

# THE QUALITY OF CROATIA'S FORMAL EDUCATION SYSTEM

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## The importance of quality education

A country's education system is one of the main determinants of the competitiveness of its human resources. Highly competitive human resources result from a quality education that is available to a large percentage of the population. There is a significant correlation between an increased level of education in a country and the country's economic growth (Hall, 2002; OECD, 2001; Bassani and Scarpetta, 2001). An additional year of education for a country's population is associated with an average increase in output per capita by four to seven percent (Bassani and Scarpetta, 2001). In developed countries and in transition countries the quality of education is even more important than the quantity of education in determining economic growth (Hanushek and Kimko, 2000).

Thus, one of Croatia's most important issues is ensuring delivery of high-quality education to all Croatians. Accession to the European Union puts further impetus on Croatia to concentrate on its education system, since Croatia will need to develop a highly skilled workforce that can compete directly with other EU countries' workforces. Within the next few years, the Croatian workforce must move quickly to knowledge-based industries and jobs and innovation-driven economic growth, and workers will need to be able to change jobs quickly, deal directly with customers, manage themselves and others, and engage in continuous learning.

## How do we measure the quality of the education system?

It is difficult to assess the quality of Croatia's education system since Croatia has not participated in international learning assessments.<sup>1</sup> Thus we do not know how Croatia's students perform in relation to students in other countries.<sup>2</sup> We have attempted to measure the quality of the education system by:

- Comparing the quality of the Croatian education system with other countries' education systems using quantitative indicators.
- Determining whether it is developing the necessary skills for the current and future needs of the economy. To determine whether the Croatian education system is producing graduates with necessary skills we have conducted a survey of 300 Croatian employers.
- Comparing Croatia's education system with other countries by using qualitative studies, particularly the OECD's Reviews of National Policies for Education.

## Does the Croatian education system meet the needs of employers?

Our survey of employers (Appendix 1) used several methods to determine the needs of Croatian employers and whether current employees met those needs. First human resource managers were asked to define a "competitive employee." The responses emphasized knowledge and education for the task, being capable and hard-working, and taking responsibility. Second, based on a list of skills that we presented to them, Croatian employers chose ethics, loyalty, reading capability, and basic knowledge as skills needed most. Croatian employers believe that the least important skills are knowledge of foreign languages, analytical ability, computer literacy, and teamwork.<sup>3</sup> Croatian employers see the biggest gaps

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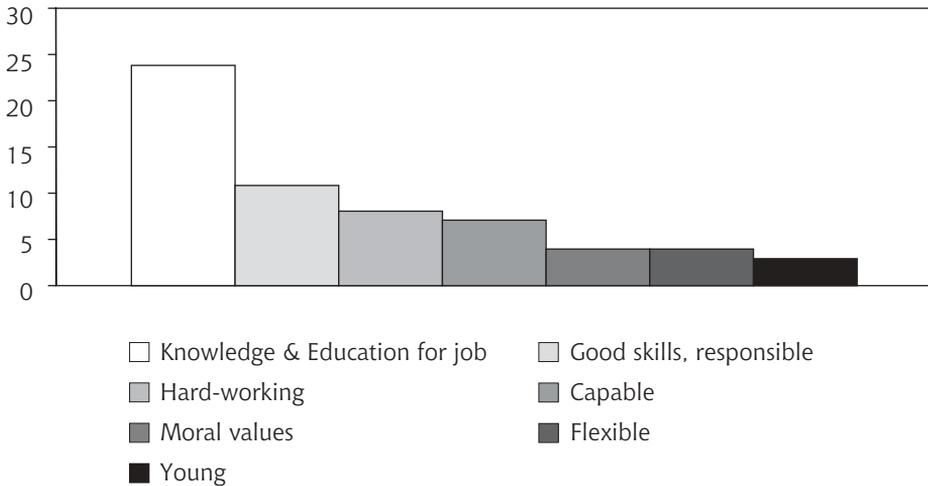
<sup>1</sup> Some of the important international assessments of learning are the Third International Mathematics and Science Study (TIMSS), the OECD Program for International Student Assessment (PISA), and the OECD International Adult Literacy Survey (IALS).

<sup>2</sup> It should be noted that Slovenia, Hungary and Poland performed poorly on PISA and IALS, as did Germany, which has an education system that has a similar design to the Croatian system. This could indicate that Croatia would also perform poorly on these assessments.

<sup>3</sup> It is interesting to note that these skills are thought by economists and human resource experts to be among the most important skills for the 21st century.

between necessary skills and actual skills in the areas of (1) management skills, (2) openness toward other employees, (3) self-initiative/self-motivation, and (4) good people skills (see Survey Table 53 and Graphs 1 to 9).

*Graph 1 A competitive employee*



It appears that the Croatian education system is producing many of the skills that Croatian employers currently need, since employers rate their employees' ethics, loyalty, basic knowledge, and reading capability quite high. The survey indicates that there is a disconnect between the technical skills of workers and the technical skills needed for job performance, which indicates that the education system – including lifelong learning – needs to be better connected with the needs of the labor market.

## **Does the education system fit the needs of the future economy?**

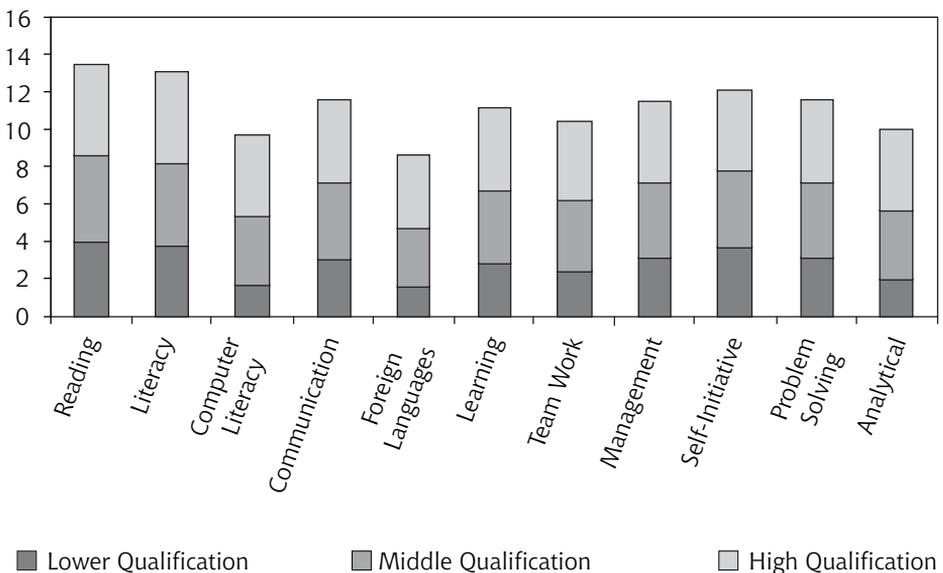
Our Survey of Croatian managers investigated whether Croatian workers have the skills and competencies that several studies have identified as necessary for the knowledge economy. According to Croatian managers, Croatian workers generally have high reading and writing skills. Computer literacy is very low, particularly for lower skilled workers. Communication skills are good, with the exception of knowledge of foreign languages which is quite low. Learning skills are good. Teamwork abili-

ties are somewhat low. Capacity for self-management is also lower than it should be, particularly for middle and high skilled employees. Problem solving skills are good. Analytical skills are somewhat low.

- Skills for the Knowledge Economy
- Reading, writing and arithmetic skills
  - Technical/ICT skills
  - Communication
  - Learning ability
  - Team work
  - Capacity for self-management
  - Problem identifying and solving
  - Analytical

Most of the skills needed for the knowledge economy are primarily developed in the formal education system before work. They can be – and typically are – developed on the job, but a basic, generalized education that imparts these skills is a necessary base for these skills. Thus, Croatia needs a high level of workers who have completed tertiary level education and a general education to provide core competencies that provide the base for lifelong learning and skill upgrading (OECD, 2001:112).

Graph 2 Croatian Employee Skills



## How does the Croatian education system compare with other countries?

We will now attempt to measure the quality of the Croatian education system based on quantitative indicators and qualitative analyses, comparing Croatia with the EU and EU accession countries where it is possible.

### **The Education System**

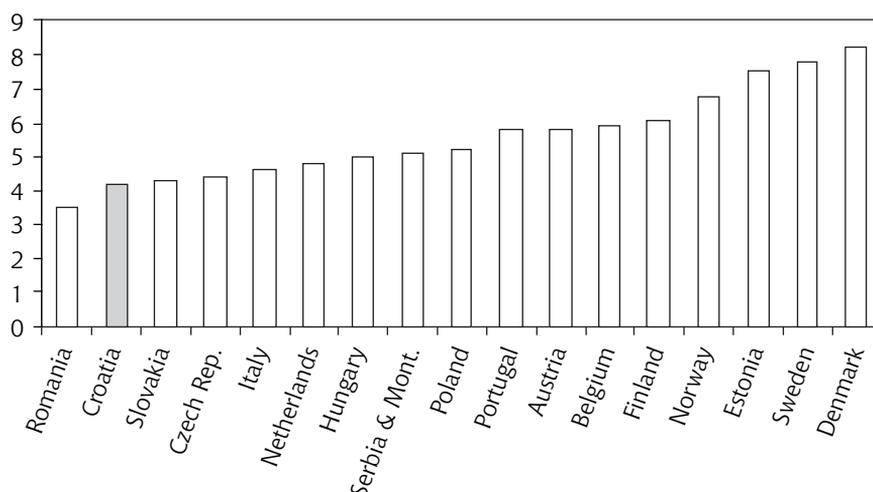
*A) Enrollment rates* – Croatia has relatively low preschool enrollment rates, very high basic education enrollment rates, average rates at the upper secondary level, and relatively high rates for tertiary education. However, the number of years of education that the average Croatian student completes is about four years less than that which the average OECD student completes. In addition, Croatian students' instructional time per year is less than average OECD students' time. For example at grade 4, Croatia has 525 mandatory instructional hours per year, compared to OECD countries that have 50 to 100 percent more instructional hours at grade 4. At grade 8 Croatia has 814 mandatory instructional hours, while the OECD average is 944 hours (Berryman and Drabek, 2002). This of course negatively impacts the skills Croatian students acquire in comparison with students in OECD countries.

*B) Strategy, Governance and Management* – Although education “strategies” have been drafted in Croatia, they have not been implemented, and major reforms have not yet been undertaken at any level. Croatia's situation in this regard is similar to Serbia's and Bulgaria's. By contrast, Slovenia, Czech Republic, and Hungary have implemented wide-ranging reforms based on agreed strategies. Decentralization of the education system has been a priority in several transition countries, although the extent and success of decentralization have varied. Croatia has carried out very little decentralization, and this – along with conflicting authorities, a lack of system-wide focus, and poor management – has resulted in a lack of change, innovation, and accountability. In comparison with other transition countries, Croatia has rigid, hierarchical and opaque governance and management of its education system (OECD, 2001c).

*C) Financing* – The main characteristics of Croatia's education financing are: chronic under-funding, lack of equity and transparency in budget-

ary allocation, unbalanced structure of the education budget in terms of categories of expenditure and source of funds, and lack of synergy (legislative, professional and institutional) for system change. The share of education expenditure of 4% of GDP is well under the European average, and the current level of funding is insufficient to support the reform process. The physical conditions vary widely from school to school but facilities are often inadequate (OECD, 2001c).

Graph 3 Public Expenditure on Education as % of GDP



D) *Primary and Secondary Schools* – The current organization of curriculum around subjects and teacher-dominated learning methods with focus on factual knowledge and passive learning is not conducive to developing high-level technical, technological, and social competencies needed by a competitive economy. There are too many compulsory subjects and not enough optional subjects. Croatian students need teaching methods that give students responsibility for learning, reward students for initiative, focus on alternative ways to analyze issues and solve problems, enable students to learn from mistakes, and use facts and ideas in a meaningful context. In general, Croatian textbooks are inappropriate for the subjects and skills that should be taught and prices are high for average Croatian families. Croatia's pupil/teacher ratio of 1/13 is excellent and indicates that there is no need to hire additional teachers (UNESCO, 2002). Croatia's teacher salaries and status are rather low, although average gross

annual salaries as a percentage of GDP per capita are higher in Croatia than in OECD countries. Opportunities for teacher promotion are small or non-existent, with unclear criteria and inadequate financial incentives. The teacher training colleges are poorly equipped and the teacher training system is merely a series of insufficiently linked and discontinuous trainings. Currently the Ministry of Science, Education and Sport (MoSES) ensures quality control through inspection. There are no national standards or external evaluations or tests; all assessment is school-based and is based on teaching inputs rather than learning outcomes. Thus, the MoSES cannot make valid comparisons between students, schools, regions, or over time (OECD, 2001c). In general, Slovenia and Hungary have made great strides in the difficult transition from the socialist style education system (centralized, rigid and focusing on accumulation of knowledge) to a modern education system (decentralized, flexible and focusing on problem solving), Bulgaria is in the process of making the transition, and Croatia and Serbia are still working on strategy and are doing little implementation (OECD, 1999a; 1999b; 2001c; 2001d; 2002).

*F) Early Childhood Education and Care* – The level of expertise, legal climate, and tradition of pre-school education in Croatia provide solid grounds for raising the quality and scope of early childhood development and care. However, participation is low at less than 30%. Greater public awareness of the importance of early childhood development is needed (OECD, 2001c).

*G) Vocational Education and Training* – Croatia has 3 and 4-year educational programs, special programs for under-qualified workers or students with special needs, and a dual system of schooling with work placement. Vocational schools serve 438 specializations in 31 vocational areas. However, due to technological developments and structural changes in the Croatian economy there is no longer a need for most of the listed specializations. The curriculum is too focused on subject-specific skills, competencies, and attitudes. The programs need a broad theoretical and practical foundation that provides a flexible, adaptable education. Due to the poor image of the vocational education and training system, it has been difficult to recruit teachers and trainers. Vocational education has not adjusted quickly enough to the changes in the economy and to the needs of small and medium sized businesses (OECD, 2001c). Hungary, Czech Republic, and Slovenia have already reformed their vocational education

systems to lengthen and generalize study, increase flexibility, and improve connections between vocational education and labor market demand.

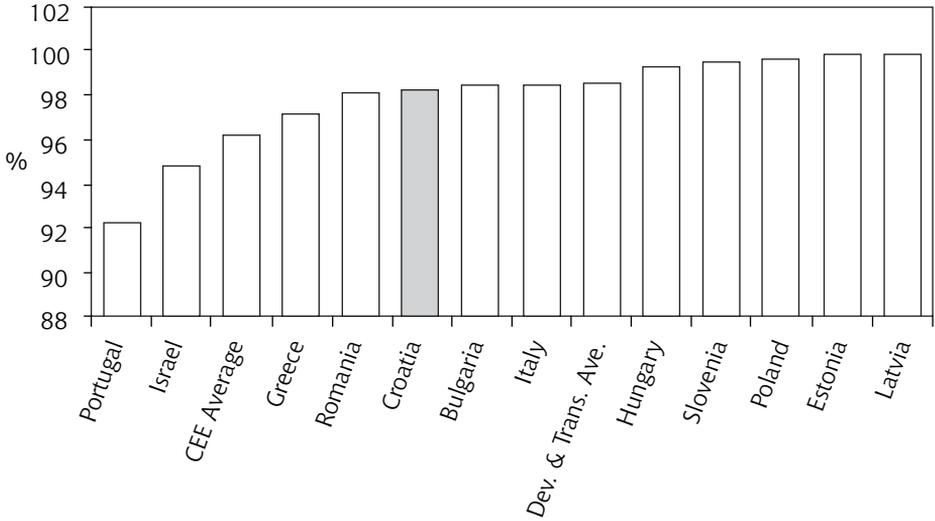
*H) Higher Education* – In Croatia there was little contact on strategy between the Ministry of Science and Technology (MoST – which is responsible for higher education) and the Ministry of Education and Sport (MoES). Higher educational institutions are not really autonomous since funding and staff decisions are made by the MoES. Professors are generally of poor quality, particularly in terms of teaching and testing methods. The universities are not sufficiently in tune with the needs of employers. There are no effective university standards relating to educational processes and learning outcomes (OECD, 2001c). Since each of Croatia's four universities is a collection of separately budgeted faculties, the university's rector and top management have little ability to modernize the university, e.g. merging, eliminating, adding, diminishing, or expanding faculties, and there is little collaboration between faculties and no opportunities for students to engage in interdisciplinary studies (Berryman and Drabek, 2002). Slovenia, Hungary, and Czech Republic face similar challenges.

*I) Lifelong Learning* – Workers at all levels in the 21<sup>st</sup> Century need to be lifelong learners, adapting continuously to changed opportunities, work practices, business models, technology, management. Croatians' participation in lifelong learning is quite low, particularly in comparison to EU countries. This indicates that workers are not keeping pace with technological advancement and other changes in the workplace.

### Education System Outputs

A) *Adult literacy rate* – The Croatian literacy rate is reasonable.<sup>5</sup>

Graph 4 *Adult literacy rates*



Note: CEE-average for Central and Eastern European Countries  
 Source: UNESCO/OECD, 2002

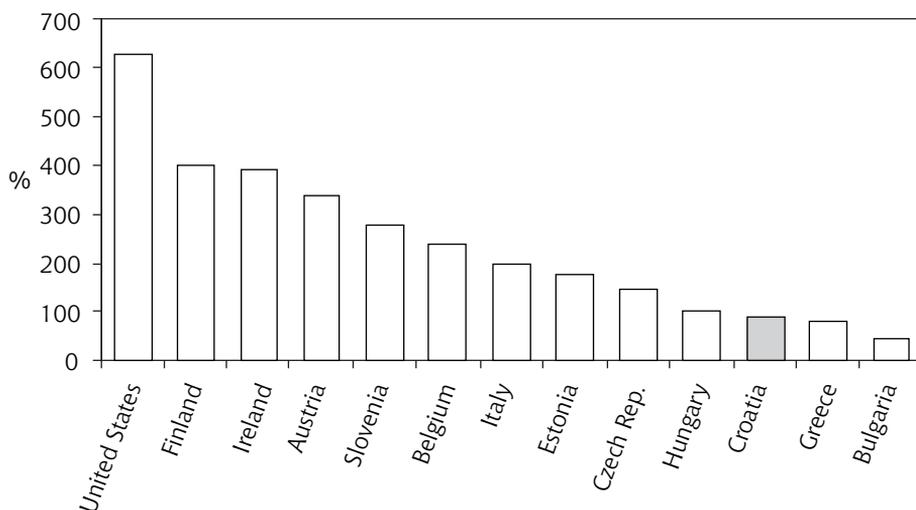
B) *Education levels* – Croatia trails EU countries in the percentage of workers who have completed tertiary education. It has a higher percentage of workers who have completed some type of secondary education. But among Croatian workers, a much higher amount completed only the basic vocational program of one to three years in comparison to their counterparts in OECD countries (55% compared to only 9% in the OECD countries (Berryman and Drabek, 2002). A basic vocational program does not provide the competencies required in the modern workplace and it appears that the Croatian education system is not providing enough knowledge workers (ILO, 2003).

C) *Use of Technology* – Due to a lack of survey data on the use of technology by Croatian workers, we use a rather crude measurement of the use of technology. Croatia is behind other European countries in the use of

<sup>5</sup> UNESCO/OECD World Education Indicators.

PCs, the dominant technology in the workplace, which indicates that the education system is not emphasizing technology (World Bank, 2002).

Graph 5 Personal Computers per 1,000 People (2001)



### Recommendations for improvement

- The MoSES must immediately work with the stakeholders (school and university administrators, teachers, professors, students, social partners) to develop a vision, strategy, and tangible action plan for reform of the education system.
- The education system should be changed from supply-driven to demand-driven, i.e. the system should provide learning alternatives that students (of all ages) can choose from, with increasing responsibility by students as they get older.
- Management of the education system should be decentralized, i.e. budgeting, personnel, curriculum, should be done by the schools and local governments and universities instead of the Ministries.
- The MoSES – working with the stakeholders – should focus on implementation of reform strategies. The Ministries should improve their management by focusing on increasing their abilities to implement strategies and action plans.
- Schools and universities should be accountable for results. Thus, the Ministry should set standards and hold schools accountable for learn-

ing outcomes, e.g. reading comprehension, ICT skills, etc., and give the schools and universities freedom to use their own methods to produce them. This will require nationally written, administered, and graded learning assessments.

- Curricula in schools should be reformed to increase links with the needs of the economy and to reduce compulsory subjects and increase optional subjects, begin specialization in the vocational track later, broaden specializations, emphasize problem solving, develop teamwork, increase the ability to learn, develop students' ability to manage themselves and others, build communication and technical/ICT skills, and reduce the emphasis on memorization of facts. The curriculum reform should be accompanied by new textbooks, teacher guides, and learning materials, changes in teaching methods, and new measures of learning outcomes.
- Instructional pedagogy in schools and universities should be restructured so that teaching methods give students responsibility for learning, reward students for initiative, focus on alternative ways to analyze issues and solve problems, and use facts and ideas in a meaningful context.
- In conjunction with radical reforms of curriculum, materials, and pedagogy, Croatia will need to intensively train existing and new teachers including imparting new teaching methods, use of teaching materials, and testing methodology. Such training should be mandatory for teachers.
- Croatia should participate in international learning assessments, including PISA.
- Curricula in universities should also be reformed to increase links with the needs of the economy, and dialogue and cooperation between the private sector and universities should be greatly increased.
- Universities' autonomy and powers should increase (vis-a-vis the MoSES and faculties), including having single university-wide budgets and university administration's freedom to select faculty structure, management staff, faculty members, support staff, and students.
- Vocational education and training should be more generalized and should focus on the competencies needed for the labor market. Occupation-specific training should be restricted to the tertiary level.
- Increase participation in pre-school education by informing the public of the importance of early childhood education.

- Trade unions and employers should be actively involved in education reform, especially in the area of vocational education, and improving the education system should be a top priority for the unions.
- The Croatian people should be informed of the need for each Croatian to constantly upgrade his or her skills. The Croatian Government, business community, and trade unions should jointly develop and deliver a public information campaign exhorting Croatians to focus on education.

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