with mechatronic basis, new materials and new production processes (industrial fabrication of buildings). In the transport sector, especially in the automotive industry, various aspects of energy efficiency and environmental impact in the upcoming decades will be the dominant influence on the technological development.

The standards of environmental protection and climate change, in response to a correspondent global mega trend, have a great potential for technological development with a very wide trans-sector range in complete LMT domain, including the capacity for the individual development of specific and previously unknown technologies and industrial sectors. The industry in the Republic of Serbia will have to adapt to these standards within the European integration processes, and that process has to start immediately, because these types of standards have to be applied to export products. The recycling industry, in the next decade, will be given a significant development space, with a significant change in the concept of recycling in terms of technology, for example, through intensive development of disassembly technology (minimum material degradation), with mass application of industrial robots in these tasks. Simultaneously, the standards in this area will drastically change the industrial products by introducing a new conceptual framework for the design, now known as sustainable/environmental design, with a focus on the application of environmentally-neutral materials, functional quality and durability, re-usability, suitability for recycling, energy efficiency with low-carbon emission, biomimicry and the like. The corpus of these technologies should be widely represented at all levels of education, along with raising awareness of the impact of technologies on the environment and, thus, the quality of life.

In the context of LMT technological sectors, agriculture and food industry are particularly important. Serbia has a huge natural potential for the development of agriculture, but this cannot be exploited without: 1) a radical change of technological bases (mechanical engineering, automation process and digitalisation of the process through the extensive use of ICT in organisational corpus); 2) extensive development and application of biotechnology; 3) building a strong
sector of food industry, with two main objectives: the production of healthy food and high value-added products. Therefore, the SEDS in this context must be oriented in such a way that the development of agriculture should be considered an imperative within a broader technological platform for food production rather than as an isolated industry. It would be beneficial for Serbia if foreign investments were oriented towards export sectors.

From the above stated, there is an obvious major technological and programmatic distance between the current state of the production system and the industry of Serbia, and the state to which the system needs to be transformed by 2020. In this regard, the education system is facing very extensive and complex tasks. Regardless of the stereotype saying that a comparative advantage of Serbia is the high-quality labour force, due to the state of the industry, enormous development of discontinuities and enormous loss of industrial workers, Serbia, at this moment, does not objectively have a qualification structure of employees that complies with the requirements of the planned industrial development in the process of revitalisation and re-engineering of technological production bases which should be set before the labour market in the coming decades. The erosion of the intellectual capital in the domain of production technologies and industrial production is enormous and this process has a steady downward trend. A similar thing can be said about the education system, particularly at the level of GASE and the complete tertiary level of education, where the inconsistencies of the current supply of competences, knowledge and skills with the expected actual needs of industrial companies in the LMT sectors are obvious.

The intensive development of production technologies inevitably entails changes in the labour market in terms of shifting its focus towards tertiary education qualifications (in modern factories engineers manage CNC machines, robots and flexible lines). In this sense, the EU commitment is indicative as its primary goal is to have, in the field of production technologies, at least 40% of industrial workers who must possess the qualifications acquired at the tertiary education level by 2030 (projected structure for 2020 is EU27 + Norway + Switzerland: higher education – 34.9%, secondary education – 50.1%, primary education – 15%). Starting from these facts, Serbia has to adjust its industrial and educational system, not only because of the process of joining the EU, but primarily because of raising the competitiveness of the economic system in the global market. In this sense, the revitalisation of engineering is essential. Transfer of technologies, transfer of technological knowledge and a gradual strengthening of one’s own development activities cannot be achieved without a strong engineering corpus. For industrial development, the existence of entrepreneurial spirit as the national characteristic is essential, as well as the entrepreneurial orientation towards production and production technologies. Young generations, starting from the primary education, must be directed in this direction, with a special
focus on the systematic development of the following characteristics: innovation, agility, propensity to risk, willingness to cope with failure, and creativity in business ideas that can be commercialised and bring profit. In the process of creating an entrepreneurial spirit and skills, multidisciplinary approaches should be used. Technical, economic, and law schools are especially important for the development of entrepreneurship. In addition to the educational programmes, it is necessary to create a general atmosphere in the society that will promote and encourage entrepreneurship and self-initiative of this kind.

Harmonisation of the technological development of the industry and the education system is achieved through the interaction that occurs in the labour market. The starting point in this process is the mutual understanding between the industry and the education system, that is, the establishment of a common ground through the construction of a harmonised classification system of skills/competences, qualifications and occupations. Such a classification system creates a basis for a deeper understanding of the labour market needs, allowing the establishment of curricula that effectively link the outcomes of the educational process with the work done in industrial positions (the focus is on the productive instead of the passive knowledge). In this regard, Serbia should use the framework of the EU 2020 initiative “Agenda for New Skills for New Jobs” and, by making the necessary adjustments, it should apply ESCO European standard (European Skills/Competences, Qualifications and Occupations standard – ESCO).

**Policy of International Competitiveness of Serbia**

Serbia’s transition since 2000 has been accompanied by structural changes that have altered the basic characteristics of the Serbian economy by reducing the share of agriculture and industry in favour of the service sector in the structure of both GDP and the added value. The achieved growth was based on the inflow of foreign investments which, by using relatively cheap and skilled labour force, primarily focused on the purchase of the domestic market. The effect of the inflow of foreign capital has not reflected on the increased employment and export growth to the extent necessary to ensure higher economic growth and development.

The GDP level of Serbia in 2010 amounted to USD 36.5 billion (€ 27.6 billion), while in 2008, before the crisis, it was USD 47.7 billion (32.7 billion €). The world GDP today is about USD 63,000 billion, so the Republic of Serbia is ranked in the 82nd place in the world according to the level of the GDP, with the participation of around 0.058% in the world economy. The level of per-capita GDP (GDPpc), expressed in the purchasing power parity, which is considered to be the best basis for comparison of countries, in the Republic of Serbia in 2010, it amounted to about USD 10,500, while in 2008 it totalled over USD 11,000. According to this indicator, Serbia takes about 75th place in the world,
and this level corresponds to the global average. The achieved exports of goods and services of USD 16 billion in 2011 participates in total world exports (USD 12,650 billion) with 0.126%. By the level of competitiveness, expressed by the methodology of the World Economic Forum and the World Bank, in 2011, Serbia was in the 95th place, while in 2008, it took the 85th place. Serbia has modestly improved its competitiveness ranking; the pace of improvement was much slower than the pace achieved by our key competitors so in the meantime, they have outrun us, which has made our ranking drop by a total of 10 places. In order to raise the growth and living standards of the citizens of the Republic of Serbia, it is necessary to achieve a medium-term growth of 4.5 – 5% per year, which, in today’s circumstances, requires substantial funds from foreign sources and more efficient reforms of the business climate and the public sector, in addition to the key education reform. Macroeconomic instability warns us that the actual growth in Serbia is insufficient. Microeconomic weaknesses, particularly those related to the functioning of the rule of law and the quality of business environment, indicate that there is a huge room for improvement in competitiveness. There is a large gap between the level of Serbia according to the GDPpc based on the purchasing power parity (75th place) and the level of competitiveness (95th place), which indicates that the productivity of using the available resources (human, capital, financial) is at a low level, while the current consumption is too high.

Major weaknesses in the competitive position of Serbia are ineffective anti-monopoly policy and lack of local competition, the issue of property rights and the issuance of building permits, poor relations between employers and employees and so on. Data on the educational structure of the population is also very worrying. The highest rate of unemployment is among those who completed the secondary school (especially vocational ones), so there is a question of their competences, and probably of the need for some occupations. At the same time, the number of job profiles that have been redundant for years is not reduced, like medical doctors, where the budget support is still very high, which in the end encourages the “brain drain”, which is a kind of a paradox.

In the theory of competitiveness, there are three phases of a national competitiveness development: factor-driven economy, investment-driven economy and innovation-driven economy. Serbia is in the second phase, where the key levers of development are: improving the quality of human capital, primarily by raising the quality of education, especially higher education; fostering local rivalries; market opening; advanced infrastructure; strong incentives to boost the productivity and cluster formation and activation. The essence of this phase is raising the level of productivity in the production of goods and services. The main characteristic of the competitiveness of Serbia is the fact that it has entered the central phase with the underdeveloped basic (roads, railways, airports, ports, etc.) and administrative infrastructure (rule of law, public administration, fight
against corruption, and the like), which substantially caused its low level of competitiveness in the world. It follows that Serbia must seriously deal with resolving the unfinished business from the previous phase, while, simultaneously, creating conditions for strengthening the competitiveness of those elements where it has a good position, and which, in the future, may be the basis for a transition to a higher, innovation phase of competitiveness. In this process, it is very important to create the best possible conditions for the development of innovations. Strong incentives to these processes should be provided by the state. The institutional environment that fosters a learning culture, creativity, innovation and entrepreneurship are key determinants of knowledge-based economy.

The essence of the new industrial policy, i.e. the re-industrialisation, is completely different from the old industrial policies related to structural and sectoral policies that used to proclaim the winners in advance. That model of the so-called vertical targeting of resources was abandoned in the world more than 20 years ago.

The new industrial policy is associated with the improvement of competitiveness by horizontal measures, i.e. measures that are aimed at all producers. The aim of these measures is to mitigate the imperfections of the market, while avoiding the risks of administrative targeting of resources.

The new industrial policy should not be included in the so-called vertical policy of targeting resources towards specific sub-sectors or companies. Instead, it is necessary to remove any possible market gaps and gaps in the regulatory framework that prevents sustainable development. It is better to encourage consumers to buy cars from “green” programmes than stimulate the producers of “green” cars; the difference is that this strengthens the competitiveness and encourages all producers, not just one, to innovate their products. The government should, therefore, encourage, for example, “green” technologies by introducing the so-called horizontal measures that support research and development in these technologies, and the development of the necessary skills that lead to innovation.

In the analysis of the competitiveness of the Republic of Serbia, the U.S. Agency for International Development – USAID, in addition to the food industry, has established the following 12 economic activities as extremely important for the Serbian economy: tourism, education, clothing industry, construction services, film and production, medical materials and equipment, logistics and transportation, renewable energy, building materials, information and communication technology, auto parts, woodwork and furniture.

The institutional environment that fosters a learning culture, creativity, innovation and entrepreneurship is the key determinant of a knowledge-based economy. Creative knowledge-intensive industries should increasingly assume influence in high technology (e.g. computer programming, engineering, research and economic development, medicine and biotechnology, chemical industry,
energy, university education and research, etc.), but also micro business, projects, art, architecture, crafts, graphic art, computer and industrial design, marketing, fashion, visual and performing arts, film, Internet, music, sports, tourism, healthy food production, cultural heritage, services (finance, health, education, public administration). Creative industry needs people with knowledge, personal ideas and experience, so it can rely on education, research and development.

Serbia currently has no specific measures to encourage the development of creative industries. At one time, it was necessary for the measures for encouraging foreign investments and employment to go in that direction. However, the concept has not been put into practice because it also encourages the employment of low-skilled labour force, and measures to support export are limited. The competition policy, as defined by the Action Plan to strengthen the competitiveness of Serbia in 2010, primarily envisages the improvement of the business climate while investments in infrastructure and education are listed as medium-term priorities. Unfortunately, the majority of measures, even those that do not require new investments, but only a good will to amend the regulations, have not been implemented. The perception of corruption still remains high and is a serious obstacle for investors.

Without a change in the economic structure, in which new knowledge-based industries will gain importance, Serbia, in the long term, would remain in a so-called trap of the medium development without being able to move to a higher stage of development.

**Policy of Social Cohesion and Harmonious Regional Development, Including Decentralisation and Rural Development**

Creating a creative, entrepreneurial and innovative market economy should be accompanied by a concern for the social sphere of the society. Poverty reduction and fight against social exclusion are key components of the social policies of the EU member states, and of course, of the Republic of Serbia. The policy of social inclusion is to remove the causes of poverty, ensuring an adequate level of living standards and creating conditions for active participation of the entire population in the economic, social and cultural life. In the European social model, social cohesion is the means for achieving economic development.

Powerful waves of recession, with unfinished transformation of the Serbian economy and a huge transition delay, have contributed to the increase of social inequality in Serbia. This is pointed out by all key economic and social parameters: the lowest participation rate and the lowest employment rate of working-age population in Europe, a high share of employment in agriculture, one of the highest unemployment rates in Europe, especially the extremely high rates of youth unemployment and long-term unemployment. In the unemployment structure by the level of education, Serbia has, if compared to the EU countries, the highest
rate of the unemployed with secondary education (15.9% in 2011, Bulgaria 9.6%, and so on), while in 2011, the rate of the unemployed with higher education was 3.3% below the EU average (5.7%) and one of the lowest in the region (Croatia, 9.3%, Romania, 5.9%, etc.).

Poverty is strongly associated with the status of the labour market and education level. There is a growing trend of increasing economic dependency quotient: there is one employee per two people who belong to one of the socially vulnerable categories (unemployed, pensioners and young people under 15 years of age), and this ratio has been increasing from year to year:

1) 670,000 poor people (9.2%);
2) 670,000 unemployed people (according to the Labour Force Survey);
3) 120,000 children lack basic necessities for normal life;
4) 1.7% of the highly educated is poor;
5) rural population is twice as vulnerable to poverty than the urban population;
6) Roma population is the most vulnerable population group.

The transition process has reduced the already low level of regional cohesion in Serbia. Economic imbalances at the level of macro-regional units (NUTS-2) is 3:1, the level of regional areas (NUTS-3) is 4:1 (City of Belgrade in relation to Toplička, Jablanica and Pcinjska areas), while at the municipal level is 11 : 1 (City of Novi Sad in relation to Opovo, Lebane or Bojnik).

Table 4: **Level of Regional Cohesion in 2010**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Region (NUTS-2)</th>
<th>Region (NUTS-3)</th>
<th>Municipality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per capita net wages</td>
<td>Belgrade: South and East Serbia 3 : 1</td>
<td>Belgrade: Toplicka 4 : 1</td>
<td>Novi Sad: Opovo 11:1</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>South and East Serbia : Belgrade 3 : 1</td>
<td>Jablanicka : Belgrade 4 : 1</td>
<td>Lebane : Belgrade 5 : 1</td>
</tr>
<tr>
<td>Population decline 1971-2011</td>
<td>(-16,3) : (+36) South and East Serbia : Belgrade</td>
<td>(-32,2) : (+36) Pirot : Belgrade</td>
<td>(-82,8) : (+62) Crna Trava : Novi Sad</td>
</tr>
<tr>
<td>Education level</td>
<td>Belgrade : South and East Serbia 3 : 1</td>
<td>Belgrade: Branicevska 4 : 1</td>
<td>Belgrade : Malo Crnica 12 : 1</td>
</tr>
<tr>
<td>Infrastructure facilities and equipment</td>
<td>Belgrade : Sumadija and West Serbia 2 : 1</td>
<td>Juznobačka : Pčinja 3 : 1</td>
<td>Backa Topola: Bosilegrad 10,4 : 1</td>
</tr>
</tbody>
</table>

Source: Statistical Office, the Business Registers Agency

The scale of regional disparities is further characterised by the following processes:
1) An intensive process of population decline in rural, near-border, underdeveloped and industrially devastated areas. According to the demographic resource index as many as 110 municipalities are demographically devastated: 73 belong to the group of highly devastated, and 37 to the group of already devastated area;

2) Out of the total of 145 municipalities, in as many as 85 of them, people are in the stage of deep demographic aging, while 51 municipalities recorded the deepest stage of demographic aging;

3) The transitional trend of concentration of economic activities in the Danube and Sava zone and in the cities of Belgrade and Novi Sad;

4) According to the legal regulations, underdeveloped area comprises 46 municipalities with more than 813,000 residents, or 11% of the total population.

The problem of regional distortions culminated after the devastating effects of the global recession on the employment and the devastation of the manufacturing industry. In addition to thirty chronically underdeveloped communities, the group of underdeveloped communities have been joined by a new set of fifteen municipalities, due to the so-called new transitional poverty – municipalities that have lost more than 70% of income (“factory towns”) over the past two decades.

Regional economic polarisation is deepening. The concentration of economic activities in the Danube and Sava zone and Belgrade and Novi Sad is all the more intense (more than 2/3 of all economic activities), while, on the other hand, the underdeveloped area (with more than 800,000 inhabitants) is spatially growing.

Given the situation described above, it is necessary to adjust the regional distribution of HEIs, the regional network of vocational secondary schools, and to set up a system of financial assistance to the poor to ensure social inclusion.

**The Process of Regionalisation and Decentralisation**

The Republic of Serbia is now, in 2012, highly centralised, economically closed and infrastructurally weakly-connected with its environment. The established statistical macro-regions (in 2009 and 2010) are non-functional, and economic regionalisation, as a systemic management tool for state resources (natural, cultural, economic, educational, demographic) and as an instrument of inter-regional allocation of resources, is at the very beginning. Therefore, the process of decentralisation and the transfer of responsibilities to new territorial units have been stopped, as well as their approach to the citizens, in order to make more rational decisions. In our country today, there is no intermediate level of development planning (excluding the asymmetric position of the Autonomous Province of Vojvodina).
The process of decentralisation of authority by 2020 could be developed according to the following model: the regulatory function of economic activities belongs to the central level, the private sector is responsible for the production and distribution of public goods and services. Generally, the regulatory and supervisory functions belong to the higher levels (the state and regions), while the execution is left to the lower levels of government organisation (regional and municipal) and the private sector.

A high-quality education system is not possible without addressing the problem of education funding, that is, reducing the gap between the education needs and the financial capacity of the state. Outputs are sought in the market mechanism. Given that education is a public necessity and that market mechanisms for education funding should be activated in all possible segments of the education system (market opportunities for tertiary education funding are undoubtedly higher than the funding of primary and secondary education), a key task is to establish an effective model of education funding. It is necessary to establish performance indicators to monitor the funding of state educational institutions such as the employment of graduates, the time needed to find employment and other indicators that will lead to the harmonisation of study programmes with the labour market needs and promote educational reforms.

The SEDS should take into account regional specificities of Serbia and, in accordance with its capabilities, reform measures in key areas (standardisation, more flexible partial curricula, motivation, individualisation) should involve regional and social dimensions.

**Expected Changes in the Labour Market Demands in Other Sectors in Serbia – Health, Education, Culture, Public Administration, etc.**

Reform of the many social services, health, education, culture and public administration implies decentralisation, depoliticisation, professionalisation, rationalisation and modernisation. In Serbia, it is necessary to establish a regulated system that implies a democratic system, respect for rules and laws. This requirement implies an effective fight against corruption. The comparative analyses indicate that the public administration in Serbia is not too big, but there are some jobs with an excessive number of employees, while others do not have enough experts. The expected demand in the labour market in the public sector will be primarily related to the knowledge required for the European integrations (especially knowledge of EU legislation, technical standards) and modern business skills, such as effective communication (including foreign languages, computer skills, making presentations), human resource management and others.

The use of information technologies, such as electronic management of court cases or electronic conduct of meetings, has enhanced the work of public
administration and increased its productivity, but also imposed the need for additional training of employees.

In addition to attracting new professionals educated in the European law and foreign languages, or those who have mastered the technical areas that are required in the European integrations (eg knowledge of environmental standards), it is necessary to encourage the improvement, train the current employees in the additional knowledge and skills and reward them. Since 2001, in many institutions in Serbia, a huge number of trainings has been delivered, but they still lack systematic organisation and coordination. A new strategy for civil servant training in the Republic of Serbia for the period of 2011 – 2013 (“Official Gazette of RS” No. 56/11), adopted in July 2011, is focused on improving this process and assumes amendments to the Law on Civil Servants (“Official Gazette of RS” No. 79/05, 81/05 – correction, 83/05 – correction, 64/07, 67/07 – correction, 116/08 and 104/09), strengthening Human Resource Management Service and the establishment of a separate, centralised government institution for the organisation of trainings.

A number of employees in social services should be encouraged to gain academic improvement. In Serbia, for example, public administration is studied at the Faculty of Law; Faculty of Economy and Faculty of Political Science, but not as an interdisciplinary course. For studying public administration, it is essential that compulsory programmes include courses in law, economics and management (the latter includes communication skills).

An important segment is the primary health care and prevention because they provide a healthier life, reduce costs of sick leaves, and increase productivity. The health system can support also a higher level of development in terms of providing services outside the country in the field of cosmetic surgery, dentistry or spa tourism. Today, in the health care in Serbia, a gap between the needs of the labour market and the state in education is especially pronounced. For years, there has been a large number of medical students even though the number of specialisations is extremely limited. At the same time, medical schools have not progressed far enough in achieving the Bologna standards of teaching.

A significant component of a society’s progress is the understanding of its own and other cultures, which implies: knowledge about the culture and about the fundamental principles of interaction between different cultures and consciousness to perceive and interpret specific situations; and the skills necessary to make our behaviour appropriate and successful in many different situations. Cultural needs are an integral part of the development of society as they help in building the human personality and active working, and creating new spiritual and material values. These are the need for linguistic expression and communication, cognition, creative, artistic and aesthetic needs. Educational institutions need to be in the first place in the adoption of cultural values. This implies an
improvement in the cognitive and creative potential, promotion of cultural activities in schools (organising events, performances, art workshops and exhibitions, literary evenings and musical performances), organisation of periodic visits to theatres, cinemas, museums, art exhibitions, monuments, literary evenings, fairs, etc. In doing so, a multi-disciplinary approach, which connects the creative work with other objects, is extremely important, so that in the primary school, in art classes, students can paint or sculpt what they learn about history or about a natural phenomenon, and later films are used as a supplement to teaching, with a high level of interactivity.

**Conclusion – Assumptions of Reforms**

The development of the Republic of Serbia will be aimed at the re-industrialisation, and will go in two directions:

Firstly, towards the revitalisation and technological modernisation of the manufacturing industry as the main economic activity for generating high value-added tangible products, including a vast corpus of related services; particularly the food industry (health food and organic production), metal processing industry, consumer goods (furniture industry and wood processing, textile industry and fashion products), agricultural machinery industry, automobile industry; then the energy sector with a focus on the alternative and renewable energy sources (including biomass energy in conjunction with the agriculture and the food industry, wind power, etc.), construction (green architecture and intelligent buildings), wider corpus of automotive and transportation equipment industries with a focus on the environmental component;

Secondly, towards developing a variety of economic activities based on the intensive use of knowledge, and in particular: (a) knowledge-based services – communication, education and research projects, water and air transport, real estate, financial intermediation, insurance and pension funds, health and recreation, cultural and sports activities; creative and cultural industries – advertising, architecture, film, video, development of computer programmes, music, visual and performing arts, publishing, television, design (fashion and communications); (c) the science of living beings – the production of drugs and pharmaceuticals, cosmetics, environmental protection, medical devices and supplies, sports, etc.;

Thirdly, towards the development of industrial information-communication infrastructure and wide application in the management of the production and business processes of industrial companies, including interaction with the academic, research and wider education community.

The Republic of Serbia today does not have the necessary qualification structure that meets the labour market demands, and it is quite certain that the system will not be able to meet the needs of the labour market that will exist in
ten or more years given the above-mentioned two key directions for future development. The expected changes in the structure of demand in the labour market require profound changes in the education system of Serbia. The essence of changes should be in adapting the education system to meet the needs of employers and substantial reduction in the number of those who cannot find jobs on the basis of qualifications and competencies.

Therefore, the key to development of Serbia in the coming decades is in the implementation of the knowledge triangle consisting of education, research and innovation. The core of creating a knowledge-based economy, as a development framework of the Republic of Serbia, lies in the triangle of knowledge which should follow the above mentioned two main development directions of the Republic of Serbia.

The key parameters of improving the competitiveness of Serbia with regard to education are:

1) continually improving the quality of education system and increasing investments in education, but with the systemic changes that will not often change the concept of reform, as has happened since 2001 to date, and with improved funding system that takes into account the outcome;

2) the establishment of an educational system that provides greater flexibility and security in the labour market, based on an thorough general education that provides a possibility to choose an area of additional training;

3) strengthening links between universities, research centres and economy by encouraging cooperation programmes, which implies changes to the regulatory framework with this aim; coordination of education profiles with employers’ needs; adoption of a national qualifications framework in line with the needs of the labour market in Serbia; development of clusters that link private and public sectors and include a group of companies, suppliers, service businesses and related institutions (education and research institutions, institutes, universities, schools).

For the purpose of better determining the needs for appropriate vocational profiles, it is necessary that universities and secondary schools begin to monitor indicators such as the percentage of employees, the percentage of students who continue with other types of studies, the time they need to get jobs, where they are employed (at home or abroad and in which sector), as well as to conduct regular independent surveys of the relevant part of the economy in relation to the qualifications of the labour force produced by a school or a faculty. For this purpose, it is necessary to strengthen institutional cooperation between education institutions and industry:
1) strengthen the career development centres at education institutions (found them where they do not exist);
2) establish councils for the reform of work plans of the educational institutions (especially universities) that will include representatives of the business world;
3) improve the operation of the NES so as it can anticipate the needs of the labour market, just like the EU institution CEDEFOP.

Appendix 2: DEVELOPMENT AND USE OF EDUCATION STATISTICS AND INFORMATION SYSTEM

Keeping statistics helps us with getting to know and following the education and its functioning, getting a good insight into the condition of the system, and whether and how we should intervene to ensure the availability, relevance, efficiency and quality of education. Thus, it significantly affects the ability to draw reliable conclusions and recommendations for education policies.

In Serbia, there are good conditions for keeping valid education statistics: there is a long tradition of collecting, processing and analysing statistical data, developed infrastructure, skilled personnel, technical support and legal regulations. In order to keep education statistics, one can rely on two key systems: system of collection and processing of data on education in the SORS (including DevInfo database), and the system of collection and analysis of data on education in the MoES. These two systems are not compliant and quite often provide different information.

There are numerous disadvantages of the education statistics in Serbia, thus, the opportunities to draw reliable conclusions are limited. There are multiple serious problems in conducting education statistics: from the problem with the indicators, data collection and control of the quality of data collected, through the choice of the methodology applied, inadequate conclusion drawing from the available data, to the lack of coordination between different institutions that collect data in the country and lack of unadjustment with the European modes of conducting education statistics. In terms of education levels, the higher education level is, the less data is provided. We have the most reliable data and analysis on pre-school and primary school education, and the least for higher education.

Solving the problem of education statistics in Serbia includes a number of important measures, among which the following key measures are:

1) Establishment of a unique information system that can provide relevant information on the system as a whole, their regular input into the system, update and control of their quality. For the system to function well, it is necessary to conduct its regular maintenance and administration in all education institutions;
2) *Monitoring generations (age groups)* in moving through education system (instead of the average, for example, calculating completion rates in the primary school compared to the total number of children enrolled in the primary school, regardless of any changes in the drop-out or inflow of children for various reasons). Monitoring generations gives an opportunity to know exactly what is going on in the education system, and the reasons for these events. In addition, it enables a focused education and social actions (for example, actions to prevent poverty and to take proper measures to remedy the situation created);

3) All data **must be disaggregated** to enable more comprehensive analysis of the accessibility, efficiency and quality of education (what education looks like in specific subgroups, for example, in villages, in poor families, for Roma children, children with disabilities and special needs, etc.). What is important is the depth to which data collection is going (level of regions, districts, municipalities or settlements), because national averages can blur and skew the image of education, and cover the problems that occur at the local level;

4) *Adequate number of qualified people* who are in the business of managing education statistics and analyses necessary to the SORS and the MoES. For tracking statistical education indicators, regularity and accuracy are of the utmost importance, therefore, a break in tracking, “extinguishing” of activities and restoring them do great damage to the whole work and substantially increase financial investments;

5) *Defining mutual relationships of institutions* dealing with education statistics and harmonisation of methodology of calculation and monitoring of selected indicators with international standards;

6) Defining the system of statistical indicators that are essential for monitoring the implementation of strategic documents and education policy in the country;

7) Developing a system of indicators in education in a way that allows *international comparisons* (with the EU Eurydice system, with common indicators of UNESCO, OECD and the European Union);

8) *Adjustment of information systems* in education and reference state authorities, which will allow continued monitoring of the quality indicators and efficiency of the system and its individual levels. In addition, it would ensure monitoring of specific aspects, issues through the system, as well as a higher degree of electronic administration in education.
CONTENTS

Prof. Žarko Obradović, PhD
STRATEGY: MODERN KNOWLEDGE-BASED SERBIA ............... 5

PART ONE
CONTEXT, CONCEPT AND OBJECTIVES OF THE STRATEGY
1. The Context of Education Development Strategy in Serbia
   by the Year 2020 .......................................... 11
2. The Concept of SEDS Formulation ........................... 14
3. The Objectives of Educational Development .................... 18

PART TWO
DEVELOPMENT STRATEGY FOR PRE-UNIVERSITY EDUCATION
I. COMMON DEVELOPMENT FRAMEWORK
   FOR PRE-UNIVERSITY EDUCATION ..................... 23
   1. Governance and Management of Educational Institutions .... 24
   2. The Autonomy of the Institution .......................... 26

II. EARLY CHILDHOOD CARE AND PRE-SCHOOL UPBRINGING
    AND EDUCATION ........................................ 27
   1. The Vision of System Development ........................ 28
      The Coverage of Pre-School Children .................. 29
      Quality ............................................. 29
      Efficiency ........................................... 30
      Relevance ............................................ 30
   2. Current Situation in the Pre-School Upbringing and Education 31
      Coverage of Pre-School Children ....................... 31
      Quality ............................................. 32
      Efficiency ........................................... 34
      Relevance ............................................ 34
   3. SWOT Analysis Findings .................................. 35
   4. The Strategy for ECCPUE Development ................... 36
      The Main Challenges and Orientation of the Strategy ....... 36
   5. The Strategy for Achieving the Vision – Policy, Actions and
      Measures ............................................. 36
General Policy ............................................ 36
Pre-School Institutions ........................................ 38
National and Local Level Competences ..................... 39
Local Government ECCPUE Plan ............................. 39
Basic Strategic Measures ..................................... 39
Coverage of Pre-School Children ............................. 39
Quality .................................................. 40
Increasing the Efficiency of the System ..................... 42
Relevance ................................................ 43
7. Necessary Strategic Interactions with Other Systems ...... 44
   Public Communication and Advocacy of Strategic Policies in the Public. 45

III. PRIMARY EDUCATION ........................................ 45
1. The Vision of Primary Education Development ............. 46
2. The Current Situation in the Primary Education System .... 47
   Coverage of Students in the Primary Education System ... 47
   Quality ................................................ 49
   Efficiency .............................................. 55
   Relevance ............................................. 56
3. SWOT Analysis Findings .................................. 56
4. The Primary Education Development Strategy ............. 58
   The Main Challenges and Orientation of the Strategy ...... 58
5. The Strategy for Achieving the Vision – Policy, Actions and Measures ........................................ 59
   Full Coverage of Children in Primary Education .......... 59
   Quality ................................................ 61
   General Policy ........................................ 61
   The Quality of Teaching and Learning Conditions ......... 61
   The Quality of Upbringing and Educational Plans and Programmes (Curricula) ........................... 62
   The Quality of the Teaching and Learning Processes ..... 65
   The Quality of Teachers ................................ 67
   The Quality of Student Educational Achievements .......... 67
   Development of School as the Public Service ............... 68
6. Necessary Changes in the Primary Education Environment .................. 71
7. Strategic Interactions of Primary Education with Other Systems ........ 72

IV. GENERAL AND ARTISTIC SECONDARY EDUCATION ........ 73
1. The Vision of GASE .................................... 73
2. The Current Situation in the GASE System ................ 74
   The Current Situation: Key Features ....................... 74
   GASE Student Coverage ................................ 74
The Quality of Work in GASE ........................................... 76
The Effectiveness and Efficiency of Education in GASE ......... 81
GASE Relevance .................................................. 81

3. SWOT Analysis Findings ........................................... 81

4. GASE Development Strategy ...................................... 83

   The Main Challenges and Orientation of the Strategy ........... 83

5. The Strategy for Achieving the Vision – Policy, Actions and Measures . 83

   GASE Student Coverage ........................................... 83

   The Quality of Work in GASE ...................................... 84

6. Necessary Changes in the GASE Environment ..................... 93

7. Strategic Interactions of GASE with Other Systems .......... 95

V. SECONDARY VOCATIONAL EDUCATION AND TRAINING .......... 97

1. The Vision of the Necessary and Feasible Status in 2020 .......... 97

2. Current Situation in the VET System .......................... 99

   Current Situation – Key Features ................................ 99

3. SWOT Analysis Findings ......................................... 101

   Strengths .......................................................... 101

   Weaknesses ....................................................... 102

   Opportunities ..................................................... 102

   Threats ............................................................ 103

4. The Strategy for Achieving the VET Vision ..................... 103

   The Gap Between the Vision and the Current Situation ....... 103

5. The Strategy for Achieving the Vision ............................ 104

6. The Basic Strategic Measures ...................................... 105

   Establishing the National Qualifications Framework for the
   Lifelong Learning ..................................................... 105

   Standardisation of Examination for the Acquisition of Qualifications 106

   Establishing a System for Certification of Prior Learning/
   Recognition of Non-Formal and Informal Learning ............. 107

   Introducing Master Craftsman Education .......................... 107

   Teacher Training ..................................................... 108

   Development of Education Programmes in Compliance with the
   Qualification Standards ............................................. 109

   Flexible Organisation of Classes .................................. 110

   Harmonising the Network of Vocational Schools and Available
   Educational Programmes (Profiles) with the Needs of the Economy 110

   Reduction of the Dropout Rate in Education .................... 111

   Involving Employers in the Process of VET Definition,
   Development and Implementation ................................. 112

   Establishment of a System for the Monitoring and Evaluation of
   Secondary Vocational Education .................................. 113

259
7. Necessary Changes in the VET System Environment ............. 114
8. Necessary Strategic Interactions with Other Systems ............. 115

PART THREE
HIGHER EDUCATION DEVELOPMENT STRATEGY

Schematic View of the Higher Education System in the Republic of Serbia . 117

I. COMMON FRAMEWORK FOR HIGHER EDUCATION DEVELOPMENT ................................................................. 118
2. The Republic of Serbia in the European Higher Education Area .... 119
3. The Structure and Place of Higher Education in Lifelong Learning ................................................................. 120
4. The Restructuring of Higher Education Institutions ................ 121
5. Higher Education Access ........................................... 122
6. Higher Education Coverage ....................................... 123
7. Quality Assurance and Control ..................................... 123
8. Modernisation of Curricula and New Forms of Teaching .......... 125
9. Research, Innovation and Entrepreneurship Components ........ 126
10. Intra-University and Inter-University Connections and Cooperation .............................................................. 127
11. Modernisation of Governance, Management and Business Administration ............................................................ 128
12. International Openness and Mobility ................................ 129

II. ACADEMIC STUDIES – GENERAL AND MASTER ............. 130
1. The Vision of the Academic Studies Development .................. 130
   Coverage .................................................................... 130
   Efficiency ................................................................. 131
   Quality ................................................................. 131
   Internationalisation and Cooperation ................................ 132
   Student Mobility ...................................................... 132
   Organisation of Academic Studies ................................ 132
   Relevance .............................................................. 133
2. The Current Situation in the Academic Studies System ............ 133
   Quality ................................................................. 133
   Relevance .............................................................. 134
   Efficiency .............................................................. 134
   Coverage .............................................................. 135
   Internationalisation and Cooperation ............................... 138
   Student Mobility ...................................................... 138
   Organisation of Academic Studies ................................ 138
3. SWOT Analysis Findings .................................. 140
   Internal Strengths/Potentials .................................. 140
   Internal Weaknesses. .................................. 140
   Advantages of the Environment/External Conditions .......... 141
   Disadvantages of the Environment/External Difficulties/Risks/Hazards. 141
4. Academic Studies Development Strategy ........................... 141
   The Main Challenges ...................................... 141
   The Main Orientations ..................................... 142
   The Strategy for Achieving the Vision – Policy, Actions and Measures ............................................... 142
5. Necessary Changes in the Academic Studies Environment ......... 147
6. Strategic Interactions of Academic Studies with Other Systems ... 147

III. DOCTORAL STUDIES .................................................. 149
1. The Vision of the Doctoral Studies Development .................. 149
   Coverage ............................................... 149
   Efficiency ............................................. 149
   Quality ............................................... 150
   Research Outcomes ..................................... 150
   The Research Environment .................................. 150
   International Openness ...................................... 151
   Relevance ............................................... 151
2. The Current Situation in the Doctoral Studies System ............ 151
   Coverage and Efficiency ................................... 151
   Research Outcomes ..................................... 152
   The Research Environment .................................. 152
   International Openness ...................................... 153
   Relevance ............................................... 153
   Quality Assurance ........................................ 153
3. SWOT Analysis Findings .................................. 154
   Internal Strengths ........................................ 154
   Internal Weaknesses ....................................... 154
   External Advantages ....................................... 155
   External Disadvantages/Risks/Hazards ......................... 155
4. Doctoral Studies Development Strategy ........................... 155
5. The Strategy for Achieving the Vision – Policy, Actions and Measures ............................................... 155
7. Strategic Interactions of Doctoral Studies with Other Systems ... 161
   General Interactions of Doctoral Studies with Other Systems .... 161
   Doctoral Studies – Economy .................................. 161
   Doctoral Studies – Health ...................................... 162
| Doctoral Studies – Culture | 162 |
| Doctoral Studies – Environmental Protection | 162 |
| Doctoral Studies – Public Administration | 163 |

### IV. VOCATIONAL STUDIES ................................. 163

1. The Vision of the Vocational Studies Development ................. 163  
2. The Current Situation in the Vocational Studies System. ............ 166  
   - Coverage .................................................. 166  
   - Quality ..................................................... 167  
   - Efficiency .................................................. 167  
   - Relevance .................................................. 167  
   - Cooperation .............................................. 168  
   - Social Recognition ....................................... 168  
   - Research Activity ....................................... 169  
   - Teaching Staff .......................................... 169  

3. SWOT Analysis Findings .................................. 170  

4. Vocational Studies Development Strategy ..................... 171  
   - The Main Challenges and Strategy Orientation ...................... 171  
   - The Strategy for Achieving the Vision – Policy, Actions and Measures .................................................. 172  

5. Necessary Changes in the Higher Vocational Education Environment .................................................. 174  

6. Strategic Interactions with Other Systems .................... 175  

### V. TEACHER EDUCATION .................................... 176  

1. The Vision of Teacher Education Development .................. 176  
2. The Current Situation in the Teacher Education System .......... 178  
3. The Current Situation: Key Features ................................ 178  
4. SWOT Analysis Findings .................................. 181  

5. Teacher Education System Development Strategy ............... 182  
   - The Main Challenges and Strategy Orientation ...................... 182  
   - Strategic Policies, Measures and Actions .......................... 183  

6. Necessary Changes in the Teacher Education Environment ...... 188  

7. Strategic Interactions of Teacher Education with Other Systems .... 189  
   - With Schools ............................................. 189  
   - With Cultural Institutions and the Media .......................... 190  

### PART FOUR
PERVADING STRATEGIES OF EDUCATION DEVELOPMENT

I. ADULT EDUCATION ........................................ 191

1. The Vision of the Adult Education Development ................. 191  
   - Coverage .................................................. 191  

262
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>192</td>
</tr>
<tr>
<td>Relevance</td>
<td>192</td>
</tr>
<tr>
<td>Efficiency</td>
<td>192</td>
</tr>
<tr>
<td>System of Recognition of Prior Learning</td>
<td>192</td>
</tr>
<tr>
<td>The Career Guidance and Counselling System</td>
<td>193</td>
</tr>
<tr>
<td>2. The Current Situation in the Adult Education System</td>
<td>193</td>
</tr>
<tr>
<td>Coverage</td>
<td>193</td>
</tr>
<tr>
<td>Quality</td>
<td>194</td>
</tr>
<tr>
<td>Relevance</td>
<td>194</td>
</tr>
<tr>
<td>Efficiency</td>
<td>194</td>
</tr>
<tr>
<td>Recognition of Prior Learning</td>
<td>195</td>
</tr>
<tr>
<td>Adult Career Guidance and Counselling</td>
<td>195</td>
</tr>
<tr>
<td>3. SWOT Analysis Findings</td>
<td>195</td>
</tr>
<tr>
<td>4. Adult Education Subsystem Development Strategy</td>
<td>196</td>
</tr>
<tr>
<td>The Main Challenges and Orientation of the Strategy</td>
<td>197</td>
</tr>
<tr>
<td>The Strategy for Achieving the Vision – Policy, Actions and Measures</td>
<td>197</td>
</tr>
<tr>
<td>Quality</td>
<td>199</td>
</tr>
<tr>
<td>Relevance</td>
<td>200</td>
</tr>
<tr>
<td>Efficiency</td>
<td>201</td>
</tr>
<tr>
<td>Recognition of Prior Learning</td>
<td>202</td>
</tr>
<tr>
<td>Adult Career Guidance and Counselling</td>
<td>203</td>
</tr>
<tr>
<td>5. Necessary Changes in the Environment</td>
<td>204</td>
</tr>
<tr>
<td>6. Strategic Interactions of Adult Education Subsystem with Other</td>
<td>205</td>
</tr>
<tr>
<td>Subsystems</td>
<td></td>
</tr>
<tr>
<td>II. EDUCATION FUNDING</td>
<td>206</td>
</tr>
<tr>
<td>1. The Vision of the Public Funding System</td>
<td>206</td>
</tr>
<tr>
<td>2. Pre-University Education Funding</td>
<td>208</td>
</tr>
<tr>
<td>A Brief Description of the Existing System by Levels of Education</td>
<td>208</td>
</tr>
<tr>
<td>The Main Shortcomings of the Existing System</td>
<td>210</td>
</tr>
<tr>
<td>The New Funding Model</td>
<td>210</td>
</tr>
<tr>
<td>Financing of Current Expenditures</td>
<td>213</td>
</tr>
<tr>
<td>Education Development Funding</td>
<td>214</td>
</tr>
<tr>
<td>Exceptions to the Funding Model by the Number of Students</td>
<td>215</td>
</tr>
<tr>
<td>Requirements for the Implementation of the New Funding Model</td>
<td>215</td>
</tr>
<tr>
<td>3. Higher Education Funding</td>
<td>216</td>
</tr>
<tr>
<td>A Brief Description of the Existing System</td>
<td>216</td>
</tr>
<tr>
<td>Main Shortcomings of the Existing System</td>
<td>217</td>
</tr>
<tr>
<td>Social, Economic, Educational and Other Reasons for Formulating the New Funding Model</td>
<td>218</td>
</tr>
</tbody>
</table>
Model of Improvement of Higher Education Funding at State Universities ............................................. 219

Necessary Conditions for the Implementation of the New Funding Model .......................................................... 224

4. Adult Education Funding ................................................................. 224
5. Financing of Pupil and Student Meals and Accommodation ........ 225
6. Education Funding from Other Sources ........................................ 226

III. EDUCATION AND UPBRINGING OF CERTAIN CATEGORIES

OF STUDENTS ........................................................................ 226
1. The Education and Upbringing of National Minorities ............... 226
2. Education of Gifted and Talented Students ............................... 227
3. Education of People with Disabilities and Special Needs, People with Learning Difficulties and People from Underprivileged Backgrounds .................................................. 230

PART FIVE
IMPLEMENTATION

1. Action Plan ........................................................................... 233
2. Relationship of SEDS with Previously Adopted Strategic Documents .................................................. 233
3. Appendices ............................................................................ 234
4. Publication ............................................................................... 234

Appendix 1: SERBIA 2020+: EDUCATION SYSTEM DEVELOPMENT VISION AND REQUIREMENTS ........................................ 234

Expected Changes in the Labour Market Demands in Europe Originating from the “Europe 2020” Strategy ................................................. 236
The Prediction of Demographic Trends .................................................... 237
The Structure of Future Production System in Serbia and the Types of Technologies that will be Used – Changes in the Structure of Demand in the Labour Market ......................................................... 240
Policy of International Competitiveness of Serbia .......................... 245
Policy of Social Cohesion and Harmonious Regional Development, Including Decentralisation and Rural Development .................. 248
The Process of Regionalisation and Decentralisation ....................... 250
The Expected Changes in the Labour Market Demands in Other Sectors in Serbia – Health, Education, Culture, Public Administration, etc ........ 251
Conclusion – Assumptions of Reforms ........................................... 253

Appendix 2: DEVELOPMENT AND USE OF EDUCATION STATISTICS AND INFORMATION SYSTEM .................................................. 255


1. The Ministry of Education, Science and Technological Development of the
a) Србија – Образовна политика

COBISS.SR–ID 200809484