ICT at Elementary and Secondary Schools in Bosnia and Herzegovina

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Objective

- ➢ ICT Survey statistic in Elementary School
- ➢ ICT Survey statistic in Secondary School
- ➢ ICT in B&H
- ➢ Project realization in B&H
- ➢ Content development

B&H's organizational structure

- ➢ B&H consists of three organizational units:
  - ❖ The Entity of Republic of Srpska
  - ❖ The Federation of Bosnia and Herzegovina
  - ❖ The Brčko District
- ➢ Education in B&H is decentralized

- ➢ Map of Bosnia and Herzegovina

Legal and Institutional Framework

- **The Entity of Republic of Srpska**
  - Education is covered by Entity level legislation
  - The Ministry of Education and Culture is responsible for monitoring, planning and executing policy.
- **The Entity of Federation of B&H**
  - All educational responsibilities are at cantonal level (10 cantons)
    - ✓ the cantonal ministries of education
    - ✓ the Federal Ministry of Education and Science at the entity level acts mainly as a coordinating body for education policy among the cantonal institutions.
  - Each of the ten cantons has its own law
- **The Brčko District**
  - a separate organizational unit in B&H, has its own laws covering each of the four levels of education.

B&H's levels of education

- Each organizational unit has four levels of education
  - Preschool education
  - Primary education
  - Secondary education (Vocational, General)
  - Tertiary education (Higher, College, High)
- Separate laws for each of the four levels.

School structure in RS
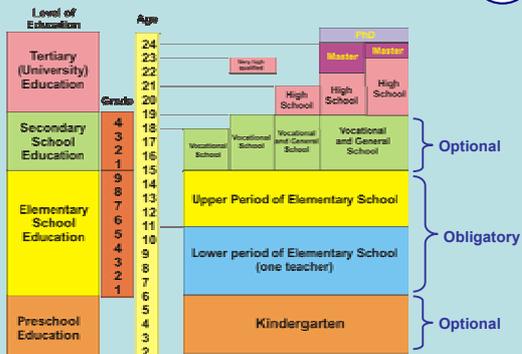
Elementary Schools in Republic of Srpska

Survey statistic
(As an January 2007)

The Elementary Schools and Teachers

- Number of Elementary Schools in Republic of Srpska:
  - 202 (in total)
  - included in the research – 194
- Primary education in B&H is based on the principle of nine years of compulsory education divided into two periods within the same institution.
- In primary education, ICT is taught from 6th to 9th grade.
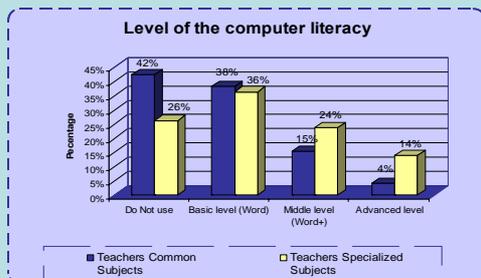- Mostly it is studied one or two classes per week

The number of		Computer literate		Percentage	
Teacher	Students	Teacher	Students	Teacher	Students
8.015	119.123	3.840	51.413	48%	43%

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Level of the teachers computer literacy

- Most of the teachers use only windows and word

Level of the computer literacy

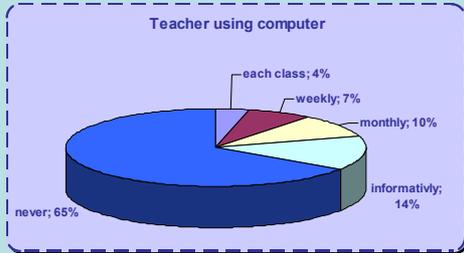Teachers Common Subjects
Teachers Specialized Subjects

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Computer usage in the classroom

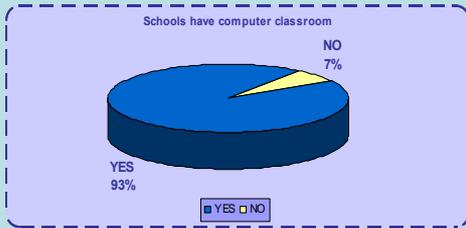➢ Teachers are not trained to apply ICTs in the process of education

Teacher using computer

- each class; 4%
- weekly; 7%
- monthly; 10%
- informativly; 14%
- never; 65%

Statistic of the computer classroom

➢ Average of the computers in computer classroom is 11 (usually 10 or 12,)

Schools have computer classroom

- NO 7%
- YES 93%

☐ YES ☐ NO

➢Have LAN network 49%   ➡   23% of them have Ethernet UTP.

Statistic of the computer classroom

➢ More than 50% of computers belong to the old generation
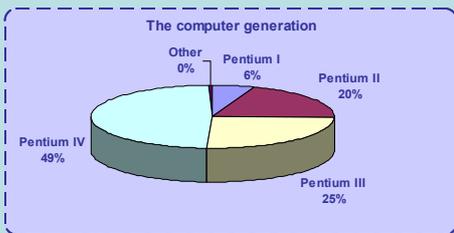
The computer generation

- Other 0%
- Pentium I 6%
- Pentium II 20%
- Pentium III 25%
- Pentium IV 49%

Statistic of the computer classroom

➢ More than 50% of computers use old operative systems
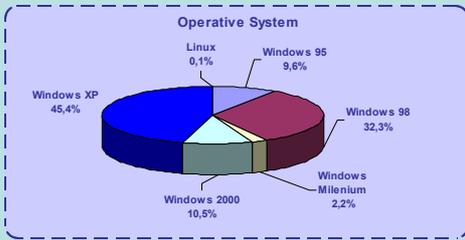
Operative System

Linux 0,1%
Windows 95 9,6%
Windows XP 45,4%
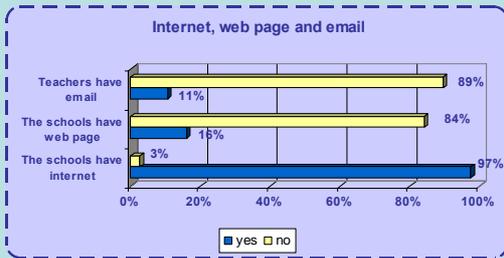Windows 98 32,3%
Windows Milenium 2,2%
Windows 2000 10,5%

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Internet, web page and email

➢ Only 11% of the teachers use email

Internet, web page and email

Teachers have email — 89% / 11%
The schools have web page — 84% / 16%
The schools have internet — 3% / 97%

0% 20% 40% 60% 80% 100%

■ yes □ no

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Secondary Schools in Republic of Srpska

Survey statistic
(As an January 2007)

The Secondary Schools and Teachers

- Number of Secondary Schools in Republic of Srpska:
  - 86 (in total)
  - included in the research – 83
- Secondary education in B&H is based on the principle of three or four years.
- It is not obligatory.
- In secondary education, ICT is taught in 1st and 2nd grade or through all grades, depending on the school.
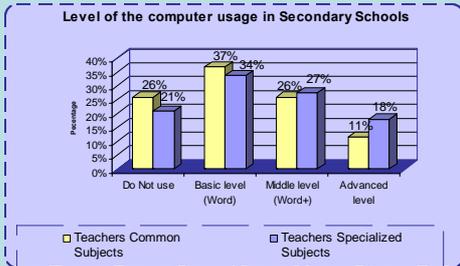- It is taught two or up to four classes per week.

The number of		Computer literate		Percentage	
Teacher	Students	Teacher	Students	Teacher	Students
3.131	48.830	1.918	42.040	61%	86%

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Level of Teachers computer literacy

- Most of the teachers use only windows and word

Level of the computer usage in Secondary Schools

Teachers Common Subjects — Do Not use 26%, Basic level (Word) 37%, Middle level (Word+) 26%, Advanced level 11%

Teachers Specialized Subjects — Do Not use 21%, Basic level (Word) 34%, Middle level (Word+) 27%, Advanced level 18%
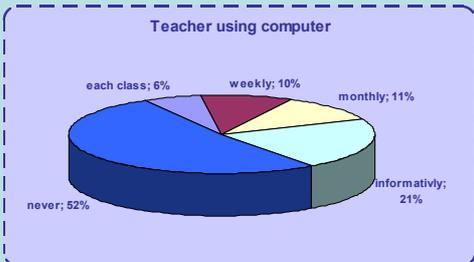
SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Computer usage in the classroom

- Teachers are not trained to apply ICTs in the process of education

Teacher using computer

- each class; 6%
- weekly; 10%
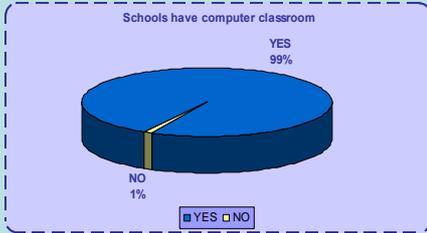- monthly; 11%
- informativly; 21%
- never; 52%

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Statistic of the computer classroom

➢ Average of the computers in computer classroom is 11 (usually 12 or 15)
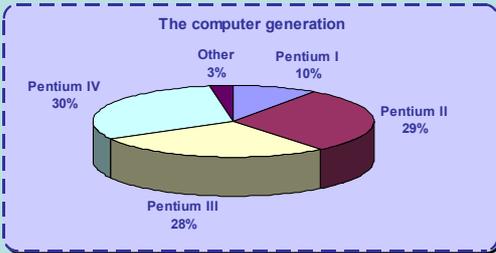
Schools have computer classroom

YES
99%

NO
1%

■ YES ▢ NO

➢ Have LAN network 25% ➡ 22% of them have Ethernet UTP.

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Statistic of the computer classroom

➢ Almost 70% of computers belong to the old generation

The computer generation

Other
3%

Pentium I
10%

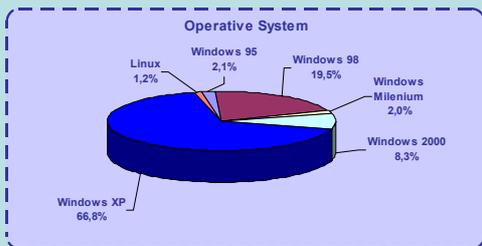Pentium IV
30%

Pentium II
29%

Pentium III
28%

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Statistic of the computer classroom

➢ More than 30% of computers use old operative systems

Operative System

Linux
1,2%

Windows 95
2,1%

Windows 98
19,5%

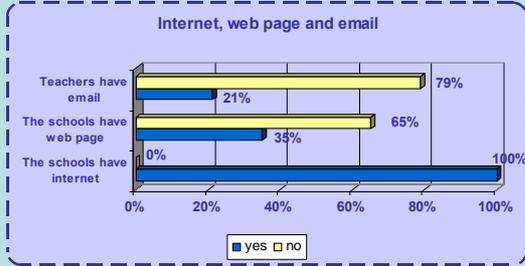Windows Milenium
2,0%

Windows 2000
8,3%

Windows XP
66,8%

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

Internet, web page and email

> Only 21% of the teachers use email

Internet, web page and email

	yes	no
Teachers have email	21%	79%
The schools have web page	35%	65%
The schools have internet	100%	0%

SOURCE: Data from the Ministry of Education and Culture (As of January, 2007)

ICT in education in B&H

> Information and communication technologies (ICT), properly used, contribute to the quality of education and training and move to a knowledge-based society.

> The current education system in B&H still is not good service for the development of information society.

> It doesn't provide enough opportunity to educate the young people in the area of information technologies and their use in education.

ICT in education in B&H

> B&H does not have necessary investment capacities and still lacks far behind in the use of the new information and communication technologies.

> The key problem is that the state, entity and cantonal budgets don't include or offer very limited funds for development of ICT in schools, as well as ICT use in scientific and research activities.

ICT in education in B&H

- There are no government subsidies for broadband internet use in the curricula of educational institutions!
- Teachers are not trained to apply ICTs in the process of education!
- The legislation for establishment of national Agency is blocked and paralyzed.
- There is no academic network national levels.

Future Activities

- Promotion of digital literacy among teachers
- Training the trainers
- Connecting all education and research institutions to the Internet
- Standardization of ICT in education and reseach institutions
- Standardization of IT syllabus for secondary schools
- Development of online courses

Accomplishments

From September 2006

Achievements

- At the beginning of the school year developed PowerPoint contents were used online
  - 90 students of the third grade attended to this classes
    - Lessons – problem with internet connection (512kb/s)
    - quizz
- Promotion of digital literacy among teachers and students
  - Seminar at University of Banja Luka
- Made contact with Pedagogical Institute
- Made contact with Ministry of Education and Culture of Republic of Srpska

Content development

- New content for subject I teach were developed
  - Electronics WorkBench
  - PSpice
  - Microsoft Access
- Tests and quizzes for subject I teach were developed
  - Microsoft Access
  - Microsoft Word
- Exercise for all above mentioned software
- Use developed materials offline

Conclusion

- Slow and unreliable internet connection limits the usage of currently developed e-learning contents.
- Further development of contacts with the ministry and pedagogical institute is needed to direct the project into spreading the environment and community of ICT trained teachers.

Thank you for your attention!