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STANDARDIZATION OF EDUCATIONAL CONDITIONS – PREREQUISITE OF MORE EFFICIENT EDUCATIONAL SYSTEM

UJEDNAČAVANJE UVJETA OBRAZOVANJA -PREDUVJET UČINKOVITIJE OBRAZOVNOM SUSTAVU

ABSTRACT

The aim of this work is to highlight the changes in the Republic of Croatia, which do not necessarily have to negatively reflect on the quality of the educational system, on the contrary, they may be factors that lead to a more efficient educational system. Educational conditions in the Republic of Croatia are not homogenized. The current changes will impact the equalization of educational conditions. By the conducted research, using scientific methods (analysis and synthesis, inductive and deductive method, descriptive, mathematical methods), we have analyzed the impact of education on the efficiency of the education system in the case of primary education of Brod Posavina County.

In the society of knowledge the approach to the possibilities of acquiring necessary knowledge, skills and competence is essential for the social progress and economical growth of a country. Additional investments in acquiring new acquisitions through education presents the benefit for the individual as well as for the national economy. The education as an activity is at the same time the starter of the development of countries and societies. This applies to the field in which the changes in science and society must be firstly recognised. The education changes its environment but the education itself is subjected to constant changes. The education of every country and Croatia as well, is influenced by low birth-rate resulting in decreased number of students. This can be exemplified in the case of Brodsko-Posavska county region. In the school year 20012/2013 the number of registered children was less for 400 than the previous year. The consequence of this will be closing more and more schools especially in rural areas. It is known that the communities without educational institutions cannot prosper concerning the quality of living. Young people are encouraged to leave the areas where the schools are being closed. The surplus of teaching staff is evident in the employment offices. The low birth-rate has been noticed resulting in smaller number of registered children in the elementary schools. There is a surplus of teachers of great number of subjects especially in lower classes of elementary schools on the labour market. On the one hand there is longer and thorough education of teachers and on the other hand there are not enough job opportunities. In developed countries such situation presents the possibility of the quality of education. However, in Croatia the finance for education are being decreased in the recent years due to the smaller number of students. The Ministry of science, education and sport introduced the project «building of schools» a few years ago, so that all schools in Croatia could function in only one shift, what is in fact quite real and possible, but taking into consideration the existing demographic trends it will be not necessary to build up new school buildings or construct annexes because the number of students has been decreased. The existing schools are spacious enough to function in one shift. We have done the research in elementary schools (33) of Brodsko-Posavske county in order to find out if it is possible, in the conditions of existing changes, to increase the quality of education. There are 1810 employees in elementary schools of Brodsko – Posavska county

and 14.752 students distributed in 771 forms. Data analysis has been done in the equalization of educational conditions giving us the results pointing the increase of efficiency of existing educational system, the improvement of pedagogical standard and better motivation for teachers, what is important for a successful educational system.

Key words: society of knowledge, quality of education, efficiency of educational system, standardization of conditions in education, demographic trends.

SAŽETAK

Cilj ovoga rada je ukazati na promjene u kojima se nalazi Republika Hrvatska, koje se ne moraju nužno negativno odraziti na kvalitetu obrazovnog sustava, dapače, one mogu biti faktori koji vode ka učinkovitijem sustavu obrazovanja. Uvjeti obrazovanja u Republici Hrvatskoj nisu ujednačeni. Postojeće promjene utjecati će na ujednačavanje uvjeta obrazovanja. Provedenim istraživanjem koristeći znanstvene metode (metoda analize i sinteze, induktivna i deduktivna metoda, metoda deskripcije, matematička metoda) analizirali smo utjecaj uvjeta obrazovanja na učinkovitost obrazovnog sustava na primjeru osnovnog školstva Brodsko-posavske županije.

U društvu znanja pristup mogućnostima stjecanja potrebnog znanja, vještina i kompetencija bitan je za društveni napredak i gospodarski rast neke zemlje. Dodatna ulaganja u stjecanja novih znanja kroz obrazovanje predstavlja dobit za pojedinca kao i za nacionalnu ekonomiju. Obrazovanje kao djelatnost je istodobno i pokretač razvoja država i društava, kao i područje u kojem promjene u znanosti i društvu moraju najprije biti prepoznate. Obrazovanje mijenja svoje okružje, ali je i samo podvrgnuto trajnim promjenama. Na školstvo svake države, pa tako i Hrvatske utječe činjenica da se rađa sve manje djece, a time smanjuje broj učenika. Primjera radi na području Brodsko-posavske županije u školskoj 2012./2013. godini upisano je gotovo 400 djece manje nego prethodne školske godine. Posljedica toga će biti zatvaranje sve više škola, osobito u seoskim područjima. Poznato je kako zajednice u kojima nema obrazovnih ustanova stagniraju u kvaliteti života. Sredine u kojima se zatvaraju škole, mlade ljude potiču na odlazak. Na burzama rada pojavljuje se višak nastavnog osoblja. Vidljiv je i pad broja novorođene djece i trend smanjivanja upisanih učenika u osnovnu školu. Na tržištu rada je višak nastavnika većine nastavnih predmeta i područja, a osobito razredne nastave. Na jednoj je strani dulje i temeljitije obrazovanje budućih nastavnika, a na drugoj sve neizglednije zapošljavanje. U razvijenim se državama takva situacija vidi kao prilika za povećanje kvalitete obrazovanja. Međutim, u Hrvatskoj se zbog smanjivanja broja učenika zadnjih godina smanjuju izdvajanja za obrazovanje. Ministarstvo znanosti, obrazovanja i športa je prije nekoliko godina pokrenulo projekt „škologradnje“, kako bi sve hrvatske škole radile u jednoj smjeni, što je zapravo posve realno i dostižno, ali s obzirom na postojeće demografske trendove, neće biti potrebno izgraditi ni dograditi nove školske zgrade jer se iz godine u godinu smanjuje broj učenika. Postojeće škole su dovoljno velike za rad u jednoj smjeni. Dali je u uvjetima postojećih promjena moguće povećati kvalitetu obrazovanja istražili smo u osnovnim školama Brodsko-posavske županije (33 osnovne škole). Osnovne škole na području Brodsko-posavske županije imaju ukupno 1810 djelatnika i 14.752 učenika raspoređena u 771 razredni odjel. Obradom dobivenih podataka u ujednačenim uvjetima obrazovanja dobili smo rezultate koji ukazuju na povećanje učinkovitosti postojećeg obrazovnog sustava, podizanje pedagoškog standarda i bolje motiviranje nastavnika, što je važno za uspješan obrazovni sustav.

Cljučne riječi: društvo znanja, kvaliteta obrazovanja, učinkovitost obrazovanog sustava, ujednačavanje uvjeta obrazovanja, demografski trendovi

1. International researches of the quality of education

The quest for quality in education is the goal of every state. Research in this area contributes to improve the quality of education. Integrating quality education research in school curricula is a

demand placed before the education authorities, with the aim of improving the quality of education and its institution. Empirical research results can greatly contribute to the identification of key determinants that affect the quality of the educational system. Such conducted research of interdependent levels of educational quality, established by the international evaluation of educational achievements, and the growth rate of gross domestic product per capita, suggest an increased rate of growth of national income in an economy that has a better education system. Similarly, the quality of education is a significant part of the impact on economic growth through changes in the rate of technological progress. In the analysis of economic growth there were more significant qualities of education and length of education in the open, rather than in closed economies. From all this we can conclude that institutional quality is dependent upon economic development.

2. The quality of education in Croatia, opportunities and challenges

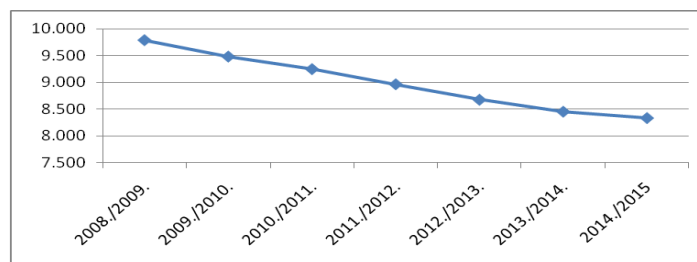
Major challenges such as diminishing population, global and national changes in the economy, focus on applied knowledge, and requirements for rapidly acquired knowledge and skills necessary to a modern labor market. Consequently, there is a need for lifelong learning, requiring a vital reform of the Croatian education system.

The Croatian education system is in the process of aligning with education systems in developed countries, whose economies are based on knowledge. Research indicates a kind of crisis in the Croatian educational system and the need for further reforms. In such circumstances, it is difficult to talk about social and economic progress that is based on an adaptive, accessible and operational educational system without consideration of economic development.

The lag in the development of our education system along with perennial reductions in spending may soon become a limiting factor for long-term, sustainable development of the country. It is necessary as soon as possible to identify the critical factors of quality of education in the Republic of Croatia in order to gain access to the society of knowledge and the acquisition of competencies essential for social progress and economic growth of the country.

In this paper, in the case of primary education, we will present possible causes of the inefficiency of the educational system, but also recommendations to increase the quality of the system.

Graph 1 Graphic display projection-number of elementary school students in Brod-Posavina County in the period 2008 - 2015 (23 elementary schools, without schools in the City of Slavonski Brod)



Source: Author's calculation¹¹⁴

¹¹⁴ The data: Registry Offices in the Brod – Posavina County, primary schools in the County, Police Department of Brod- Posavina County

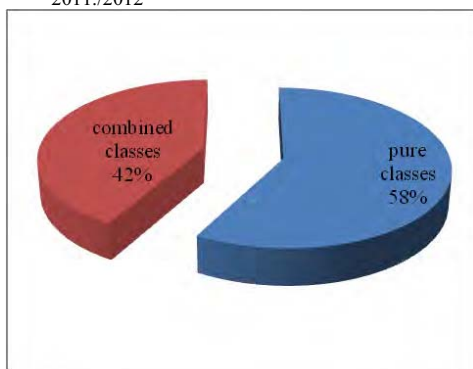
The school system² is a technical term for a system of institutions, their capacity, equipment and human resources, training, who perform a certain extent in the territory. The school network is optimal when the cost-benefit ratio in the market segments most suitable education. This means that the preferred "exit" from the system (number of graduated pupils and the quality of pupils achievement), achieved with the lowest inputs (costs), and that with the fixed costs of maximizing the available effects.

The State Pedagogical Standard for elementary education has been delivered in Croatia to enable the adoption of schools network at the local level. The system is inefficient and unmanageable under its current structure. The level of knowledge created in the existing organization of primary schools in the Republic of Croatia is not sufficient for integration in rapid social and economic changes, so the need for effective change in the planning of the education system is crucial. Creating an optimal school network is the priority in primary institutions because primary school is compulsory and non-selective and the government should do everything in its power to ensure the conditions for complete coverage of children and the successful completion of basic education.

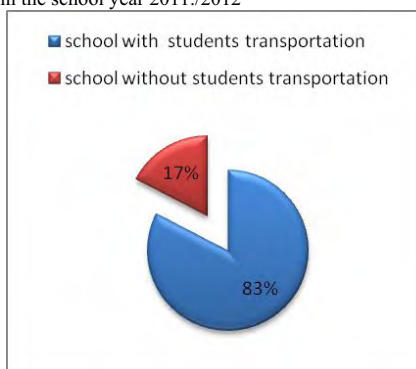
2. Critical quality factor, uneven network distribution of primary education institutions

The school system¹¹⁵ is the main starting point that determines the status and development of primary schools in the Republic of Croatia and so in the Brod – Posavina County. The network of schools in the Republic of Croatia is not optimal. The Brod-Posavina County and the City of Slavonski Brod are the founders of 33 primary schools with 83 regional classes. This is an example of a county that has unequal conditions for the growth and development of children, the large number of branch schools with a small number of children (23 with less than 10 students) with a tendency of further reducing, high training costs, and questionable effectiveness and quality of teaching, particularly in combined classes. In the school year 2012/2013 14.752 students in total attend classes in 676 divisions and 95 mixed divisions (in regional classes).

Graph 2 Structure of regional classes in Brod-Posavina County in the school year 2011./2012



Graph 3 Work organisation –transportation of primary school students in Brod-Posavina County in the school year 2011./2012



Source: Author's calculation

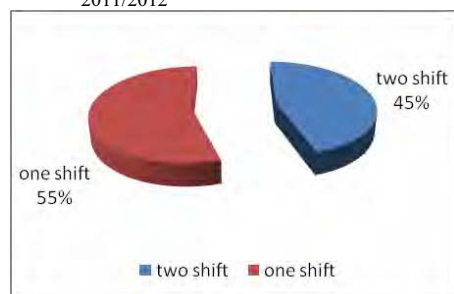
Out of the total number of class divisions, 42% are combined classes (two class divisions, three and four class divisions). Combined classes are present only in the branch class divisions. In this structure, the quality of the educational work is doubtful.

Optimal school network includes scheduling issues and research and school improvement of "external conditions of learning" in schools: school buildings, facilities, equipment and quality of human capital. This is the basis for the directed investment planning into the improving of the learning conditions in order to reduce the differences in educational achievement. While there are large differences in educational standards, the results of external evaluation provoke discontent of those educational environments that are objectively in disadvantaged position.

Law on Education in Primary and Secondary Schools, Article 69, stipulates the obligation of the founders to organize transportation for younger pupils (grades 1-4) having their residence away from school for at least three kilometers, or older pupils, (grades 5-8) having their residence away

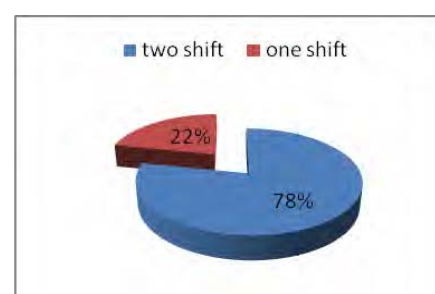
from school for at least five kilometers. In the Brod-Posavina County, transportation is organized for 19 elementary schools. On average it is approximately spent HRK 8,000,000.00 annually for that purpose from decentralized functions of primary education.

Graph 4 Work organization of primary Schools in Brod-Posavina County (main and branch) in school year 2011/2012



Source: Author's calculation

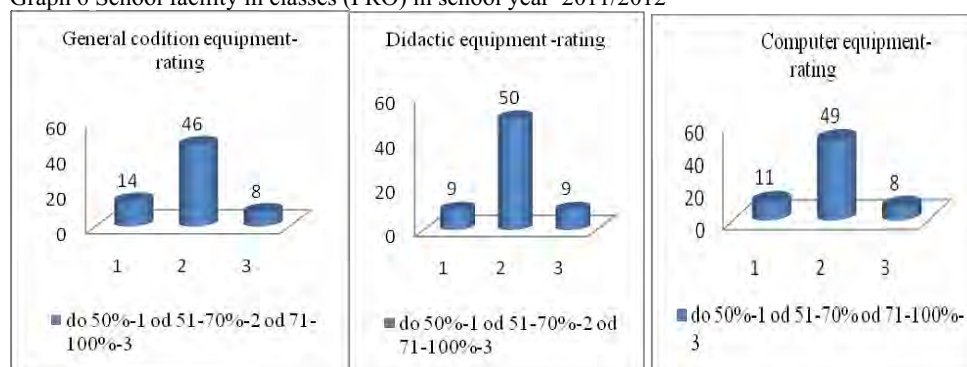
Graph 5 Work organization of main schools in Brod-Posavina County in school year 2011/2012



Source: Author's calculation

By analyzing the structure of the work organization of primary schools in Brod-Posavina County throughout the entire enrolment area of each school (with the branch classes), we can see that a larger number of schools operate in one shift, as many as 55%, but there is actually a branch of the greater number of classes with a small number of students that work in one shift. Out of the total number of main elementary school in the Brod-Posavina County, 78% work in two shifts. The effectiveness of education work in one shift is more significant.

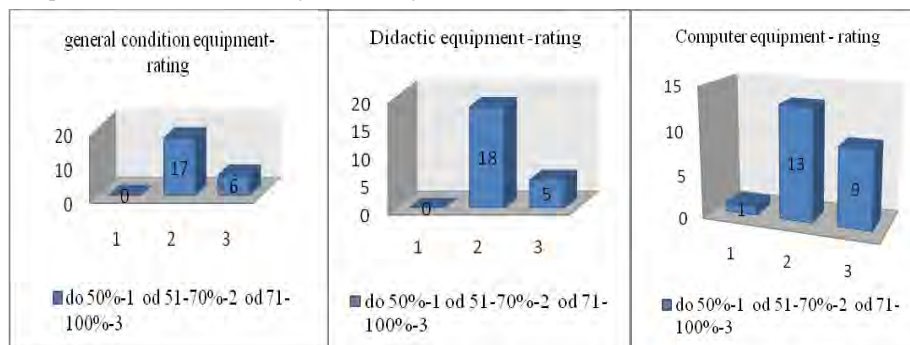
Graph 6 School facility in classes (PRO) in school year 2011/2012



Source: Author's calculation

General condition and didactic equipment for a number of branch classes is in the range of 51-70%, while a small number of branch classrooms are fully equipped with this type of equipment. Computer equipment in branch classes is also in the range of 51-70% , but a significant number of branch classes have minimal IT equipment. The quality of education in the branch schools is low because they have only a basic level of equipment, inadequate quality, lack of computer classrooms, gyms, as well as lacking specialized classrooms and offices.

Graph 7. Main schools facility in school year 2011/2012



Source: Author's calculation

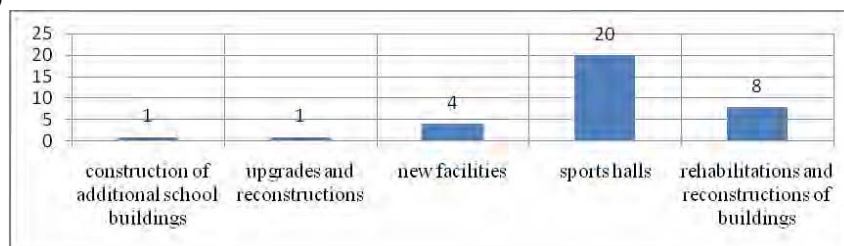
Analyzing equipment in the main schools in the Brod-Posavina County we can say that the general and didactic equipment in a greater number of school buildings is in the range of 51-70%. Resources are more suitable with computer equipment due to the larger number of schools with computer facilities. Equipping main school buildings has greater significance because they are generally more invested; students in their main schools have a better quality of educational work and a higher standard of learning and living.

Equipping schools is a continuous work every year in accordance with the budget of the founders and the needs of schools (decentralized funds approximately 20% of the budgeted funds for the investment in the current year). This depends on intended use of school space and need for the implementation of educational work with students. General equipment (equipment for classrooms, equipment for the school) and didactic equipment are defined by the pedagogical standard.

3. Critical fact of quality, unequal conditions of education

Primary schools are being built and equipped according to State educational standards, standards for the construction and equipping of primary schools premises and all laws, rules and technical regulations in construction and other areas of importance to work and stay at school area. The basic standard of school premises, as a rule, should ensure school work in one shift to the creation of the necessary conditions, and exceptionally in two shifts. Depending on the predictable demographic, economic and urban developments in the enrollment area of the school and the impact of these developments on the school network, the Ministry of Science, Education and Sports issues the approval for a conceptual project for the construction of new schools and the expansion and reconstruction of existing schools to work in one or two shifts. The school building should provide adequate functional organization of space appropriate to contemporary forms of teaching, to meet all sanitary and technical requirements, and basic ecological and aesthetic criteria.

Graph 8 School buildings constructed by 2013. in primary schools Brod-Posavina County (last 15 years)



Source: Author's calculation

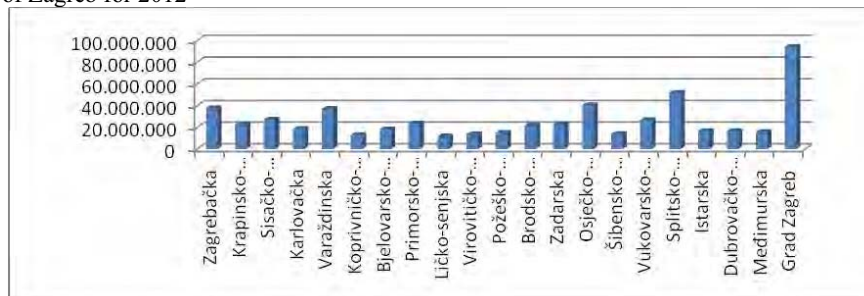
In the Brod-Posavina County we have 20 school sports halls, 19 in the main schools and one in a branch classroom which significantly improves the quality of educational work. In 8 buildings of main schools, the repair and reconstruction have been done, one main school has been expanded, one branch classroom the reconstruction and annex have been completed. Because of inadequate working conditions and deterioration of school buildings four new schools have been built, one main and 3 branch classes. Further investments should continue to establish teaching standards and work in one shift. It is important to stress once again that the designated investments relate to the improvement of educational work in main schools, in the school buildings where we already have achieved higher educational and pedagogical standards, unlike the branch schools.

4. Critical quality factor, reduced investments into education

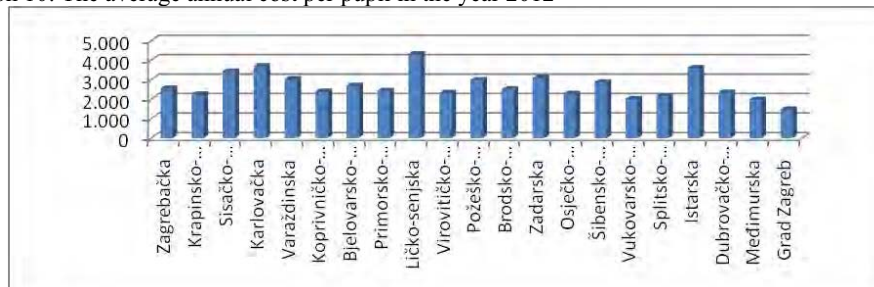
By the Decision on criteria and benchmarks for the financing of a minimum financial standard for primary schools in the Republic of Croatia adopted by the Government each year, the fund is allocated to the founders of primary schools in the Republic of Croatia for material and financial operating expenses and for capital investments. As this is the minimum financial standard that provides basic conditions for the implementation of educational work, the founders of schools (cities and counties), from their original budgets should provide schools a higher standard of work. Those counties and cities that have a higher fiscal capacity of their budgets are able to ensure schools in their area better working conditions.

The Brod-Posavina County has, for years, had one of the lowest fiscal budgets in Croatia and since the beginning of the process of decentralization of primary education (2001), was not able to provide funds for the improvement of schools in its area. Perennial low rate of spending on education, as well as the announcement of the Government's tendency to further reductions in the coming years, will significantly affect the quality of education in the Republic of Croatia in all respects, from investment in human capital, to the material conditions of work.

Graph 9 Calculation of the right balance of material and financial expenditures by counties and the City of Zagreb for 2012



Graph 10: The average annual cost per pupil in the year 2012



Source: The ministry of Science, Education and Sports, author's processing

5. Proposal of possible models for increasing the efficiency in existing conditions

The existing education regulations undoubtedly emphasize the right of every child to education under equal conditions. Proposition of a model for more effective educational system is in adoption of Proposal on network of primary school institutions in Croatia, including in the Brod-Posavina County that will be equitable, so the branch schools, that have a small number of children, close, and pupils from branch schools are transported to the main school buildings.

Operation and maintenance costs of branch schools constituted 85% of all investment in school buildings, and they have been extremely inefficient. We should not invest more in rehabilitation of branch schools each year and provided funds could be used to improve existing conditions of main schools. These branch schools should not be built on because the number of students is smaller each year, and school work could be organized in one shift. Within allocated funds it would be possible to provide more money for the training and retraining of personnel with the aim of enhancing the educational process. Equitable conditions of education are prerequisites for an effective educational system. The goal of creating the optimum school network is to improve the availability and quality at the national level while minimizing the differences between the schools. In the most developed countries, it is irrelevant which primary school the pupil attends as he/she will get equally excellent education. This maximizes human potential for the benefit of each individual and society as a whole.

6. Conclusion

The results of research on the effectiveness of the education system implemented in primary schools of Brod-Posavina County actually identified the critical factors of quality of the education system in the Republic of Croatia. With clear, concise objectives of critical quality factors, it is possible to improve the national quality of education and gradually improve it within existing appropriations, while ensuring investment in human capital. Every national economy and its long-term development mainly depends on it.

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