LEARNING THROUGH TASKS
Information literacy of primary school students in Montenegro

Masters thesis

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Abstract:

This research investigated the extent to which students acquire and teachers promote information literacy skills and school librarians’ effort for implementation of information literacy programs. Using concepts from information literacy theory, the researcher shows ways how library practice would change if librarians redefined themselves as literacy educators. Also, teachers have to learn how to integrate information literacy framework into their teaching, because that teachers could to teach information literacy must be information literate themselves and must have space and technical possibilities for carrying out the process.

The research shows at what levels of information literacy have primary school students and, through the presentation of their project work, shows way for evaluation of students’ information literacy skills according Standards for the 21st Century Learner (American Association of School Librarians [AASL], 2007) and on the basis of Big 6 model (Eisenberg, M. and Berkovitz, R., 1990).

The study included 20 teachers, two school librarians and 115 students of 7th grade classes (12 ages) from two elementary schools in Montenegro. A combined research methods are used to obtain a more complete picture of teaching / learning information literacy process. Results show that it is necessary, in our schools, to apply more active learning methods of interactive learning which would help students to develop information literacy and practical knowledge and skills for lifelong learning.
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1. INTRODUCTION

1.1. MY PROFESSIONAL EXPERIENCE AND INFORMATION LITERACY

Development of information society is caused by the development of information technology and depends on the possibilities to access and use information. A need for knowledge and education makes the information literacy necessary for everybody. Lifelong learning is a concept of lifelong literacy, need for learning and education system does not fulfill educational needs. Providing opportunities for lifelong learning and the development of the education system are widely accepted in the world.

I decided to investigate about information literacy of seventh grade students for several reasons. First, I started my professional career as a teacher of Serbian language and literature and I think that the teaching of mother tongue and literature is a paradigmatic model for teaching information literacy. I believe that the most important goal which the elementary school need accomplish is students’ mastering the techniques of reading and writing skills and information literacy. It is important that the student understands, reads and writes different types of texts in which the emphasis should be placed on the inartistic texts taken from various sources. The student should have the ability of concluding, selecting and assessing, the ability to choose a writing style that fits the desired objectives, and the ability to evaluate the convenience of their skills and perfecting them. It is the fact that new technologies typically use a combination of images, text and sound, and the definition of literacy includes the ability to create interpretations and critical thinking about the many verbal and visual symbols in everyday life that we receive through magazines, TV, radio, Internet...

The meaning and sense of information literacy is, in general, to investigate and decode text, and the ability of asking the right questions about what is seen and read. Teaching literature takes critical thinking skills through reading, analysis and assessment of artistic and inartistic articles or fiction and nonfiction books, in that way information literacy should help students to become critical and educated in terms of finding, selecting, evaluating and using information.

The ultimate goal for students is to gain an automatic skill, in contact with the information, to raises questions: Who wrote the information? What research techniques were used to attract my attention? To whom is this information intended? Why is it sent?
However, the development of these skills needs to support teachers of other teaching subjects, because they are responsible for the creation and development of one of the most important skills: learning to learn and be information literate. In reformed nine-year primary school, which is divided into three cycles, these programs start from earliest grades, however the subject teaching begins in seventh grade, which is in the beginning of third cycle, and concerning that the objectivities of development of teaching information literacy are more complex.

Another reason for choosing this research topic is it which I comprehend, through my mentoring of librarians who are trained for the professional librarian exam, which takes place in the National Library of Montenegro, (because in Montenegro, there is no Faculty of Librarianship) that the librarians who work in schools are outside of the "current events". I think that education reform can not be done without transformation of the school libraries in information and media centers and without permanently professional development of librarians.

Monitoring of the progress of library service users, developing their habits for evaluating the library holdings and collections, and another various types of work, require new role of libraries and librarians. During his/her education, every student should master the skills in using information provided by the library, because library opens the door to the world of knowledge. This is an area in which pedagogy can find more interesting forms of work.

1.2. INFORMATION LITERACY IN CURRICULUM

Reform of the educational system in Montenegro started in 2005 and it adopted a modified curriculum that are modernized and relieved of unnecessary facts, comparing traditional curriculum. Reform provides an active approach to teaching and learning in order to "school of memory" becomes a "school of thought.” The Curriculum for nine-year primary school (Department of Education, 2005) instead of a list of lessons addresses the objectives of teaching/learning and knowledge and skills that students should acquire. In curriculum referred also activities of students in class that these goals can be achieve. In new programs student is at the center of the education system. The curriculum for primary schools contains a framework for the development of information literacy students, and the view that teachers are key persons who introduce students to the information world.
This objectives, which relate to information literacy in curriculum, are, for example: students use different information sources for obtaining the data, students learn about different ways of searching for scientific information; students present ideas and results using diagrams, graphics and tables, students from various sources, request necessary data, enter them into the thought pattern / work concept; students know how to enumerate and distinguish basic research methods in scientific disciplines, and their application... Key word in each outcome is an action verb: explain, analyze, evaluate, compare, sort, grouping, classifying, summarize, distinguish between cause and effect, and separated the important and unimportant information... etc.

These cognitive processes indicate meaningful processing and reorganization of content by students and mean learning with understanding. As recomended in Curriculum, it is especially important to create conditions and atmosphere in the classroom that encourage students to ask questions in their dilemmas from teachers or members of the peer team: Who? What? Why? How? When? Where? Asking questions, especially when they are not formal, should be understood not only as the need for information and dialogue, but also as a form of thought processes that reflect the achievement of deeper insight - content issues can show to the teacher how many students are curious, in what direction to move their interests, what is their insight of the problem, how to recognize when they need information. The teacher should always send to students' clear and encouraging message about the value of asking questions and teachers, with their teaching model in the form of the questions, offer for students a model of learning and encouragement developing these intellectual skills (Department of Education, 2005)

It is necessary for the teaching and learning to apply participatory techniques, methods of active learning and teaching, interactive learning - which will help students to develop and acquire critical thinking skills, responsibility, support, cooperation, tolerance.... Some specific techniques that are used in such approaches are: working in small groups, simulations, role playing, student presentations, case studies, essays, the debate - "pro and contra", the using of literature and media, student projects, guest time, terrain work, ...etc.

Regardless of the wide range of methods and techniques in teaching, it is important to note that each specific issue in the teaching subjects requires that the teacher should carefully elaborate scenario of teaching hours. It is important for several reasons: a clear definition of objectives, effective planning and control of time, providing the necessary materials to stimulate students' activities, individualized approach, and needed the intervention of teachers.
The teacher needs to rely on material that students continuously collected, so it is recommended that the material is stored and exhibited by teacher in a systematic way, in a prominent place in the classroom, because it is further motivational tool for students, and it is especially useful for the systematization of students’ acquired knowledge. In geography, for example, emphasizes is on the importance of terrain (cross-country, outdoor) work and excursions, visits to various specialized institutions, when students have the opportunity to connect theory with practice, and exersize application of simple research methods, for example, observation.

Students need to know how the lessons that they encounter in school connect to their own lives and the world around them before they can be motivated to construct their own understanding. It is required that, in many teaching subjects, ecological notes should be present as often as possible. It is recommended to point out the interdependence of man and nature, and the necessity of responsible use of natural resources. Considering the disruption of balance in the natural environment, it is necessary to insist on the prevention and protection. It is one common topic in numerous teaching hours, and in numerous teaching subjects. At one teaching hours more goals can be realized, as well as one goal can be realized through several hours or more in the curriculum of different subjects.

All objectives specified in the curriculum for nine-year primary school in Montenegro is in function of continuous monitoring of the teaching, and students’ products. However, the phrase "information literacy" in school curricula does not exist. Instead, it is given the notion of informatics literacy, which includes computer skills. This linguistic or semantic "misunderstanding" is the first problem in the introduction program for teaching / learning of information literacy in our schools. Informatics, as a mandatory teaching program was introduced in Montenerin schools, where students in the sixth and seventh grade are learning the concepts of computers and basic software programs and repeat what they already know and what they learned at home in a short time to work on their computers.

The particular significance for the application of teaching is computer technology, in curriculum it is recommended using a computer with an LCD projector and the availability of computer programs for viewing and processing of teaching materials. However, attempts for computerization and modernization of education in our schools run slowly. Space and technical equipment of schools is needed for implementation information literacy programs. In addition, the web sites of elementary schools (www. first Montenegrin education portal)
do not contain meaningful documents and educational facilities. On the contrary, many schools did not enter any new information from setting up of their sites a few years ago.

Information literacy is viewed in national curriculum as “something” what is meant by itself. In curriculum recomedation it is said that teacher should plan their work, but are not said how: which references, which teaching materials… Also, it is not said that the teacher has to cooperate with the school librarian in joint planning of lessons. Teachers are left to themselves that, according to their creativity, experience, education and professional development, realize their teaching programs.

The standards of knowledge in the curriculum may apply only to content, and not how students acquire knowledge. In the curriculum ranking scale is presented briefly: the student has achieved a basic, advanced and exemplary knowledge.

1.3. SCHOOL LIBRARIANSHIP IN MONTENEGRO

The school library plan prepares school librarian. Plan are included the pedagogical activities, library and information activities, cultural and public activities such as: collaboration with teaching staff and with administratively personnel, collaboration with principal for procurement of the necessary library materials, teaching-learning sources; presenting catalogs and collections; acquisition and clasification of information sources for some areas; quidance of students to the sources of scientific information on the way in making use of independent research; selecting and preparing materials for additional teaching and leisure activities; developing students’ reading skills; creating the habits of searching the necessary information to acquire new knowledge; giving assistance in selecting appropriate information; professional training…

In the curriculum is noted that it is need to equip the school libraries, and transform them into information center with a reading room for students. Libraries should be equipped with closed and open shelves for storage encyclopedias, lexicons, dictionaries, reference books, fiction books, student papers, CDs, video cassettes, transparency folio.., and “a cable TV should be connected to the central library in place” (Department of Education, 2005)

The school library program prepares in accordance with the school curriculum: an annual, monthly and daily. The school library program has three levels: general, operational and partial or daily plan that includes the types of users (teachers and students), librarians’ activity, users’
activity, time and space. The school library links required teaching programs, optional classes, extracurricular activities, school co-operation with public institutions...

However, today school librarianship in Montenegro is characterized by inadequacy, incompleteness and the dissipation of fonds, lack of professional library staff, lack of space for reading rooms and work of the entire class, and lack of equipment. The tasks of librarians are often carried out by workers without professional qualifications and passing the mandatory professional exam for this type of activity. The work in the school library often is done as a supplement to teaching lessons (40%), and with half-time work (20%). According to available data in the service of the Central National Library of Montenegro, in elementary school librarian jobs had done 19.51% of workers with university education, 68.29% with college and 16% with middle school. The workplace by librarian is usually filled with redistribution of teachers within the school; and it is often a place for redundancy of teachers. Fluctuations of non-qualified staff are followed by a non-motivation for vocational training or a passing of professional exam. In addition, *Standards for school libraries*, (Society of librarians of Montenegro, 1980) need to be modified and it is necessary to include in them the framework for the development of students’ information literacy.

School libraries in Montenegro are parts of two systems – educational system and library system. Consequently, their work is regulated in two ways: with legislation in the field of education and with legislation in the field of librarianship. Legislation which regulates the education activities also regulates the work of school libraries as integral parts of the schools, while legislation governing in the field of library and information services regulates the work of school libraries as parts of a unified library and information system of Montenegro. Regulations in the field of education apply to space and equipment of school libraries, the degree and type of librarian education, the examination for license and professional associate, since under these regulations, the librarian has the status of an associate in the classroom.

Regulations in the field of library science are applied to the structure of book funds in school libraries and training program of school librarians. Law on librarianship is determined a functions for all types of libraries, and therefore for the school library. The unity of all libraries realizes through one registry service in the National Library, which serves as the central library in network.

According to the *Standards for school libraries*, the structure of students’ fond should be divided on fiction and nonfiction books and this proportion should be approximately 2:1. Based on data on the structure of the fund submitted for the base of library network in Montenegro, it
is evident that school libraries fonds contain, in the highest percentage, fiction books for the mother tongue classroom, which make up 66.6% of the total fund. References, required in the teaching other subjects is represented by 8.7% compared to the total fund. The main causes for this are, certainly, insufficient budget, and insufficient cooperation of subject teachers with school librarians. Participants in the educational process in our schools do not think about school libraries as information centers of school, where begins process of information literacy of future users of large library and information systems.

1.4. PURPOSE AND GOALS OF THE STUDY

This research investigated the extent to which students acquire and teachers promote information literacy skills, and we explored teachers' perception about information literacy and school librarians’ effort for implementation of information literacy programs. In Montenegro has little evidence that schools were explicitly and systematically implementing an information process model across the curriculum.

Using concepts from information literacy theory, the researcher shows ways how library practice would change if librarians redefined themselves as literacy educators. Also, teachers have to learn how to integrate information literacy framework into their teaching, because that teachers could to teach information literacy must be information literate themselves and must have space and technical possibilities for carrying out the process.

The research shows at what levels of information literacy have primary school students and, through the presentation of their project work, shows way for evaluation of students’ information literacy skills according Standards for the 21st Century Learner (American Association of School Librarians [AASL], 2007) and on the basis of Big 6 model (Eisenberg, M. and Berkovitz, R., 1990).

Also, purpose of this study is to show the necessity of introducing national standards for information literacy and training programs for teachers and school librarians for information literacy, which would be continuous, not only through seminars, but also through interactions with other teachers and library associations in country and in world.

The involvement of information literacy into the curricula for primary school is a chance that school libraries get out from shadow and that policy developers in education realize significance of school libraries for education reform. School libraries are not just providers of resources for learning, but also the place in which students (and teachers) learn and acquire
knowledge. School librarians are key persons in supporting the important goal of information literacy and learning achievement, in general.

1.5. RESEARCH PROBLEM

In this study, according to Standards for the 21st Century Learner (American Association of School Librarians [AASL], 2007), the level of information literacy of students of the seventh grade in two elementary schools is investigated, through their project work.

It is investigating, also, the importance of school libraries in the information literacy of students through a comparison of two scenarios and two library programs in two schools: one school in Bar which has library workshop as elective teaching subject in which students learn about what is information, what are information sources, how to find, select, evaluate and use information and with a highly qualified school librarian and other school in Cetinje which has a non-qualified librarian, who has not passed the mandatory library exam, and has not teaching program for information literacy.

The level of information literacy of students in primary school depends on the successful implementation of school library education programs. This research will show important difference in results between students in these two schools, although, in both schools project work implemented through the regular teaching process, and through extra-curricular activities in the field of biology, geography, physics, chemistry, history, computer science, social studies, maths, foreign languages and other subjects.

1.6. RESEARCH QUESTIONS AND HYPOTHESES

According given background are asked research questions:

1. Do teachers and school librarians successfully implement the objectives related to information literacy included in the curriculum?
2. Do teachers collaborate with the school librarian in developing students’ information literacy?
3. What level of information literacy have 7th grade students got?
4. Does the project work contribute to the development of students’ information literacy?

For each of the research questions there are hypotheses to be tested. For research question 1 about teaching/learning objectives for information literacy in curriculum the hypotheses are:
For teachers the most important curriculum objectives are content – what should be learned, then process – how it should be learned.

Teaching methods still focus on knowledge transmission from teachers to students.

Teachers require by students to have skills for finding, locating, selecting, evaluating and using information without instructions how they to do it.

Teachers focus is mostly placed on the textbooks then on other information sources.

The hypotheses for research question 2 about collaborative work between teachers and librarians are:

- In Montenegrin primary schools no important collaboration between teachers and librarians to enhance the role of school libraries in promoting information literacy.
- School librarians need standards, guidelines and training for implementing information literacy programs through collaborative work with teachers.
- Teachers need instructions by school librarians in teaching information literacy.

The hypotheses for research question 3 about 7th grades students’ levels of information literacy are:

- The students in Montenegrin primary school have low level of information literacy.
- The level of information literacy is better of students who participate in library workshops.

The hypotheses for research question 4 about project works as teaching methods for information literacy are:

- Teaching methods as project work, through the finding locating, selecting, evaluating and using information sources in the school library, contributes to the development of information literacy.
- The interdisciplinary project is a suitable approach to promote information literacy skills.

1.7. SIGNIFICANCE OF THE STUDY

This research provides a contribution to the concept of information literacy development in Montenegro. Although the National Curriculum specify the goals that students are seeking, selecting, evaluating and using information from various sources, in certain schools programs for information literacy in elementary schools only sporadically implemented. This study shows that when teachers and librarians selected the following standards or models for
teaching information literacy, and apply them in practice, through the cooperation, their work becomes more meaningful and more visible - students became critical thinkers.

The main activities of national institutions and organizations for education have been to arrange conferences and seminars, to share experiences and to facilitate thinking about information literacy among professionals, especially school librarians because they can help to identify the thinking processes inherent in the content standards and in information literacy, offer to write up the unit plans that result from the collaborative exchange and work with teachers to extend the notion of learning communities so that it embraces a “global web of individuals and organizations connected by common interests and information needs.” (Harada, 2003, p. 54)

It is critical for our global society to provide quality researchers and thinkers to deal with the information challenges of twenty-first century. “Information literacy is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to engage critically with content and extend their investigations…” (Bundy, 2004, p. 9)

School librarians and teachers can benefit from this research during the implementation of goals for students' development of information literacy. According this study teachers and school librarians can examine, in their own schools, process of implementing information literacy programs and, especially, assessment tools for evaluating achievement of students in their inquiry and acquisition information literacy skills.
2. RESEARCH REVIEW

2.1. CONCEPTS OF INFORMATION LITERACY

Development of the concept of information literacy in the last decades of the twentieth century and in the past decade of 21st century is extremely rich and it is the easiest to follow in the English-speaking countries: USA, UK, Australia and New Zealand because of numerous studies. However, this does not mean that information literacy is not developed in parallel in other regions. Johnson and Anderson (2005) agreed that the European approach of information literacy "is more varied then USA/Australia/New Zealand" (Johnson, Anderson, 2005, p. 25) because of linguistic diversity (Virkus, 2003).

Information Literacy is a transformational process in which the learner must be able to “recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” and “information literate people are those who have learned how to learn”. (American Library Association [ALA], 1989, p. 2). In Submission to Inquiry into School Libraries and Teacher Librarians from Australian Library and Information Association [ALIA] (2010) it is said that “information literacy is the foundation of lifelong learning and is a basic survival skill for personal, educational and economic success in the 21st century.”(p. 10)

Many studies (Wu and Hsieh, 2006; Asselin, 2005; Harada & Yoshina, 2004; Stripling, 2004; Moore, 2000, 2002) show that the programs for information literacy support the school’s inquiry learning process and teach children how to find, analyze, synthesize and interpret information gained from a variety of sources and that students must receive support and guidance from knowledgeable instructors as the skills are practiced within curricular tasks that have relevance, interest, and value for them.

Bruce (2002) agrees that “successful information literacy programs do not only focus on teaching information skills, but on designing learning experiences that require the use of information skills”. (p. 14) Students need numerous experiences with multiple sources as well as guidance in the questioning and evaluating of sources, and by modeling and teaching appropriate thinking processes, students become prepared for the 21st century. (Simpson, Stahl and Fransis, 2004) Oberg (2004) also states that “teaching the inquiry process in ways that respect the interests and needs of young people is a complex and fascinating educational task, one that demands the very best of our knowledge and skills as teachers and librarians.”(p. 12).

In 2007 American Association of School Libraries [AASL] expanded and restructured
the standards that school librarians should strive for in their teaching. These were published as *Standards for the 21st Century Learner* and address several literacies: information, technology, visual, textual, and digital. These standards provide a conceptual framework and broad guidelines for describing the information-literate student which encompasses different dimensions of learning, such as the cognitive, meta-cognitive, affective and socio-cultural dimensions. All learners must be able to access high-quality information from diverse perspectives, make sense of it to draw their own conclusions or create new knowledge, and share their knowledge with others. These standards document the importance of teacher librarianship education programs that emphasize the teaching, technology, and leadership skills that teacher-librarians will need to facilitate this kind of learning for students and their teachers.

Programs for information literacy in the opinion of some authors (McGuinness, 2007), must be independent and not integrated into the curriculum because the curriculum depends on the relationship of the subject teacher. However, most authors perceive the importance of implementation of information literacy framework within the curriculum. (Kuhlthau, Maniotes and Caspari, 2007; Mokhtar, Foo and Majid, 2007a, 2007b; Bruce, 2002). "Integrating information literacy into the curriculum can improve students' mastery of both: content and information-seeking skills" (Lonsdale, 2003, p. 30). Johnson and Anderson (2005) also find that information literacy should be included in a particular classroom curriculum. They propose combination of: national standards, Big 6 process model/resource by Eisenberg and Berkovitz, (1990), school-specific deployment, teacher and librarian collaboration, and online access to Internet resources/learning objects. Eisenberg (2008) states that “specific objectives, activities, and tasks involving research or study skills and library or information behaviors may well signify information literacy in a particular curriculum/classroom” and that “implementing information skills instruction within the existing curriculum, involves the following actions:

- Select topics and assignments which are well suited to information skills instruction;
- Determine which skills are particularly relevant to the selected curriculum topics and assignments.
- Develop a broad plan that links the information skills program to various curriculum topics
- Design integrated topic and lesson plans to teach information skills in the context of the subject area curriculum” (p. 45)

According to Bruce (2002) that information literacy is “catalyst for education change”, there are three critical elements of learning to be information literate:
- Experiencing information literacy (learning),
- Reflection on experience (being aware of learning), and
- Application of experience to novel contexts (transfer of learning). (p. 14)

The subject teacher is therefore the key agent of change with respect to the successful implementation of an IL framework, but principals, curriculum coordinators, teacher librarians, and teachers responsible for coordinating IT across the curriculum should play an important role in the culture building of IL in schools (Henri, 2005; Oberg, Hay & Henri, 2000). But, there is no particular pedagogical approach, agrees Mokhtar et all. (2007a), and state that is hard to determine who can to teach IL most effectively. These authors recommend that educators IL must have pedagogical training, in addition to knowledge in the field of library and information science. Asselin (2005) lists main conditions for the effectiveness of teaching information literacy: teamwork and collaboration with librarians, direct use of information resources for learning and development projects, and new forms of learning. Instructional approaches associated with this view of an information literacy curriculum have embraced constructivism and inquiry-based learning over the last decade (e.g., Alberta Learning, 2002; Kuhlthau et all, 2007; Asselin, 2005; Harada, 2003).

2.2 INQUIRY BASED LEARNING – PROJECT WORK

Recent interest has developed from the recognition that students are not being prepared for productive lives in the workforce and society by traditional instruction (Partnership for 21st Century Skills, 2008). One way of incorporating IL within the school curriculum is through project-based assignments or through project work (Chu, Chow& Tse, 2011; Hart, 1999, 2000). A large number of definitions of project work, found in the literature, shows that there is no universally accepted model, but that project work, in fact, include authentic content, authentic assessment, support teachers and school librarians, explicit goals, cooperative learning, independent research, use of technological means, terrain classes... Project-based learning is now understood as a purposeful and organized process of active learning in which students in groups or individually, according to a carefully planned project comes to exploring new concepts (Munjiza, Peko and Sablić, 2007), or an systematic teaching method that engages and involves students in learning essential knowledge and life-enhancing skills through an extended, student-influenced inquiry process structured around complex, authentic questions and carefully designed products and tasks or presentation to the audience. (The Buck
Institute for Education [BIE]; Molly, 2008) Thomas (2000) found that project-based learning is effective for teaching problem-solving and decision making skills and lists five major criteria. So:

“Project-based learning is central, not peripheral to the curriculum; it is focused on questions or problems that “drive” students to encounter the central concepts and principles of a discipline; project work involves students in a constructive investigation; it is student-driven to some significant degree; and it is realistic, not school-like.” (p. 4)

Small’s study (2004) shows that the most important condition for the development of information literacy is students’ motivation. Chard (2001) argues that the project, as an in-depth investigation of a real-world topic worthy of students’ attention and effort, allows students to exhibit the range of capabilities they possess. ‘Project-based learning begins with the students own interests and questions. Students are involved in making decisions about how they will find answers and solve problems.” (Alberta Learning, 2004, p. 110) Grant (2002) has asserts that project-based learning is centered on students who are more autonomous as they formulate personally meaningful artifacts reflective of their learning.

Most of the studies which are investigated information literacy and IT skills in the context of project-based learning focused on how students used these skills as tools for doing their projects and not as learning outcomes that resulted from project-based learning approach (ChanLin, 2008), thus there is a need to investigate how an approach different from the traditional didactic instruction may promote the learning of these skills among students. Educational strategies based in constructivist approaches such PBL demand information literacy, but, in additional and reciprocally, researches have shown that project-based learning provides a good platform for students to learn IL and IT skills in tandem (Mokhtar et all., 2007a; Thomas, 2000). They can be taught by IL-trained teachers, the various components of IL skills that they would need in the course of their PW. Through project work students develop in research skills (Chu, Lo, Chow, Mak, Ho, and Tsang, 2008) and in reading skills (Chu, Tse, Loh, Chow and Fung, 2008) and in language skills. (Fariza and Yacob, 2009)

Harada, Kirio and Yamamoto (2008) claims that project based learning involves in-depth exploration of issues, themes, or problems, which have no predefined answers. It facilitates the development of ownership by giving students the chance to select topics that are personally relevant and by giving them a sense of responsibility to take charge of their own learning. These skills cannot be learned through one-time training such as tutorials or
workshops (Mokhtar, et al., 2007a, 2007b). These skills need to be reinforced through a longer period of time with proper scaffolding and guidance from the teacher.

Majid and Kanagasabai (2007) found that the Internet is the preferred source of information, when students work on project. Asselin and Lam (2007) state that if students increasingly turn more often to the Internet for school work, they will need to know how to critically evaluate the information for the particular learning purpose. These topics investigate also Kupier, Volman and Terwel (2005) and Limberg (1999).

2.3. SCHOOL LIBRARY PROGRAM AND INFORMATION LITERACY

Numerous studies has shown a positive relationship between students degree of information literacy skills, student achievement in general, and successful school library programs, led by library professionals who teach students’ information literacy skills, promote reading, assist to teachers and students to locate and critically evaluate information and synthesise their finding into new knowledge. (Maliszewski, 2010; Klinger and Shulha, 2006; Asselin and Doiron, 2008; Hay and Colleen, 2009; Hay, 2006, 2007; Todd, 2001, 2003; Todd and Kuhlthau, 2004; Oberg, Hay and Henri, 1999) “Literacy outcomes are also enhanced by teacher librarians who provide curriculum support and design resource-based learning programs.” (Australian Library and Information Associations [ALIA], 2010, p. 11).

Lonsdale (2003) agrees that a strong library program that is adequately staffed, resourced and funded can lead to higher student achievement regardless of the socioeconomic or educational levels of the adults in the community. Hay (2009) states that the teacher librarian provides support for students helping them “to be more efficient in research planning, locating and evaluating resources, selecting appropriate information, synthesizing and ethically using appropriate information, and writing their assignments.” (p. 18) Todd (2001) note:

“The hallmark of a school library in the 21st century is not its collections, its systems, its technology, its staffing, its buildings, but its actions and evidences that show that it makes a real difference to student learning, that it contributes in tangible and significant ways to the development of … meaning making and constructing knowledge.” (p. 4)

Shannon’s study (2009) show that the school librarian must be proactive in showing how the library program supports school goals and impacts student achievement if the
principal does not demonstrate an understanding of the potential of the library program on student learning.

2.4. PROFESIONAL DEVELOPMENT OF TEACHERS AND SCHOOL LIBRARIANS

Teachers are the creators and not just implementers of the curriculum, which play an active and constructive role in creating the organization of school work and life and they make decisions about what and how they will do in school. Conditionally, their “professional development concerning information literacy is a concept and is a framework for teaching and personal learning” (Moore, 2002, p.10) and is very important and obligatory.

Information literacy is critical in preparing teachers who can thoughtfully and critically implement the best teaching practices. Doyle (1999) agrees that “teachers are the most critical key to student attainment of information” and that “they must become information literate themselves.”(p. 23) Mokhtar et all. (2007) believes that only “teachers who are outfitted with both pedagogical knowledge and library competencies are invaluable assets to the school, and it would be pragmatic to assign such teachers to the role of full-time teacher-librarian.”(p. 9)

School librarians, the same as teachers, need to model of lifelong learning and should try to seek out personal professional development that complements and expands on their graduate education. Yukinava and Harada (2009) state that “curriculum, assessment, literacies, instructional strategies, and differentiated instruction are examples of topics that might be of interest to teacher-librarians and might not have been part of their teacher-librarianship education” (p. 98). Emmons, Keefe, Moore, Sanchez, Mals and Neely (2009) agreed that typical approaches to professional development, such as one-day workshops and formal courses without opportunities to test strategies learned, are insufficient to affect significant changes in practice.

Branch and Groot in their study (2009) show that after the yearlong professional development through Master of Education program in teacher-librarianship focuses on integrating of technology and on leadership, most librarians indicated that they continued to incorporate inquiry-based approaches in their schools. Also, over half of the participants were involving other colleagues at their schools in inquiry-focused practices.

Henri (2005) state that teacher librarians should shift their primary focus from students towards teachers because “when teacher librarians set their focus on teachers, and meet their
information needs, schools may shift resources towards the development of robust information services.” (p. 13)

2.5. COLLABORATION BETWEEN TEACHERS AND SCHOOL LIBRARIANS

Program of teaching and assessment of information literacy in schools can not be fulfilled, as states Eisenberg (2008), without the cooperation of all participants in the educational process. Teacher-librarian collaboration has been the focus of a number of studies (Herring, 2011; Mokhtar-Majid, 2008; Todd, 2008; Zmuda and Harada, 2008; Asselin, 2005; Buzzeo, 2002; Gross, 1999 Kulthau et al., 2007; Haycock, 2007). Henri (2005) says that “collaboration and collegiality are key measures of community well-being and are partial indicators of the existence of an information literate school community.” (p.2). Todd (2008) also reiterates how instructional collaboration between teachers and teacher-librarians allows students to achieve higher levels of literacy, problem-solving, and technology skills. ChanLin’s study (2008) investigates the effectivity of collaborative-teaching and inquiry PBL on improving student's information literacy and IT skills.

Kuhlthau at al., (2007) recommended having a flexible three-member core team consisting of two subject teachers and a librarian for the implementation of inquiry projects. She claims that this arrangement would be effective in harnessing the domain knowledge of the subject teachers and also the information literacy skills of the librarian thus promoting a more authentic inquiry experience for the students.

Through curriculum planning and through the offering of professional development in collaboration with librarians, teachers can develop pedagogical practices that focus on subject learning within an inquiry context. (Lonsdale, 2003) Carr and Rockman (2003) present idea that academic librarian need to collaborate with K-12 librarians to develop information literacy skills and lessons. Zmuda and Harada (2008) state that principals may consider to forming a leadership team on IL implementation that may include principals, curriculum coordinators, teacher librarians, and teachers. These specialists should share the same vision on promoting IL education in schools and consider how its development might be assessed (Henri et al, 2002). Haycock (2007) found that the principal is “a key player in supporting collaboration between teachers and teacher-librarians” (p. 3), because principals integrate the school library in instructional program.
3. METHODOLOGY

3.1. INTRODUCTION TO RESEARCH

This study consists of a theoretical and an empirical part. Through theoretical examination has been shown that the level of information literacy of students in primary school depends on the successful implementation of school library programs as much as on the realization of the teaching/learning objectives in the curriculum and on ability of teachers to collaborate with the school librarian. The empirical part is divided into three phases.

In first phase school librarians and teachers participating in this research should present their views and practice about teaching information literacy and realization of curriculum objectives for students’ acquisition information literacy skills. We collect data to answer first research question: Do teachers and school librarians successfully implement the objectives related to information literacy included in the curriculum?, and to test following hypotheses:
1. For teachers the most important curriculum objectives are content – what should be learned, then process – how it should be learned.
2. Teaching methods still focus on knowledge transmission from teachers to students.
3. Teachers require by students to have skills for finding, locating, selecting, evaluating and using information without instructions how they to do it.
4. Teachers focus is mostly placed on the textbooks then on other information sources.

Also, in this phase we collect data about second research question about collaborative work in development students’ information literacy skills between teachers and school librarians and we, according pre-research data, assume that:
1. In Montenegrin primary schools no important collaboration between teachers and librarians to enhance the role of school libraries in promoting information literacy.
2. School librarians need standards, guidelines and training for implementing information literacy programs through collaborative work with teachers.

In second research phase we “prepare terein” for 7th grade students’ project work and through their inquiries investigate what level of information literacy they have got. This is 3rd research question. We test following hypotheses:
1. The students in Montenegrin primary school have low level of information literacy.
2. The level of information literacy is better of students who participate in library workshops.
The findings of students’ information literacy competences have been organized into a number of categories:

- Task definition and background knowledge
- Finding, selecting and evaluating of information sources
- Organizing gathered information
- Synthesis and drawing conclusions
- Evaluation of project work

Each category has more subcategories. Disaggregating data according to different subgroups in tables the best inform our work.

Third phase of research refers to presentation of students’ project and their evaluation of overall process. Teachers, librarians and student present their views about project. We seek answer on fourth research question: Does the project work contribute to the development of students’ information literacy?, through testing following hypotheses:

1. Teaching methods as project work through the finding locating, selecting, evaluating and using information sources in the school library contributes to the development of information literacy.
2. The interdisciplinary project is a suitable approach to promote information literacy skills.

### 3.2. FOCUS SCHOOLS

All primary schools are included in the education reform in Montenegro, and in all of them project work was introduced as a new teaching method. However, there is a difference between the schools with good and less good performance of the school library programs.

The study included two schools: one school in Bar where is reform conduct in 2001 as pilot project; and one school in Cetinje, where reform started in 2005. Both schools have about 900 students. School in Bar - experimental school (ES) has library workshop as elective teaching subject in which students learn about what is information, what are information sources, how to find, select, evaluate and use information. School in Cetinje - control school (CS) has not this teaching program.

Classrooms in both schools are equipped with posters and drawings made by children in classes, but the classical arrangement of benches does not match the group work. In almost every classroom we observed a very good working atmosphere and it was obvious that
students do not have any problem to comply with the rules of communication in the classroom.

3.2.1. Library in the experimental school – ES

In first school (ES) the library is centrally located in the school. Attractive library shelving with clear shelf guiding provides accommodation for non-fiction resources and displays of new resources. New tables and chairs create a comfortable working environment and there is sufficient space for children to move around the library. The new equipment is donation of citizens, parents whose children attend this school and successful entrepreneurs.

Library found are separate on the teachers’ and students’ fonds. Universal Decimal Classification numbers are suspended from the ceiling to remind users of the most commonly used topics and the relevant numbers. Non-fiction resources are differentiated and plentiful, and provide excellent support for the teaching of the 1-9 grade curriculums. The library is equipment with a computer, phone, fax, copier, and scanner.

Library rules are in the line with school rules, internet is available, but upkeep. The students in this school on the panel cited 101 reasons for staying in the library: - In the library I get O2; - In the library I always learn something new; - Library is necessarily as a toothbrush - you have to use it every day; - In the library you can be alone, but never lonely!...

From the academic year 2009/2010 in this school the library workshop, which students attend one lesson (45 min.) per week is introduced as optional (elective) teaching subject. Program of library workshop includes the following contents: introducing students to the history of creation and development of library books, learning about parts of the book: the main title, title page, spine, foreword, afterword, content, illustrations, ..., introduction to book accommodation and decimal classification, introduction to the technique of issuing and returning books, exercise for quickly finding books on the shelf and return to the same place, arranging bookcases and aesthetic decoration of library, meeting writers and their literary works, searching trough catalogues, acquisition of press clippings from the children's, and edit panels for different dates.
3.2.2. Library in the control school – CS

In second school, the library is placed not in central, but in an inconspicuous part of the school building. In the library there is computer, but there is no phone or fax. The fond is not classified according to the Universal Decimal Classification, but per grade. Space for book accommodation is small, the furniture is old. Library lacks space for reading room in which the whole class could make exercises and follow instruction.

The library fond has reached a prescribed number of 12 books per student, as determine the Standards for school libraries (Society of librarians of Montenegro, 1980), but the fond is obsolete and from new editions contains only textbooks for teaching subjects. There is a referral collection. Part of the school materials (for example) is located in the computer classroom. There are sixtin computers, projector, and scanner.

3.3. PARTICIPANTS

The research includes 115 students of 7th grade classes (12 ages): 57 students from one school and 58 students from another school.

In the research 20 teachers participate: four teachers of mother tongue, four teachers of English, two teachers of geography, two teachers of physics, two biology teachers, two teachers of informatics, and two art teachers. The half of teachers have more than 40 years of age and have 20 or more teaching experience.

In the research two school librarians participate: the school librarian in ES has a university degree also has 10 years of experience, and she passed the library exam. The school librarian in CS has a higher (as today’s a bachelor’s) degree, 29 years' experiences in teaching and five years of experience on the librarianship. The librarian has not passed the mandatory library exam. He is, owing to deficiency of teaching hours, by school principal redistributed in school library to complement the teaching hours.

3.4. RESEARCH METHODS

In this study a combined research methods are used to obtain a more complete picture of teaching / learning information literacy process. Data sources consisted of: observation, analysis of curricula, analysis of school library programs, written reports and presentations
by students, interviews with teachers and librarians, the survey for students in which they value their work and experience on the project, check lists and rating scale.

3.4.1. Interviews with teachers’ and librarians

Small group interviews were conducted with teachers through a semi-structured interview (Appendix 2) schedule. This research method is “particularly useful data collection methods for accessing alternative points of view, for obtaining insights into group consensus or divergence on an issue or across accounts of an event and for clarifying the researcher's in-process interpretations garnered or developed from already collected data.” Lankshear and Knobel (2004, p. 208)

Teachers were asked questions on their strategies and methods they use for teaching and assessment, and their suggestions related to information literacy education. Interviews took 45 minutes in average.

Also semi-structured, but individual, interview with the school librarian (Appendix 1) were conducted in this research. This way allowe both the interviewer and the school librarian being interviewed the flexibility to probe for details or discuss issues. Each teacher-librarian has been interviewed four times for one to two hours during school hours. The initial interviews included questions asking them to describe: 1) professional background and training; 2) job description; 3) a typical day as a school librarian; 4) goals of library services; 5) student use of the library; 6) collaboration with classroom teachers; 7) perceptions of support from various actors in the school community (e.g., teachers, principals, district officials) and wider community (professional organizations).

3.4.2. Observation in classroom and in school library

For study of information literacy level of students most of the "evidence" lies in students’ behavior. The observation protocol (Appendix 5) has several parts or criteria:
1. Description of the general context of the class (class prefix and title, number of students, day and hour of class meeting);
2. Atmosphere on the classroom (appropriateness of course content, readings, and instructional materials, students interest for the lesson and their motivation for learning;
3. Objectives and content of lesson (appropriate choice of research, topics, and/or findings in the field);
4. Methodology, careful preparation and clear organization of classroom activities (effective use of class time, encouragement of critical thinking, appropriate response to students’ questions and comments;

5. Evaluation, feedback to students, clear and effective communication with students (ability to arouse student interest and curiosity, clear explanation of important ideas);

For observation in school library are used three instruments: checklists, rating scales, field notes. Criteria (Appendix 6) have four parts: physical environment, school librarian’s work descriptions, student observations, and teachers’ interaction with school librarian. Field notes, written either discreetly during participant observation, include account of events, how people behaved and reacted, what was said in conversation, where people were positioned in relationship to one another, their comings and goings, physical gestures and all other details and observations necessary to make the story of the participant observation experience complete.

3.4.3. Check lists and rating scale

For indicators (evaluation criteria) of students’ information literacy levels used a check list and four rating scale (Appendix 7): in progress (student are not able to make seeking strategies and does not select the best sources), essential (student knows to list the multiple sources, but still can not determine which resources correspond to the task; student needs help), proficient (student brainstorm all possible sources and decides in selecting which sources are appropriate) and advanced (students critically apply appropriate seeking strategies and select critically the best sources).

This way of measurement of information literacy skills made is according to Standards for 21st Century Learner (AASL, 2007) (Appendix 9) which contains the following areas to answer research questions about how well students: use prior and background knowledge for new learning (1.1.1; 1.1.2); develop and refine a range of questions to frame the search for new understanding (1.1.3); find, evaluate and select appropriate sources to answer questions (1.1.4); evaluate information found in selected sources on the base of accuracy, validity (1.1.5); make sense of information gathered; demonstrate mastery of technology tools for accessing information and pursuing inquiry (1.1.8); collaborate with others to broaden and deep understanding (1.1.9); use strategies from draw conclusions from information and apply knowledge to curricular areas (2.1.3); use the writing process to create products (2.1.6); use
information and technology ethically and responsibly (3.1.6); respond to literature and creative expressions of ideas in various formats and genres (4.1.3).

With the evaluation criteria set by teachers and librarians in the project work are also analyzed the level of success of project performance and clarity and interesting of presentation.

3.4.4. Teachers’ lesson plans

In 95% of classes lesson plans (Appendix 4) were available to researcher for a certain hour. Students were required to complete in-class assignments, in order to learn different skills required for completing their group work.

Lesson plans contain: a) operational objectives (i.e. work outcomes), which are a concrete general objectives of the program, through certain content (topic); b) theme - which implies teaching / learning content of a certain subject, i.e. scientific field, which has its structure and its sub-areas (topics); c) learning activities that provide develop skills and abilities of individual students (what students should do), process objectives; d) terms - contents are usually given in the form of concepts that students need to learn, and e) correlations - activities connecting the different content within the same subject, or the same content in different cases.

3.4.5. Students’ written reports and presentations

The students were surveyed (Appendix 3) and they were asked to submit proof of all steps in their inquiry process, beginning with 1st step: identifying task and sub-tasks for project and ending with presentation of product. Students worked on their projects in groups of five (some groups of six). At the end of each phase or step of their project work, each student individually was required to submit a written report, to questions prepared in advance. Students also, with assessment rubric (Appendix 8) evaluate final work of other groups or presentation of projects of their peers. They evaluate and, according certain criteria, choose the best presentation:

- Content: relevant information, current information, substantial arguments, viable ideas and solutions.
- Presentation: good grammar, coherent sentence structure, adheres to required stil and format, well organized information
- Artifact: feasibility, originality, creativity, design
3.5. DATA ANALYSIS

The data were analyzed qualitatively and quantitatively. “Qualitative methods are ‘ways of finding out what people do, know, think and feel by observing, interviewing and analyzing documents’” (Patton, 2002, p.145). The results were analysed using textual analysis but also included some quantitative data which was analysed using Excel. Quantitative methods (relate to the number or percent of students observed during a class period who actually participate in classroom discussions, comparing in both schools; number of teachers…) of data analysis we use to draw meaningful results from a large body of qualitative data.

3.6. RESEARCH PROCEDURES

Before start of research we contact via phone school librarians in choosen schools. From school principals in both schools are obtained permissions to conduct research. From teachers is required permission to observe classes. Research is processed slowly. The research was conducted during March / April 2011 at first school and in April / May in another school. They were analyzed, step by step, with some of the elements that make information literacy scale. During first week the research plan was setting up, next two weeks data about how students search information was collected, for one week students wrote their papers and prepared presentations and for two days students presented their work. Such research plan and rhythm is maintained in both school.

3.6.1. Preparation of students’ project

Gaining approval to conduct the research involves meeting the demands of approval protocols: completing numerous forms, providing sample instruments, indicating timelines, and dealing with many levels of authority. Standards for 21st Century Learners and Big6, a research model by Eisenberg and Berkovitz (1990), are presented teachers and librarians, and, also, research instruments, check lists and rating scales. School librarian and researcher explained to students and teachers the purpose of research which will be conduct in their school. It is established general teaching/learning objectives in students’ project:
1. Specific knowledge content – topics
2. Specific information literacy skills

The measurement of levels of students’ information literacy skills, with framework which is built on the basis of Standards for 21st Century Learners and Big 6 model begins with background knowledge and task definition. In this stage students require to identify their information needs and to analyze research problem which must be solved, using techniques and strategies such as mind mapping: 5W1H (Who? What? Where? When? Why? How?) and KWL (“What we know?”, "What we want to know?", and "What we learned?") questions. These strategies used to activate background knowledge prior to reading of the text or topic to be studied. The teacher divides a piece of chart paper into three columns of the text or topic to be studied. By asking students what they already know, students are thinking about prior experiences or knowledge about the topic. By being aware of students' interests, the teacher has the ability to create projects and assignments that the students will enjoy.

The stage of finding, locating and evaluating of information sources requires students to satisfy their information needs and that, using different information seeking strategies, check all of the possible and appropriate information sources (books, articles, encyclopedias, websites, personal interviews, audio-visual materials (DVD’s, CD’s, video …), print and online, that will help them to answer research questions. Students should to distinguish the characteristics of information sources and develop criteria for evaluating accuracy and objectivity of sources. It requires students to recognize when they need help from school librarian or teacher. Students should to check where they will find these sources and write the location of each source.

The making sense and organizing information stage implies using gathered information. Students should to record the information that they find, examine and compare information from different sources, to exclude irrelevant and duplicated facts determine if sufficient information has been gathered to answer the questions, use the notemaking strategy, record a bibliography, identifying author and title.

Stage of synthesis and drawing conclusions means that students should to make generalizations and inferences supported by factual details and examples, formulate alternative conclusions and test them against the evidence, to focus on the content of their work, re-enter their writing rather than the grammar and spelling at this step. This stage requires to students that they should know that their paper should be more than just a summary of other people’s ideas or what they found on the Internet.
The students were generally interested in what happens in the classroom and motivated to do the tasks assigned to them by teachers. The level of student participation was quite high and they are often encouraged by teachers to present their views and thoughts. Since that the question is foundation of problem-solving, students were asked to say what they know about ecology, climate change in the ES and alternative energy sources in the CS. In both schools topic is considered from the perspective of a particular subject: in the mother tongue classes emphasis is put on the style of scientific articles, research methods (survey, interview, report ...); in physics class at the notion of physical quantities (energy); in the hours of chemistry at the chemical composition (CO² and polluting substances, in hours of biology with ecology to the impact of pollution on wildlife, in the geography classes at the notion of climate, in English language class at the vocabulary riches... In CS topic is considered in physics class, but in the project is involved the teacher of mother tongue at a stage when students are preparing (selecting and evaluating) various kinds of research materials and when write own presentation.

In addition to defining the problem, students said their prospect for the final product - Power point presentation in the ES and the thematic school newspaper and wall posters in CS. Students answered the questions from teachers, but also proposed their own questions, and then they prepared Working Draft, for solving following tasks proposed by the teacher.

Content learning tasks in the ES were:

- Task for 1st group: Investigate indicators of climate change on global and local level in detail and analyze the current hypotheses about the causes of change.
- Task for 2nd group: Define and explain the greenhouse effect. Find out and describe a concrete example of the negative impacts of climate change on the man. (Find out about information in the Local Environmental Action Plan - LEAP).
- Task for 3rd group: Find out and analyze information on air quality in your town (from the Center for Eco-toxicology research, Hydro-meteorology Institute, and other institutions in local community)
- Task for 4th group: Find out and analyze information about the importance of water quality for wildlife
- Task for 5th group: Determine the level of environmental awareness of citizens of your city in a relevant sample from the level of understanding of the causes and consequences of global warming.
Research questions and learning tasks in the CS were: for 1st group - to find out and analyse information from several sources about what are alternative energy sources; for 2nd group - to find out information on water energy and give examples of the utilization of water in their environment; for 3rd group - to find out and select information about wind energy; for 4th group – to find, analyze and present available information about solar energy; for 5th group – to find and present several information about nuclear energy?

In this phase, students also add ideas of what else they want to learn about it. The questions were consolidated in the distinctive big themes. Teachers were helping students to graphically organize the questions and to follow a research plan. On the blackboard, as a thought pattern for most classes (63% in ES and 64% in CS) are specified KWL chart.

Students began research with ready primary questions, and follow the instructions by teachers. Namely, some groups got tasks to gather information that can be found in various professional organizations dealing with climate, water, energy, and the students had to seek information outside of the school library. For example, 5th group, which had first to determine which samples will choose and how to find and collect information, or 4th group, from which the students had to attempt a variety of institutions dealing with environmental issues and they should seek answers there.

Children in both schools were asked first to seek printed sources of information in the school library. Teachers and school librarians in both schools previously prepared handbooks, newspapers, journals (for example, several numbers of National Geographic Junior), and then several URL address with contents related to the ecology or alternative source of energy, for example, the site of National Agency for Environmental Protection of Montenegro, or address COBIB CG - union on line catalog.

In school library the atmosphere was more relaxed and more comfortable than in the classroom. Students were sitting, standing up, moving between the book shelves, talking. The data, obtained in this way, when students were in a more natural environment, have enriched this study.
4. RESULTS OF RESEARCH

4.1. LIBRARIANS’ PERCEPTIONS OF INFORMATION LITERACY

School librarian in ES emphasizes that her primary role is the promotion of student learning and see the library as the heart of the school, and seized on the opportunity to teach in an engaging style, bringing an enthusiasm.

- *School librarian should have an understanding of the library’s role in reading motivation and school-wide programming. Also, school librarian should have an understanding of inquiry-based learning and teaching information literacy skills.*

- She believes that she is capable to teach students of informational literacy and help teachers to create curriculum and provide professional advice to find the source of the information required by modern teaching.

- *Librarian should collaborate with classroom teachers to design inquiry based units that integrate the teaching and application of information fluency skills*

  Cooperation with the teachers is judged to be good, because the library is the club where teachers share ideas.

- *The school library is an integral part of the school and serves as a hub for learning and student success.*

School librarian has created an extensive web page for the library that included a library program, separate actions that were done in the library and that originating students reading habits. She helps teachers in planning lessons, in the service of information sources, print and electronic, and she seamlessly, but according to training plan for information literacy, teaches students and teachers, individually and in groups. This school librarian teaches students’ about what plagiarism, what is intellectual property, and that the option copy / paste is not good for their works. It actively assists teachers in making plans for conducting project learning.

School librarian created specific information literacy programs for each grades. Her information literacy program was based on the research process model which is not mandated by the Ministry of Education of Montenegro. This implies that students learn: how to find a book by author or by topic, how to select and use databases, what is a journal, and how it differs from a book, how to evaluate sources critically, why to write the citation for the quotation being incorporated into a paper… She points out that it is important to motivate students for reading and learning. So, students with a librarian designed and organized
calendar of reading: reading recommendations for individual titles. The reading calendar is on the panel, in the school hall. The importance of the reading calendar is that it influences the quality perception of the book. Students talk about the book recommended by the librarian and other students, often read the most interesting passages in the library.

The school librarian, in collaboration with teachers, involves students in making choices for the purchase of new books. This encourages students to further and better read, and to be informed so that they could recommend a book that the library should purchase (eg books recommended by library does not own or recommend a specific title to obtain more copies). The indicated activity is significant in many ways for students, primarily because it develops students’ awareness of personal impact on the work and the quality of the library.

Librarian and students collected a list of favorite books and lists of new titles (popular literature) that would be interesting to students. Students also must demonstrate that their suggestions and ideas, from large extent, influence the improvement of the quality of the library.

School librarian in CS school believes that the basic function of libraries is to borrow books and other materials needed for class for her students and teachers. His library program is elaborated annually, per month, and it listed only the broad objectives while there are no specific operational objectives. The librarian knows that the new curricula anticipate independent research by students, and claims that he helps students to find and evaluate information when needed, but he tells that teachers themselves should propose information and reference for students that is required to perform a specific project. In his library program visits to the public library, to the National Museum, and to the National library are included.

School librarian considers that the information literacy of students should be their primary task as well as teachers of informatics. He believes that other teachers see his role as someone who needs to provide print resources needed for the derivation of teaching classes. This school librarian co-operates mostly with teachers of mother tongue in securing the required reading books for students. This school librarian thinks that he can not make a program for teaching information literacy and that it should do the school teachers' council and principal, or government policy makers in establishing standards that guided schools to commit to development:

- *Without new standards and guidance for the implementation of information literacy programs, adopted at the Association of Librarians, Ministry of Education and Ministry of Culture, we can not much change the role of school libraries.*
4.2. TEACHERS' PERCEPTIONS OF INFORMATION LITERACY

A large number (15) of the teachers said from their experience that their best lesson were those which included the entire class in an active discussion on a specific topic related to students’ own experiences and interests. For example, it is the best way for learning when the students complete a specific task in small groups and then present and discuss own attitudes and spontaneous ideas with the peers and the teachers. It is observed that in class the important skills such as active listening, logical reasoning, debating and developing ideas are encouraged, which leads to acceptably atmosphere and positive energy. Teachers used the questions:

- to introduce sequential relationships of lesson: - What do you think about climate change? Why? What do you know about alternative source of energy?;
- to foster comparison: - What do you think, how are they (energy sources) different?;
- to develop problem solving: - What do you think; What we should do about this problem?

Students encouraged to freely expressing their opinion. At the ending of the class questions were used to improve students’ planning for adequate sources of information, product, and presentation: Which information sources will find? Which source is available? How do you present your ideas?

In general, teachers in primary schools have been prepared and had a number of seminars and workshops specifically related to teaching strategies. Most teachers (13) have completed training at the seminars Reading and Writing for Critical Thinking Project – RWCT. This project provides more than sixty different teaching strategies. It was useful for teachers because it helped them to choose methods to introduce a teaching unit in a manner which encourages learners’ curiosity and helps them to understand the purpose of learning. Different teaching strategies help students to investigate various topics, and introduce students to think about what they have learned, encourage them to engage in the constructively debate and applying the acquired knowledge in new situations. Many teachers (15) likeed the opportunity to introduce interactive methods of learning and teaching, but they agreed that these innovative strategies are hard to apply in the still quite traditional relationship in school community. RWCT methods include students’ inquiry, creative thinking, collaborative learning, discussion, and writing as a means of personal expression and learning support. Teachers feel that they need more training, especially for information
literacy, which would be continuous, not only through seminars, but also through interactions with other teachers and library associations.

Most teachers (15 in ES and 13 in CS) declared positive attitude in terms of introducing information literacy into the curriculum. They believe that information literacy helps students develop skills of independent thinking and critical reasoning and prepare them for their roles in further education and future work. Teachers say that they motivate students’ prior knowledge and experience to independently find and use information sources. They also consider (11 in ES and 12 in CS) that they encourage and develop the students' ability of classification and systematization, analysis and synthesis, extraction of important facts from irrelevant. Teachers refer students how to arrange, classify and display the collected materials and encourage argumentative discussion, which helps the student to form a picture of real life.

- *It is very important that students learn to seek access independently, adapt and use information*, is usual answer from teachers.

Teachers (12) point out that through example in textbooks students can practice to evaluate and analyze information from different aspects. Through discussion in class the teacher determines what students mean by certain terms and which meaning they have. Teachers emphasize the importance of the fact that students’ understanding of unknown words is basic precondition for successful learning. Teachers (14) assert that they instruct students where they could look for needed answers. But teachers in CS point out that they do not have insight into how children do their homeworks at home and how they manage to search for the information sources at home.

Teachers, however, gave different opinions about the question who is responsible and able to teach information literacy skills to students:

- *Teachers of informatics are the most responsible* (ICT), considered 5 teachers;
- *Information literacy should teach teachers of mother tongue*, said 5 teachers;
- *We are all equally responsible, because all the classes with students doing content analysis of text materials (images, audio), as well as intend, valuable, methodology analysis*, considered 7 of teachers and only 3 teachers said that school librarians should teach information literacy.
There are noticeable differences in viewing of collaboration between teachers and school librarian. Namely, 3 teachers in ES assert that they always collaborate with librarian and believe that school librarian can help them in the planning and realization of the teaching objectives. In ES 4 teachers assert that they often plan lesson with school librarian, 1 never, and 2 teachers sometimes collaborate with school librarian. In CS 1 teacher say that they always collaborate with librarian and with other colleagues, often collaborate 3, sometimes 4 and never 2.

Regarding curriculum, there is general agreement that inquiry topics are appropriate for students’ grade. But, most teachers believe that some of the materials are difficult for seventh grade students and that teaching program is too extensive.

Also, 4 teachers in the first and 6 teachers in second school believe that school libraries have only limited titles and materials which are relevant to some teaching subjects. On the other hand, some teachers like possibility that they are not limited to specific textbook in their lesson, but they can choose themes and materials that fit the interests and maturity level of their students. In planning the course half teachers start with theme and teaching subject,
not with objectives and they consider that the most important goal is that students understand the content. Process goals that are focused on the acquisition and development of information skills are in second plan.

- I must to teach provided lesson material, content that are provided in the curriculum...
- Our task is not only to teach students about contents which are interesting, but we need to teach our students that "No gains without pains" and that science is strictly, says the teacher of physics.

However, some teachers say:
- I think that we should present non-interesting content in a way that is interesting for children, so, they learn to love math, for example. One way for it is handling with statistical data in research project.
- In determining the lesson topics I was guided by curriculum and I tried to help students who are overloaded with a wealth of information from TV, radio, Internet, newspapers ... They needed to learn how to orient in the "forest" of information. It's not easy, not even for adults.
- Of course, students have different interests but they satisfy that interests in the elective classes and extracurricular activities. I allow students to choose sub-topics within one decidedly topic. Student can choose how they will present their project work. I value the creativity and originality and I think that teaching is more successful if students have different utmost results or product.

All teachers agree that it is important that the student understands what he/she is going to learn. It is very important to teach the content that reflects the real world. Usually, this is the introductory lesson, which teachers use to connect students with prior knowledge of the subject and topic that they will explore. Prior knowledge and students’ experience must be renewed for a successful mastering of new knowledge.

The majority of teachers (19) believe that knowledge is not merely a renewal which was previously learned. At the same time that means distancing from the previously learned knowledge. A large number of teachers (18) stressed that, for successful implementation of lesson, is important to create conditions and atmosphere in the classroom that encourage students to ask questions to each other, or to teacher. It is important for students to communicate about inquiry or projects dilemmas.

According to 17 teachers, their work with students was run through few types of analyses during which students recognize different types of facts: special-purpose text analysis (Why
is the article written?); content text analysis (What are the theme, crucial idea and the most important facts?); analysis of words in texts (unfamiliar words); pragmatic analysis (When and where was the text written, and what are the circumstances under which the text was written?); material text analysis in which students recognize the usefulness of text in everyday life, and ways and methodology with which the author came to certain information and validity text analysis (What students think about text, its content, the shape of text, the truth, and interesting of text?).

However, teachers put focus on analysis of text from print materials (textbooks), and not on analysis of web sites and hypertext. They express concern because students spend so much time in front of computers playing video games, corresponding over Facebook, downloading music and films, instead of reading books. Teachers say that students receive reading of online texts as viewing. Teachers give some negative aspects of students’ using the Internet: students may come upon incomplete information), information which is harmful, information which is unorganized and unusable and information which is not relevant.

Most of teachers (18) consider that students develop information literacy through asking good questions. However, the teachers put focus on the analysis of texts from printed materials (textbooks), and not on analysis of web sites and hypertext.

Teachers of mother tongue agreed that benefits of project work are in the facts that students develop reading ability in terms to richer vocabulary and better comprehension and apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts and conduct research on issues and interests by generating ideas and questions, and by posing problems. For science teacher’s important reason for project learning is students’ understanding of the nature of scientific knowledge and scientific inquiry and interest and enjoyment in learning. For art teachers the design of posters that support efforts to save endangered ecosystems around the world is important. Teachers still give several reasons for project work: students’ self-monitor of the researching process, willing to accept new ideas and concepts, creativity and originality.
4.3. STUDENTS’ LEVEL OF INFORMATION LITERACY

4.3.1. Task definition and background knowledge

There are a large percentage of students (Table 1) in both schools that have insufficient or weak capacity for the formulation of research questions and that is to solve the information needs of additional information and assistance to teachers: in ES 38.5% and in CS 43%. The difference score among students in these schools amount 4.5%.

Table 1- Task definition and background knowledge

<table>
<thead>
<tr>
<th>Statement</th>
<th>Levels</th>
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<tbody>
<tr>
<td></td>
<td>In progress</td>
<td>Essential</td>
<td>Proficient</td>
<td>Advanced</td>
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<td>ES</td>
<td>CS</td>
<td>ES</td>
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<td>ES</td>
<td>CS</td>
<td>ES</td>
<td>CS</td>
<td>ES</td>
<td>CS</td>
</tr>
<tr>
<td>Can formulate research topic</td>
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<tr>
<td>Brainstorms for prior knowledge and vocabulary independently</td>
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<tr>
<td>Acquire knowledge through pre-reading, discussion</td>
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<tr>
<td>Create secondary questions to guide research</td>
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<tr>
<td>Making and following a research plan</td>
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<tr>
<td>Students plan includes questions: 5W1H</td>
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<tr>
<td>Students plan includes KWL questions</td>
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<tr>
<td>Use graphic organizer to categorize questions</td>
<td></td>
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<td></td>
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<tr>
<td>Identify possible and product</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborate with peers to deepen understanding</td>
<td></td>
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</tr>
</tbody>
</table>

When asked why they chose these topics of climate change and alternative energy sources students are amounted different reasons, such as:

- topic actuality: *This topic is very actual, every day I listen, watch or read about the floods, fires ...* *We need to preserve the ozone, and not to pollute the environment ...*
- interesting topic: *In my village there are twelve water mills aloof 300 m, and they all use the same energy of the water ...* *I like to inquire about animals and endemic plant species, and I would not like to destroy them...*
• the availability of information about the topic: - *There are a lot of information about this topic on the Internet.*

• curiosity: - *I want to learn something new, because I am a member of the ecologic section in school and I want to share knowledge with others...*

• topics are easy to understood and do not require much time for gathering and selecting information: - *Topic is easy ... - I can find information fast... – I can find all information on the Internet.*

Students’ answers to the question of pre-reading discussion in the class matched with the results of the check list and with protocol observation.

A small percentage of students did not participate in presenting their views on the topic, in ES 5.2% and in CS 7% because all of them already knew something about the subject that is discussed, and they listed examples from their environment. Most students, over 50 % in both schools (Table 1), made a scheme of research; the pattern of thought will conduct research, and it contains questions: What do I know about it? What do I want to learn? What I do not know? Or: 5W +1 H (Who? What? Why? When? Where? and How?)

### 4.3.2. Finding, selecting and evaluating of information sources

Students in ES showed a much better library skills, then students in CS, who had difficulties, and only with librarians’ help they could find encyclopedias, dictionaries, yearbooks... on the shelves. Students in the CS took much more time to find an information sources that are needed for their research questions. The difference in the first segment, how students locate sources in the library is above 11% between students (Table 2) in ES and students in CS - (in ES 63.1 and in CS 51.7). Students skim to locate appropriate information sources and have own search criteria:

• easy access: - *I always select the first few sites on Google because they most answer on typed keywords and then I read it.*

• utility: - *If it reflects to me that it is a useful article, by title, (if answer on the topic is given on title) I copy it and save it, and later I read it and extract the essential parts for the project.*

• readability: - *I choose those sources which I understand and where extensively and hard (unintelligible words and scientific terms) words are not used.*
• accuracy: - *In my textbooks there are texts about climate change, and that was my first chosen source, because in textbooks all information are correct.* - *Information from sites with domain .edu is good.*

**Table 2- Students find, evaluate, and select appropriate sources to answer questions**

<table>
<thead>
<tr>
<th>Statement</th>
<th>In progress</th>
<th>Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ES</td>
<td>CS</td>
</tr>
<tr>
<td>Differences the characteristics of primary sources</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td>Locate in school library reference materials, CDs, DVDs, videos</td>
<td>3</td>
<td>5.2</td>
</tr>
<tr>
<td>Effectively access information sources</td>
<td>4</td>
<td>7.0</td>
</tr>
<tr>
<td>Become aware of the different sources available in getting information for research</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td>Recognize when they need help from school librarian and teacher</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td>Develop criteria for evaluating accuracy and objectivity of sources</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td>Identify main idea and supporting facts</td>
<td>2</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Students know (56% in ES and 52% in CS) that their choice of sources of information depends from the nature of the task and they become aware that they should find a number of sources:

- *I should find in school library Yearbooks or daily newspapers about the temperature scale in my town in during last year ...*
- *For introduction, I will find information about my topic in encyclopedia, in the school library, and information for main part of my presentation in textbooks, journals, and internet.*

We had a lot answers (almost half in both schools) of type:

- *I can find information about solar energy on the internet, on Wikipedia, it is very easy!*

Most of students thought that they do not need assistance in determining the sources of information and those they can decide by themselves which source is the best suited to solve the problem. However, there are those students who needed help (almost 40 % in ES and 50% in CS); therefore there were 16% in ES and 21% in CS of who rely on their peers in the group.
that they will help them to find information necessary for their project task and to solve the research question; or on the school librarian 69% in ES and 60%; or on teachers 13% in ES and 13% in CS; or on parents 2% in ES and 6% in CS.

Students in the ES (56%) for 7.8 % better identify the characteristics of primary sources than students from CS where are 48.2% students in proficient and advanced stage who know how to specify the characteristics of the primary sources of information, except the Internet.

- I should investigate opinion about climate change of citizens in my town, and I should make survey questionnaire. I should find information about ecology questionnaire, first. I can find it on internet!? I should choose sample! It is our source of information!

Many students needed help from school librarians for the formulation of survey questions, although they had learnt about what are surveys and interviews in sixth grade. The librarian, in the form of questions, reminds students of their research task: What are the causes of global warming? What are the consequences of global warming? What do citizens think about it?

It is became clear for students that they must be familiar with current theories about the causes and consequences of global warming so that they be able to make a research plan. One source of information is not sufficient to respond to their task:

Student: Yes, I know, I know! … First, I'll find something on the Internet!
Librarian: Did you remember what survey or interview must it contain and how you implement it?
Student: Aha! … Questions, questions!

During the reading texts students were using different ways of marking the logic elements of text. They underlined parts of text that are important to them, and they used different colors. For example, they marked in red part of the text that points to the rule, and their examples were marked in the blue; aside units were marked with numbers, and they gave the title of each unit, or recorded on paper important parts (page, entry, passage, references…)

Also, most students in groups found from three to four of data and determined relevant information for their project. Most students said that they read information critically before selecting:

- First, I read introduction and conclusion in the text quickly and then I choose those sentences that are useful for my topic.
I work in the same class with teacher, I read text several times, and then I analyze it, and note the main ideas.

I read only brief and interesting information, because I have no time to keep back on long texts.

Table 3. Skills to evaluate information on the basis of accuracy, validity, appropriateness

<table>
<thead>
<tr>
<th>Statement</th>
<th>Levels</th>
<th>In progress</th>
<th>Essential</th>
<th>Proficient</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ES</td>
<td>CS</td>
<td>ES</td>
<td>CS</td>
</tr>
<tr>
<td>Examine and compare information from different sources</td>
<td></td>
<td>3</td>
<td>5.2</td>
<td>5</td>
<td>8.6</td>
</tr>
<tr>
<td>Distinguish between fact and fiction</td>
<td></td>
<td>2</td>
<td>3.5</td>
<td>2</td>
<td>3.4</td>
</tr>
<tr>
<td>Distinguish between fact and opinion</td>
<td></td>
<td>3</td>
<td>5.2</td>
<td>3</td>
<td>5.1</td>
</tr>
<tr>
<td>Distinguish between fact and theory</td>
<td></td>
<td>3</td>
<td>5.2</td>
<td>5</td>
<td>8.6</td>
</tr>
<tr>
<td>Exclude irrelevant facts</td>
<td></td>
<td>4</td>
<td>7.0</td>
<td>6</td>
<td>10.3</td>
</tr>
<tr>
<td>Excludes duplicated facts</td>
<td></td>
<td>2</td>
<td>3.5</td>
<td>3</td>
<td>5.1</td>
</tr>
<tr>
<td>Determine if sufficient information has been gathered</td>
<td></td>
<td>3</td>
<td>5.2</td>
<td>5</td>
<td>8.6</td>
</tr>
<tr>
<td>Eliminates false ideas and unsupported claims</td>
<td></td>
<td>4</td>
<td>7.0</td>
<td>6</td>
<td>10.3</td>
</tr>
<tr>
<td>Analyze gathered information</td>
<td></td>
<td>4</td>
<td>7.0</td>
<td>5</td>
<td>9.4</td>
</tr>
<tr>
<td>Apply criteria for evaluating accuracy and objectivity</td>
<td></td>
<td>3</td>
<td>5.2</td>
<td>4</td>
<td>6.8</td>
</tr>
</tbody>
</table>

At this stage of research, there are also significant differences between the success of students in the ES and CS (Table 3) of 5%. Students in ES better examine and compare information from different sources and determine if sufficient information has been gathered to answer the questions. The percentage of those students who, when encounter with problem or question, decide whether it needs additional information and have a plan and strategy to get answers from multiple sources of information was in ES 56% and in CS 50.7%.

The percentage of those students in additional level who can critically assess, evaluate and extract details and concepts from different types of information resources was 15.7% in ES, and 10.3% in CS. The average score in this investigative step in the ES students is relatively
low. Over 56% of students in the ES can determine the main idea of reading the text and make generalizations and inferences supported by factual details and examples. The percentage of CS students is significantly lower: 48.2%.

Students apply techniques for the analysis of text, already are learned in previous grades, on classes of mother tongue and literature:

- We learned about different kinds of styles. Scientific information is accurate; it must not be subjective, because there is scientific evidence, numbers and charts.

- I learned on the mother tongue classes that the first step in the analysis is to read the text repeatedly, and then determine what are the theme and idea of the text and I apply this strategy.

4.3.3. Organizing gathered information

Students discussed what they had found: how is book important for topic, do they have enough information, are the information relevant or irrelevant. Sometimes students were demonstrating impatience in debate and non-respect other’s ideas. Many students felt sorry about the tense relationship in their group. But, in this phase turned out that most students are not skillful in the functional use of various documents, because they tended to browse the book at random, without consult of content, indexes, chapter headings, bibliography...

Table 4 - Make sense of information gathered

<table>
<thead>
<tr>
<th>Statement</th>
<th>Levels</th>
<th>In progress</th>
<th>Essential</th>
<th>Proficient</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ES</td>
<td>CS</td>
<td>ES</td>
<td>CS</td>
<td>ES</td>
</tr>
<tr>
<td>Make generalizations and inferences supported by factual details and examples</td>
<td>2</td>
<td>3.5</td>
<td>3</td>
<td>5.1</td>
<td>23</td>
</tr>
<tr>
<td>Paraphrase the information in own words</td>
<td>1</td>
<td>1.7</td>
<td>2</td>
<td>3.4</td>
<td>16</td>
</tr>
<tr>
<td>Use the notemaking strategy, record a bibliography, identifying author and title</td>
<td>3</td>
<td>5.2</td>
<td>5</td>
<td>9.4</td>
<td>20</td>
</tr>
<tr>
<td>Sorts facts within subtopic</td>
<td>3</td>
<td>3.5</td>
<td>3</td>
<td>5.1</td>
<td>22</td>
</tr>
<tr>
<td>Recognize relationships such as sequence, cause and effect</td>
<td>2</td>
<td>3.5</td>
<td>3</td>
<td>5.1</td>
<td>23</td>
</tr>
<tr>
<td>Arranged information in logical order</td>
<td>4</td>
<td>7.0</td>
<td>5</td>
<td>9.4</td>
<td>22</td>
</tr>
<tr>
<td>Handled with statistics data</td>
<td>3</td>
<td>3.5</td>
<td>4</td>
<td>6.8</td>
<td>23</td>
</tr>
<tr>
<td>Make connections and draw conclusions</td>
<td>3</td>
<td>3.5</td>
<td>4</td>
<td>6.8</td>
<td>21</td>
</tr>
</tbody>
</table>
Students tended to prescribe the selected parts of a whole. Likewise, lot of students used option copy/paste and printed all text and photos relating to their topic. As with books, the children were quick to assume everything found about their topic on internet was correct, just because it was there.

At this stage of research, there are also significant differences between the success of students in the ES and in CS (Table 4) from 6.2%. Students in ES better made generalization in comparing information from different sources and determined if sufficient information had been gathered to answer the questions.

Students do not provide the correct data sources on the internet, only the title but not author’s name, enter only the URL, but not the date of downloading the information, download the text, but they do not cite it correctly.

This is how appear an non-decode dialogue in this phase of students investigation in school library:

Student one: *I found this article on the red list of endangered animals that are...*
Student two: *Oh, we won’t do that now!... What text to put in introduction?*
Student three: *First, will put the information about ozone and its destruction, and then...*
Student four: *Sour rains! Here, I found it! I have a photo of the dry forest in Europe!*
Student one: *So, then we can tell something about animals...*
Student three: *Ok! We can!*
Student five: *I'd first put this data on the climate in general.*
Student three: *That is a huge! Write three short sentences only!*
Student two: *I do not know how to cite references, I haven’t written it down!*
Student one: *It does not matter ... the teacher will not notice it!*
Student three: *Ah!...Well, you look back from where you took the text! Should we cite the Vienna Convention for the Protection of the ozone like the teacher said? We'll, we will ask Miss Natasha! (School librarian)*

Handling statistical data for a large number of students consisted only of data collection and presentation of graphs and tables, without any detailed analysis. A little over half of students, 48.1% in CS and 54.2 % in ES know to effectively present the statistical data and charts and they know that tables must be accompanied by appropriate analysis and interpretation of results.
4.3.4. Synthesis and drawing conclusions

Students try to summarize and explain their findings by formulating a causal model that characterizes their conclusions in a form that is extensible to other situations. They build a strategy to draw conclusions, and use both, divergent and convergent thinking to formulate alternative conclusions and test them against the evidence, because effectively summarizing require good knowing of research topic. Half of the students 55% in ES and 51% in CS have an active attitude on exploration and use two ways to gradually build knowledge and formulate conclusions: deductive - clear demarcation from others, especially similar concepts (giving many examples, contrary-examples, exceptions, highlight borderline cases, which is difficult to determine where they belong), and inductive - drawing and analysis of a large number of individual cases, identification of common, essential characteristic of individual elements to which the term refers (synthesis).

- I read again all information and then give my opinion, but I usually agreed with members of my group
- The conclusion should be short and we need to write a few sentences from all research.
- We will write our work that cars are big pollutants. We will recommend that people should ride bicycles. People in our city need to build bicycle paths.

However, nearly half of students in both schools are still developing techniques for synthesis, and do not feel sure that their understanding of the topic are right and that their illustrations of data support their conclusions.

- It is difficult to determine whether the conclusion I wrote applies to my research question and my hypothesis
- It was helpful when school librarian instructed me that I need to ask myself another question for further inquiry: What did I learn about topic? Then I give conclusion.

Students now draw attention to the production of end products with their information and knowledge and they use writing process to develop new understandings of expression. Most students think that they know how to choose the appropriate strategy for plan writing. Students know that their works must include introduction, main part and conclusions. However, before the final version, some students in both schools have brought their texts to the review by the mother tongue teachers. Some students ask school librarian for help because: - Librarian does not mark our work!
Table 5 - Students prepare presentation

<table>
<thead>
<tr>
<th>Statement</th>
<th>Levels</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In progress</td>
<td>Essential</td>
<td>Proficient</td>
<td>Advanced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ES No</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>ES No</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Choose appropriate strategy to plan writing</td>
<td>3</td>
<td>5.2</td>
<td>4</td>
<td>6.8</td>
<td>20</td>
<td>35.0</td>
<td>20</td>
</tr>
<tr>
<td>process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Includes introduction, main part and conclusions</td>
<td>3</td>
<td>5.2</td>
<td>4</td>
<td>6.8</td>
<td>17</td>
<td>29.8</td>
<td>16</td>
</tr>
<tr>
<td>Uses appropriate vocabulary related to subject</td>
<td>3</td>
<td>5.2</td>
<td>4</td>
<td>6.8</td>
<td>18</td>
<td>31.5</td>
<td>21</td>
</tr>
<tr>
<td>Revises and edits using electronic software</td>
<td>3</td>
<td>5.2</td>
<td>4</td>
<td>6.8</td>
<td>20</td>
<td>35.0</td>
<td>22</td>
</tr>
<tr>
<td>Arranges bibliography in alphabetical order</td>
<td>5</td>
<td>8.7</td>
<td>5</td>
<td>8.7</td>
<td>17</td>
<td>29.8</td>
<td>20</td>
</tr>
</tbody>
</table>

Most students are not sure on appropriate form and presentation of the content and how much text should be written and how much content should be delivered by using PowerPoint. There were obvious differences between the group members, each had their own idea of how presentations should look like, and the school librarian had a role "to reconcile positions" between the group members. The librarian is generally suggested a variety of formats for creating products that express all ideas and information.

**4.3.5. Evaluation of project work**

Project work ends with an evaluation, where students, teachers and librarians share their opinions about the whole process of implementation of the project: the achieved results and acquired knowledge and skills. It is not only evaluated the learned lessons but also applying acquired knowledge and skills: finding, selection and critical evaluation of information sources, analysis and synthesis of information, organization of information, making charts, tables, drawings and presentations.

Students should develop evaluative criteria, participate in peer evaluation and engages in self-evaluation. A large number of students at this stage of research have shown solidarity with their peers, or a tendency not to express criticism of the work of other groups, fearing that does not reduce the score of their school friends:

- *The presentation was very good, I like it because it is answered on the subject, it is beautifully designed, and it has has lots of photos...*
- All parts of the work are good, it is evident that they read a lot of information sources, but only conclusion could be longer.
- Presentation is good, but I do not like music that is chosen by...
- My friends made very good presentation.

A very small number of students (the number was three of them in both schools) had shown a lack of knowledge about their field of research. The teachers urged students to name successful, less successful and unsuccessful aspects of presentations and also students’ evaluation of inquiry process. What was difficult during the research? What was interesting?

The hardest phase of the inquiry for students is to determine the accuracy, currency and quality of web sites as information source, because the students were quick to assume that everything they found about their topic on the Internet was correct and that has quality, because it was there. The most interesting phase for students is preparing of presentation:
- I like to design and decorate my presentation. – I like preparing my presentation.

![Figure 3 - Students demonstrate mastery of technology tools](image)

Students showed high level of mastering with technology tools in their inquiry, in both schools average grade was above level (Figure 3) The Boolean operators were used during searching (research), and they know that with operator “or” search results that contain at least one of these search terms, operator “and” search results that contain both terms, and “not” search results that contain the first term, and do not contain the following term: - We learnt about that at informatics classes in sixth grade... most of students claimed.
5. DISCUSSION

5.1. INFORMATION LITERACY IN CURRICULUM

Information literacy is included in the curriculum for nine-year elementary school in Montenegro. Appropriate learning activities prevised in the curriculum correspond on the question how to learn. Learning activities are critical to achieving the procedural goals of teaching program and considering kinds of those activities that depends the quality of teaching / learning in school. Activities are directed at students (and not to the teachers) and, simply put; they show how students should learn (learning activities through which it is possible to reach a certain goal). Guidance to the teacher what the student needs to do (how to learn) to reach a certain goal are provide by defining learning activities in the program. At the national level so called Curriculum Framework is set, and each school establishes its own - the school curriculum. Teachers are allowed to their own autonomy and professional freedom in its implementation.

Basically, teachers in primary schools have been prepared and they had had a number of seminars and workshops specially related to teaching strategies, but they found that they need more training, especially for information literacy, which should be continuous, not only through seminars, but also through interaction with other teachers and librarians. Most teachers have completed training for the derivation of project work. It is in line with findings in Kong’s et all. study (2005) that all school teachers with self-initiatives should have chances to attend elective courses on building knowledge of IL and the pedagogy of teaching IL. Bruce (2002) also emphasizes that “professional education and staff development programs for teachers and information specialists need to model and invite scholarly engagement with the idea of information literacy education.” (p. 12)

However, all school libraries do not monitor the compliance with the targets set in the curriculum. Although the plan is set at the national level, where it was emphasized that education is necessarily the same for all students, however among schools, there are significant differences in the realization of the goals of information literacy. Also, for many teachers the most important goal remains content analysis, and what should be learned, but not the way of how it should be learned, or how students find, select and evaluate information from multiple sources. Before reform thematic approach was dominant in our
schools and today it is expected from teachers to provide target and process - development approach of learning.

Teaching/learning objectives were more realized as content oriented then as process oriented. Namely, teachers in both schools believe that it is important that students acquire skills to read, analyze and "decode" text and "treat texts . . . as an object of critical analysis as well as a source of learning and pleasure "(Kapitzke, 2005, p. 34), but knowledge of content are the most important.

Nevertheless, in our schools, teachers focus is mostly placed on the analysis of texts from print materials (textbooks), and less on analysis of web sites and hypertext. Herring (2011) emphasis that “web use and information literacy skills should be part of each student’s learning and the focus in schools should be on how students can use information literacy skills to enhance their learning” (p. 1)

The fact that “the information from the Internet exists in unfiltered formats and since anyone can publish information on the Internet without editorial or expert review, as opposed to the traditional print reference materials” (Kong, et all., 2005, p. 5) is one important reason for development information literacy skills of evaluating information such as checking for currency, accuracy, and author qualifications critically interrogation of text. (Kapitzke, 2005)

Also, teachers rank emphasis on students’ interrogation as important skills, but more for content and fact finding. Students' acquisition of information literacy ability develop through the questioning process “for finding, reading, evaluating, and making sense of appropriate resources and using them effectively to share answers, not only trough questions for content and fact finding.” (Framer, 2006, p. 8)

5.2 COLLABORATION BETWEEN TEACHERS AND LIBRARIANS

Five year after implementation of education system reform in Montenegro, although ‘curriculum predicts involving active, collaborative, resource-based learning there are still innovative practices.” (Bruce, 2002, p. 5)

A large number of teachers in our schools feel that they are responsible for the teaching of information literacy. This is in accordance with Asselin’s study (2005) in Canada where more than half of teachers (60%) think that they are capable of teaching of information literacy, while 85% of librarians believe that they are responsible for teaching information literacy. In this research, the one librarian made a plan for teaching information literacy, and
the other did not. A librarian in CS believes that he is not responsible for the information literacy of students. He thinks that teachers are responsible, and that the Ministry of Education or the Ministry of Culture of Montenegro has to make a program and framework for information literacy, because school libraries are part of the two systems, educational and library. The librarian can not decide without school principal’s support whether to buy or not new books and magazines, and considering this entire he is not responsible for information literacy, but that teachers are.

Half of the interviewed teachers consult with the school librarian about the use of information resources which they need for their classes. The same number of teachers believes that students’ information literacy level is appropriate and not appropriate, which is consistent with results obtained in the observation and check lists.

The difference in the realization of the objectives for information literacy between the schools in which research was conducted is important, and it is conditioned with the cooperation between teachers and school librarians, and also with librarians’ creativity that made a good library program that occupies important place information literacy. It is clear that, as Lonsdale (2003, p. 32) agrees "librarian should be free from a prescriptive timetable and provided with the opportunity to teach in collaboration with subject teachers." Creativity, qualifications and “enthusiasm and ingenuity” (Klinger et all., 2009, p. 36) of school librarians and their co-operation with teachers, which is shown in ES, gives better results on students' information literacy skills acquisition, comparing to realization of isolation and inability of the library program in CS. It is clear that, as Henry (cited in Moore, 2002) agree, "unqualified teacher-librarians are no better equipped to employ an information model classroom than are their colleagues." (p. 8) and that as states Haycock (2007) “successful teacher-librarian is less cautious and exhibits more extroverted behavior than his or her colleagues, thus being available to and connected with teaching colleagues and instructional planning in the school.” (p. 3)

In the same way as teachers, school librarian in ES uses different teaching strategies to involve students into world of information. As she says in interview, huge number of students takes part in making choice in the purchase of new books, and they have total support in this from their teachers and whole school community. According to study by Kuhlthau, et all. (2007) “librarian responses on student learning are: input – resources and instruction; output – amount of student library use; attitude – change in student attitude; skills
– search skills and technology use; utilization – information use for content learning.” (p. 114)

Collaboration between teachers who have “curriculum experience and pedagogical competencies” (Mokhtar, et all., 2007b, p.11) and librarians who have “domain knowledge and library skills” has a positive effect not only on student achievement, but also, as states Haycock (2007) “leads to growth of relationships, growth of the environment, and growth of persons, all conducive to improved experiences for all members of the school community”. (p. 4)

5.3. THE DEGREE OF INFORMATION LITERACY OF 7TH GRADES STUDENTS

The degree of information literacy of students in primary school depends on the successful implementation of school libraries as much as on the realization of the goals of the curriculum. This research shows that there is a significant difference in the level of information literacy, and thus also the overall success of students in two schools with highly-skilled or unskilled school librarian. This discrepancy between the two schools where research was conducted is even moving up to 11% in some areas such as the use of library resources, using the note making strategy, record a bibliography, evaluation, analysis and synthesis gathered information.

Students in the ES, who for elective classes had library workshop and who had developed reading habits/skills, in these segments achieve better results. In library workshop students acquire research skills for analyses of different printed, digital materials. However, in both schools is evident that all students are not equally motivated to solve the task, because, as found Heinström (2006, chapter Discussion, para 2) "extrinsically motivated students seeking information was mainly regarded as gathering enough facts to meet the task requirements, "and" intrinsically motivated students measure task completion was not enough ", and" their topical engagement was guided by a true intention to learn.”

Students' "information literacy has not improved with widening access to technology" (Hay and Colleen, 2009, p. 20) and their poor understanding of their information needs make it difficult for them to develop effective search strategies. They also perceived that they knew more as they progressed through the task, as identified in the estimate of knowledge measure. According to Todd (2006) for many students the process of knowledge construction was one of finding facts and adding facts to their knowledge base.
This study showed that most of students with the help of teachers are able to post research question and show great motivation for the discussion and preparation of exploration. A large percentage of students stated that it is important to find more than one resource that verifies the information that they have found but they are not always sure that they collected enough different type of information sources for the project. According to Limberg's study (1999) information seeking was experienced as seeking and using information for understanding of topic. Limberg determined three styles of information seeking and use: fact finding; balancing information or forming a personal standpoint; and scrutinizing and analysing and says that “when the topic happened to be a controversial issue, the students thought of information seeking as critically evaluating and analyzing information sources. This view meant placing the topic in a wider context, thus not restricting relevance judgments to the subtopic. “(p.6)

Half of the students in this study has a strategy and knows how to choose sources of information, but, as Kanagasabai and Majid argees (2007), the Internet is the most desired information source. However, students in the ES received a well-defined tasks and instruction from teachers and librarians to use information sources for their research. Their choice of information sources often depended on the nature of the task. These students were more aware of the fact than the students in CS that the information does not simply exist on the Internet, and that they need to seek multiple sources. Also these students realize better than students in CS what the primary sources are, and that people can also be a good source of information. Weakly defined (general set) tasks in the CS gave to students bigger choice of possible sources of information, and also bigger number of possible answers.

The same was with the weakly instructed tasks, which did not have teacher’s or librarian’s instruction about the choice of information sources, they offered an opportunity to the students to choose those sources which were ‘easy to use’ and accessible. It was harder for these students to recognize the author’s view, aspect or to focus of research (Kuhlthau, et al. 2007) and they are often wandering in finding, selecting and evaluating of sources. On the other hand, clearly defined tasks, with precise instruction about which sites are good, recommended URL address or journals, were less interesting and hard for students in ES. These students recognized when they needed help from school librarians and they asked questions more often than the students in CS. Kuhlthau et al. (2007), state that "different types of searches have different purposes that are useful at different times in the inquiry process" (p. 84): preliminary (in early stages of inquiry) exploratory (for better understanding
of the topic), comprehensive (providing a "guiding idea" and focus) and summary (close of the inquiry). (p. 84) Similarly, students in ES were encouraged by their librarian, to question themselves what they read or watch, during all stages of research, and because of that students in ES showed higher accuracy and higher degree of criticism in recognizing of the "details" such as the idea of the text, the author's opinion, different attitudes, comparing to students from CS. Simpson et all. (2004, p. 8) divides three thinking processes in inquiry of multiple sources: corroboration which involves students in comparing and contrasting text with one another; sourcing which requires students to consider how the possible bias of the source might affect the document; and contextualization which ask students to situate a text in a temporal and spatial context.

The students were quick to assume that everything they found about their topic on the Internet was correct and that has quality, because it was there. Using a variety of sources for learning "include determining importance, forming a focus, decide what road, is taking notes. (Kuhlthau et al., 2007, p. 87) A little more than half the students know how to evaluate the information according to its accuracy and according to fact how much the authors are experts in their fields. A librarian can be very much helpful for them in this stage, because librarian acquire knowledge in various field and they read most of the literature published in journals, but teachers or principals not. (Haycock, 2007) Also, almost half of the students find difficult to analyze the text by smaller units, to write summaries and to paraphrase what he/she had read. Undeveloped reading habits condition that students respond weakly to literature and creative expressions of ideas in various formats and genres.

The most interest phase for students is preparing of presentation, and it indicates that student, as said Kupier, Volman and Terwel (2005), make immediate decisions related to using information because often look at graphical elements, such as font styles and images, rather than the whole text. “Children Web use and an intuitive approach do not always have the desired results from an educational point of view.” (p. 305).

5.4. PROJECT WORK AND DEVELOPMENT OF INFORMATION LITERACY

If properly planned and implemented, project work, according to the teachers in this study, contributes to the development of information literacy, critical thinking, acquiring new knowledge, aesthetic education, as well as the development of creativity and accountability in the use of information resources. Project work, through the concept of school development
planning of learning lessons, gives the possibility that this topic is found in 20% of the planned content of the curriculum in all subjects, where students investigate topics from various aspects, and are being trained for independent research. Subjects and disciplines become tools for studying a theme, a problem, question, or an idea. The program can be implemented through the regular teaching process, and through extra-curricular activities in the field of biology, geography, physics, chemistry, history, computer science, social studies, maths, foreign languages and other subjects.

Through project work “young people not only develop in-depth understanding of major ideas in the curriculum but they also develop the critical thinking and literacy skills that they will need to continue learning for the rest of their lives.” Stripling, 2004, p. 17)

However, as argued Chandler (cited in Kong et al., 2005) information literacy cannot be mastered through teaching one activity or project, but students through more inquiries and projects accumulate their learning experiences and then apply them in similar future situations. When involved in the project task, both learners and teachers experienced benefits from the teacher-learner interaction processes. (ChanLin, 2008)

This study shows that interdisciplinary project is a suitable approach to promote information literacy skills. Information literacy develops from basic competencies (reading, writing, numeracy, basic cognitive information processing) through information and communication technology skills, to cognitive processes of problem-solving, communication and decision making. (Kuhlthau, at al., 2007). The problem is that, this kind of learning is rarely used because, according to the teachers, it is hard to organize because a number the themes like ecology do not allow for correlation between several teaching subjects. Also, one teacher’s schedule does not often fit with the schedule of other teachers and project work involves carefully planned activities, time, space and resources.

In general, teachers in primary schools have been prepared and they had a number of seminars and workshops specifically related to teaching strategies, but they find that they need more training, especially for information literacy, which should be continuous, not only through seminars, but also through interaction with other teachers and librarians.
6. CONCLUSION

This study showed that a good school library program has a positive effect on the development of information literacy of students and that students in well-organized schools achieve better results. Multiple research methods are used in this study to gather data on how students in our schools acquire information literacy skills: observation, interview, survey, analysis of curricula and lesson plans. As a framework for research used structured questions, but it received a lot of information on unstructured questions. The teachers wanted to discuss about applying of different teaching methods for information literacy. Researcher especially enjoyed watching and listening to students during their studies in the school library, where the atmosphere was more relaxed and more comfortable than in the classroom. Students were sitting, standing up, moving between book shelves, talking, thinking-aloud. The data, obtained on this way, when students were in a more natural environment, have enriched this study.

Information literacy, according to Hart (1999) "can be understood to be a functional literacy and an umbrella term including traditional literacy (reading and writing), media literacy, visual literacy and computer literacy" (p. 6). During his/her education, every student should acquire and develop the most important competency - learning to learn and be information literate, to master skills in using information provided by the library because it is a specific window to the world of knowledge and an area in which pedagogy can find more interesting forms of work.

The process during which knowledge is created is very important, not only the result but the knowledge itself. So, without the cooperation of all participants in the educational process, children are unable to develop into people who think critically, apply knowledge to new situations, and participate ethically and productively as members of our democratic society. We can talk about students learning through independent study and experience if we achieve the conditions and favorable environment for learning.

All studies point to the fact that if school library is effectively resourced and managed by a qualified librarian with educational expertise, all of these increase students’ information literacy skills and learning achievement, in general. In the USA, Australia, Canada, and New Zealand school librarians are teacher librarians or library media specialists, and in some countries have dual qualification in teaching and librarianship. In Montenegro there is also such “regulation", but only on paper, because, as this survey shows, except for a small
number of good examples, that school librarians are not exactly trained for librarianship. So, "developers in education policy and library service provision, as well as local school administrators need to develop action plans that include sufficient time and resources for monitoring and revising the process of Establishing information literate school communities" (Moore, 2002. p. 14)

Teaching strategies for such a project work, which are based on constructivist approaches, demand information literacy skills, and, as Johnson and Anderson agree (2005) "will increase the importance and value of information literacy." (p. 32).

The theory of Vygotsky (cited in Kuhlthau, et al. 2007)) emphasizes the importance of heavy assignments. Stimulating for development are, not those tasks that a child can not solve alone, but those tasks which are above the current children’s capability but which are possible to be solved with the help of adults. According to this theory pedagogical process includes: designing the tasks, by teachers and librarians, that fall within the scope of the following areas of child development, and making sure that a student in such conditions is encouraged to engage all his/her existing knowledge and capability, and to ensuring his/her cooperation and cooperative activities. In other words to direct a child and help him/her to perform the task, because "even when instructions and purpose are clear, children's prior subject knowledge, the available resources, their internal organization and layout and the demands of interpreting information all interact to influence the quality of learning." (Moore, 2000, p. 6)

One reason for the use of project-based learning is that it encourages strong student engagement and self-direction. The most efficient way to increase students competency of problem solving, critical thinking, and participating ethically productively as members of democratic society is to teach students how to learn through guided inquiry, (Kuhlthau et al, 2007)

The best methods for developing information literacy are good understanding of the text and also ability of setting correct questions about what has been watched or read. Information literacy skills cannot be achieved without the inclusion of online resources in education, because students do not know how to critically evaluate information from the Internet unless their teachers and librarians teach them how to do it. It is what is “lacking the infusion of necessary knowledge and skills to use Web-based information effectively, critically and ethically” (Mokhtar and Majid, 2007a, p. 14)
There is no single model of good teaching hours, but there are requirements which are respected to be good lessons. When planning the lesson, the teacher should have in mind the goal, and what should be achieved by teaching hours, and which is the best way to achieve it and what teaching tools are available. Students should, as far as possible, take part in every stage of teaching, they should be given the opportunity to ask questions and seek answers, to work in groups and investigate. Many possibilities and longer time are necessarily for acquisition of knowledge and development of information literacy skills and this goal to be able attain through more projects. It is necessary to apply more active learning methods of interactive learning which would help students to develop skills and acquire information literacy, critical thinking, responsibility, support, cooperation, tolerance..., because the systematic knowledge can not be achieved without students’ practice in comparing one term to another, no matter are the terms related to the same teaching subject, or they come from different teaching subjects.

Based on the research results can be given recommendations on what each participant in the educational process should be done to achieve the goal: the development of students’ information literacy and practical knowledge and skills for lifelong learning.

School librarians in Montenegro should:
- establish, through the Society of librarians of Montenegro, the new standards for school libraries;
- determine, using information and experience from developed countries, standards and guidelines for information literacy;
- establish programs for the education of school librarians at the National Library as the central library in Montenegro, which would include information literacy;
- understand the necessity of automatization of school libraries and their inclusion in the union catalog COBIB CG;
- collaborate with teachers and parents in encouraging the development of information literacy;
- encourage and motivate the school community of inquiry based teaching;
- publish news and activities in the library, as well as the results of project work on the school website;
- make proposals for the completion and improvement of library collections and equipment;
- actively collaborate with professional bodies and organizations in the state;

Teachers need to:
- through professional training programs gain information literacy themselves;
- more collaborate with school librarians and understand the role which school librarian have in planning lessons and developing students’ information literacy;

School principal, as the person from who organization of work depends, should:
- achieve the conditions and favorable environment for teaching/learning;
- provide through the ministry and the government, budget for the development of library programs;

Government and the Ministry of Education should:
- enact and enforce legislation and standards relating to the modification of curricula, which primarily involved the development of information literacy of students in primarily schools;
- encourage and adopt accreditation programs for education and professional development of teachers and school librarians;
- provide budget for the development and implementation of school curriculum related to information literacy.

This research has limitations, because has been conducted on the modest sample of teachers, students and librarians, but larger samples would be too robust for the analysis. In addition, the phases were followed in carrying out two projects working with similar themes in two schools. Illustration of two cases was sufficient to show differences in the level of information literacy of students, which are caused by different approaches in carrying out projects and differences in the performance of school libraries.

However, the question is: are the goals achieved if only a little over half of the students have developed information literacy skills. Monitoring the development of these skills of students who participated in this study through the next school year could be the topic of next research, with focus on the matter how are online resources used in teaching.


www.libraryinstruction.com/information-literacy2.html


www.ucd.ie/sils/staff/drclairemcguinness/publications/

www.edutopia.org/inquiry-project-learning-research

http://www.teacherlibrarian.com/moore27,3.html


Partnership for 21st Century Learning Skills. Retrieved from:
http://www.21stcenturyskills.org/index


Zavod za skolstvo Republike Crne Gore (2005). Predmetni program za devetogodisnju osnovnu skolu, Podgorica

APPENDIX 1
Librarian Interview Questions
1. How do your background, education, and work experiences qualify you for the position of school librarian?

2. What is your philosophy of education? How does your vision of the school library fall within this philosophy? (The answers to these questions reflect individual beliefs)

3. Which field of professional development that you need points out?

4. How would you integrate information literacy skills into your work with students and teachers?

5. How do you connect what you do in the library with the classroom curriculum?

6. What do you see as the role of the librarian in the school setting and what do you hope to bring to the library?

7. How would you promote reading?

8. How do you develop and maintain a library collection that will meet the needs of our students and staff?

9. What type of schedule would you set up for library classes?

10. What documentation exists to guide library services in this district? (Manual, handbook, policy statement, mission statement, curriculum, best practices?)

11. What would you as a school librarian like to get out of this project?

12. If you could change one thing about the library, what would it be?
APPENDIX 2
Questions for teachers’ interview
Primary school in (town) ........................................

Years of teaching experience: (1 to 5; 6 to 15; 16 to 25; 26 + years)

1. Are your attitudes towards changes in education that you have witnessed in the classroom during the last five (5) years?
   (Positive    Negative)

2. Does your teaching program allow you sufficient teaching situations in which learners + teachers become “co-learners?”
   (Yes        No)

3. Does your curriculum allow you sufficient teaching situations in which you would be able to coordinate with school librarian?
   (Yes        No)

4. Does your teaching program expose students to knowledge and skills that will be necessary and helpful to them in the real world?
   (Yes        No)

5. Does your teaching program allow students to choose topic for learning/inquiry in which they are interested in?
   (Yes        No)

6. Does your teaching program allow your students to develop information literacy?
   (Yes        No)

7. What do you think, who should teach students about information literacy skills?
   a) School librarian, only
   b) Teacher who teaches _________
      (Subject)
   c) All teachers together
   d) Librarian and teachers together

8. Does your teaching program allow you time to help students to find, select, evaluate and use information sources effectively?
   (Yes        No)

9. Does your teaching program give you time to prepare students for self-directed learning? Do students make choices for learning/inquiry topic that they are interested in?
   (Yes        No)

10. Which type of teaching methods do you prefer?
   a) Lecture by teacher
   b) Class discussion
   c) Projects (class or individual)
d) Textbook assignments
e) Other __________________________

11. Where you start from in preparing your teaching program (lessons):
(You can choose more answers)

a) from general curriculum outcomes
b) from operational outcomes
c) from students’ activities
d) from corellation with other teaching areas
e) from curriculum topic
f) from availability of teaching resources in school library (collaboration with librarian)
g) from teaching methods

12. Do you think that you succeeded in realization of your teaching program, if your students:
(You can choose more answers)

a) learn about curriculum subject
b) develop autonomy in learning (learn how to learn)
c) develop communication competency
d) develop skills to solve problem/task
e) develop research skills
f) develop readings skills for analysis, synthesis of texts
g) develop creativity/esthetic growth
h) other __________________________

13. Which sources do you use mostly in preparing teaching program/lessons?

a) textbooks and activity books
b) scientific journal
c) newspapers
d) internet
e) reference materials

14. Do you believe it is necessary to redesign professional development to accommodate the changing needs of twenty-first Century?

(Yes ☐ No ☐)

15. Teachers ideas and suggestions...........................................................................................................
...........................................................................................................................................................
...........................................................................................................................................................
APPENDIX 3
Questionnaire for students
1. I am  O Girl  O Boy

2. At home, I have computer.   Yes  O  No  O

3. I go to the school library:
   O Every day  O two times per week  O once a week  O once a month  O never

   (Please, in circles write x)

Describe why did you choose this topic to inquire?______________________________

___________________________________________________________________________

Did you learn anything new about given theme during discussions in class?

O Yes  O No  O Sometimes

Did you made the research plan? If you did what is it consist?_____________________

___________________________________________________________________________

What the information source did you need to collect for the problem?

___________________________________________________________________________

Describe how do you plan to gather data and information?_________________________

___________________________________________________________________________

Have you find in school library appropriate data for your task? (Please, round)

a) I think I am        b) I think I am not

What sources of information provide the most information for you?__________________

___________________________________________________________________________

Why did you choose this information source, why do you like?_______________________

___________________________________________________________________________

Did you need to ask for help to find information – if whom?______________________
How many different sources of information did you end up using?

a) only one   b) two   c) more sources

Have you had difficulty in searching of information – if you did why was difficult?________

___________________________________________________________________________

How do you know which is the right web site with content that relates to your topic? ________

___________________________________________________________________________

Are you allowed to copy the content on Internet and other sources? ________________

___________________________________________________________________________

How are you going to present the results of your inquiry? ____________________________

___________________________________________________________________________

Was the way of work on the project interesting for you?

a) Yes   b) No   c) something yes, something no   d) very interesting

___________________________________________________________________________

Would you like this way to be the teaching in classes?

a) Yes   b) No

___________________________________________________________________________

Are you, remined after inquiry for the project on the some level of knowledge, or you learned something new?_______________________________

___________________________________________________________________________

Do you believe that group work were helpful for completing the task?________________________
APPENDIX 4
Examples of curriculum objectives for information literacy
<table>
<thead>
<tr>
<th>Subject</th>
<th>Operative goals</th>
<th>Students’ activity</th>
<th>Ideas/ contents</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother tongue</td>
<td>Student perceives appropriate to his/her age science-popular texts with themes from other subject areas</td>
<td>based on teacher’s questions they separate crucial ideas and important information and write them into their in advance prepared map of ideas/conceptual map; they orally present a completed conceptual map; they show their opinion and try to establish it they talk about their experience and thoughts; they use reflective pattern as the basis of written speech performance; they read more times the basis of written speech performance and try to remember it as much as possible; they search from different sources necessary data and write them into reflective pattern/work concept; they modify purpose and theme of text: grade (un)truthfulness cited data in the text;</td>
<td>Environmental protection</td>
<td>Biology with ecology Physics, Geography, Arts Social studies (appropriate science texts)</td>
</tr>
<tr>
<td>Physics, Biology with Ecology, Chemistry</td>
<td>They find out historical and social development of nature sciences; they learn to respect proof of evidence and creative for the development of scientific theories; they understand the importance of experimental knowledge with the theoretical, analytical and synthetic thinking; they build up awareness of the interdependence of the individual and society and his/her responsibility for the survival of life;</td>
<td>students use literature and other sources of knowledge for getting experimental data; they meet different ways how to find scientific information they present ideas and results using diagrams, graphics and tables; they search from different sources necessary data and write them into reflective pattern/work concept; they are familiar with different methods of research in scientific disciplines; they defer basic methods of research work and its application</td>
<td></td>
<td>Mother tongue, Geography, Social studies, Arts</td>
</tr>
<tr>
<td>Math</td>
<td>Student develops knowledge about proportions and percentage accounts and sizes</td>
<td>they present ideas and results using diagrams, graphics and tables;</td>
<td></td>
<td>Physics, Biology, Chemistry, Social science</td>
</tr>
<tr>
<td>Social science</td>
<td>Student understands the importance of protecting the natural environment; Student becomes familiar with national plans and regulations on protecting the environment; Students learn to respect theory, analysis and synthesis; Students build up awareness of interdependence of the individual and society and their responsibility;</td>
<td>translation of knowledge and information in their own vocabulary and for them understandable way; systematization and regulation of information and knowledge in their own way; independently drawn conclusions, discussion, debate and similar; connection of previous knowledge and things that are learned now; connecting what is taught at school with real life happenings; engagement of prior knowledge and past experience of students in formulating, analyzing, investigating and resolving problem situation;</td>
<td></td>
<td>Biology with ecology Physics, Geography, Arts, Mother tongue</td>
</tr>
</tbody>
</table>
APPENDIX 5

PROTOCOL FOR OBSERVATION IN CLASSROOM
Subject: __________________________
Teaching unit: ________________________
Class: ______________________________
Lesson: ______________________________
Teacher: ____________________________
Date: ________________________________

### CLASSROOM ENVIRONMENT

<table>
<thead>
<tr>
<th>ATMOSPHERE ON THE CLASSROOM AND PARTICIPATION OF STUDENTS</th>
<th>Yes</th>
<th>Occasionally</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Students participate actively, not only passively.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Students talk openly, not only when teacher asks.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Students respect basic rules of communication in classroom.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- In the classroom is corresponding atmosphere.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Students are interested for lesson and they are motivated to learn.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### OBJECTIVES AND CONTENT OF LESSON

- Appropriateness of course content, readings, and instructional materials)
- Teaching unit fits well in curriculum and teaching program.
- Plan is done in cooperation with librarian.
- Teaching unit incites development of various cognitive capacities.
- Amount and type of information that are represented during the classes are corresponding.

### METHODOLOGY

- Teacher instructs students on information sources.
- Teacher, except textbook, uses other teaching materials.
- Methods that are used in classroom are corresponding to students age and target of the class.
- Teacher uses methods to solve problems.

### EVALUATION

Teacher has elaborated setting for evaluating of success of project work.
APPENDIX 6
PROTOCOL FOR OBSERVATION IN SCHOOL LIBRARY
<table>
<thead>
<tr>
<th>Physical environment</th>
<th>Entry, signage, door position</th>
<th>open</th>
<th>closed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Decorative signs</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>Student works displays</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>Book displays</td>
<td>subjects</td>
<td>udc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>School librarian observations</th>
<th>Helping behavior - assisting with assignment</th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directing behavior - showing where a book is shelved</td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Instructional behaviour - teaching use of catalogue</td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Managing behaviour - asking for student card of membership</td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Position of school librarian in library</td>
<td>in stacks</td>
<td>behind desk</td>
<td></td>
</tr>
<tr>
<td>Other activities - description</td>
<td>description</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student observations</th>
<th>Number or groups - students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student behaviour with resources</td>
<td>book use</td>
</tr>
<tr>
<td>(Demonstrate confidence and self-direction by making independent choices in the selection of resources and information)</td>
<td></td>
</tr>
<tr>
<td>Student interpersonal -collaborative work</td>
<td>description</td>
</tr>
<tr>
<td>(Use interaction with and feedback from teachers and peers to guide own inquiry process)</td>
<td></td>
</tr>
<tr>
<td>Interaction with school librarian</td>
<td>description</td>
</tr>
<tr>
<td>(Seek appropriate help when it is needed)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher as library user observations</th>
<th>Interaction with school librarian- lesson plan, book use, internet use…</th>
<th>description</th>
</tr>
</thead>
</table>


APPENDIX 7
Check list (example) and rating scale
of students’ information literacy
Example of checklist:

<table>
<thead>
<tr>
<th>Statement</th>
<th>In progress</th>
<th>Essential</th>
<th>Proficient</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can formulate research topic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brainstorms for prior knowledge and vocabulary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>independently</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquire knowledge through pre-reading, discussion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create secondary questions to guide research</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Making and following a research plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students plan includes questions: 5W1H</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students plan includes KWL questions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use graphic organizer to categorize questions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify possible and product</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborate with peers to deepen understanding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Rating scale:

<table>
<thead>
<tr>
<th>Inquiry steps Big 6 steps (Eisenberg and Berkovitz, 1990)</th>
<th>In progress</th>
<th>Essential</th>
<th>Proficient</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Definition</td>
<td>Student can not independently recognize needed information and can not define inquiry questions</td>
<td>Student gives examples of situations where information needs to solve the need for additional information and help teachers to identify information needed in order to solve information problem</td>
<td>Ecountering a problem or question decides whether it needs additional information in order to complete the task</td>
<td>Critically assess whether it can solve a series of questions based on their knowledge or need more information</td>
</tr>
<tr>
<td>Information Seeking Strategies</td>
<td>Student are not able to make seeking strategies and does not select the best sources</td>
<td>Student knows to list the multiple sources, but still can not determine which resources correspond to the task; student needs help</td>
<td>Student brainstorm all possible sources and decides in selecting which sources are appropriate</td>
<td>Students critically apply appropriate seeking strategies and select critically the best sources</td>
</tr>
<tr>
<td>Location and Access</td>
<td>Student need assistance to locate information they needed to draft the task and does not find information within the source</td>
<td>Student can to find answer on the question in a single source of information</td>
<td>Student has a plan and strategy for location and access information from multiple sources</td>
<td>Student effectively applies the criteria and plan to decide what information sources are needed</td>
</tr>
<tr>
<td>Use of Information</td>
<td>Student does engage in the source extract relevant information and need help</td>
<td>Student extract relevant information in one source of information;</td>
<td>Student decide, extract relevant information, and accurately use (read, hear, view, and touch) information</td>
<td>Student critically use information, respect copyright</td>
</tr>
<tr>
<td>Synthesis Organize information from multiple sources. Present the information.</td>
<td>Student does not extract details from information and organize information in logical order student does not present own ideas or ideas from information</td>
<td>Student can extract details and concepts from one type of information resource, but need help in presenting the information</td>
<td>Student extract details and concepts from different types of information resources and decide in organizing of information on the best way</td>
<td>Student critically organize gathered information from multiple sources and present information with high level of proficiencies</td>
</tr>
<tr>
<td>Evaluation Judge the process (efficiency). Judge the product (effectiveness).</td>
<td>Student does not judge the process (efficiency) and judge the product (effectiveness).</td>
<td>Student can judge the process and product, but need help in making assessment strategy</td>
<td>Student decide how judge the process and product and gives two reason for evaluation</td>
<td>Student critically judge the process and product and gives several reasons for assessment</td>
</tr>
</tbody>
</table>
APPENDIX 8
Rubric for students’ peer evaluation of project work
<table>
<thead>
<tr>
<th>Assessment rubric</th>
<th>POINTS</th>
<th>1st group</th>
<th>2nd group</th>
<th>3rd group</th>
<th>4th group</th>
<th>5th group</th>
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</thead>
<tbody>
<tr>
<td><strong>CONTENT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RELEVANT INFORMATION</td>
<td>0-20</td>
<td>insufficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>21-40</td>
<td>sufficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>41-60</td>
<td>good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>61-80</td>
<td>very good</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>81-100</td>
<td>excellent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURRENT INFORMATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUBSTANTIONAL ARGUMENTS</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>VIABLE IDEAS AND SOLUTIONS</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>PRESENTATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOOD GRAMAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COHERENT SENTENCE STRUCTURE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHERES TO REQUIRED STIL AND FORMAT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WELL ORGANIZED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ARTIFACT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEASIBILITY/ PURPOSE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ORIGINALITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREATIVITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DESIGN</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 9

<table>
<thead>
<tr>
<th>Standard 1</th>
<th>Skills</th>
<th>Dispositions in Action</th>
<th>Responsibilities</th>
<th>Self-Assessment Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inquire, think critically, and gain knowledge</td>
<td>Follow an inquiry-based process in curricular subjects, and make the real-world connection for using this process in own life</td>
<td>Display initiative and engagement by posing questions and investigating the answers beyond the collection of superficial facts</td>
<td>Respect copyright/intellectual property rights of creators and producers</td>
<td>Monitor own information-seeking processes for effectiveness and progress, and adapt as necessary</td>
</tr>
<tr>
<td></td>
<td>Use prior and background knowledge as context for new learning</td>
<td>Demonstrate confidence and self-direction by making independent choices in the selection of resources and information</td>
<td>Seek divergent perspectives during information gathering and assessment</td>
<td>Use interaction with and feedback from teachers and peers to guide own inquiry process</td>
</tr>
<tr>
<td></td>
<td>Develop and refine a range of questions to frame the search for new understanding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Find, evaluate, and select appropriate sources to answer questions</td>
<td>Demonstrate creativity by using multiple resources and formats</td>
<td>Follow ethical and legal guidelines in gathering and using information</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluate information found in selected sources on the basis of accuracy, validity, appropriateness for needs, importance, and social and cultural context</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Read, view, and listen for information presented in any format (e.g. textual, visual, media, digital) in order to make inferences and gather meaning</td>
<td>Maintain a critical stance by questioning the validity and accuracy of all information</td>
<td>Contribute to the exchange of ideas within the learning community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Make sense of information gathered from diverse sources by identifying misconceptions, main and supporting ideas, conflicting information, and point of view or bias</td>
<td>Demonstrate adaptability by changing the inquiry focus, questions, resources, or strategies when necessary to achieve success</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Demonstrate mastery of technology tools for accessing information and pursuing inquiry</td>
<td>Display emotional resilience by persisting in information searching despite challenges</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Collaborate with others to broaden and deepen understanding</td>
<td>Display persistence by continuing to pursue information to gain a broad perspective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard 2</td>
<td>Skills</td>
<td>Disposition in Action</td>
<td>Responsibilities</td>
<td>Self-Assessment Strategies</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
<td>-----------------------</td>
<td>------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td></td>
<td>Continue an inquiry-based research process by applying critical-thinking skills (analysis, synthesis, evaluation, organization) to information and knowledge in order to construct new understandings, draw conclusions, and create new knowledge</td>
<td>Demonstrate flexibility in the use of resources by adapting information strategies to each specific resource and by seeking additional resources when clear conclusions cannot be drawn</td>
<td>Connect understanding to the real world</td>
<td>Determine how to act on information (accept, reject, modify)</td>
</tr>
<tr>
<td></td>
<td>Organize knowledge so that it is useful</td>
<td>Use both divergent and convergent thinking to formulate alternative conclusions and test them against the evidence</td>
<td>Consider diverse and global perspectives in drawing conclusions</td>
<td>Reflect on systematic process, and assess for completeness of investigation</td>
</tr>
<tr>
<td></td>
<td>Use strategies to draw conclusions from information and apply knowledge to curricular areas, real-world situations, and further investigations</td>
<td>Employ a critical stance in drawing conclusions by demonstrating that the pattern of evidence leads to a decision or conclusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use technology and other information tools to analyze and organize information</td>
<td>Use valid information and reasoned conclusions to make ethical decisions</td>
<td></td>
<td>Recognize new knowledge and understanding</td>
</tr>
<tr>
<td></td>
<td>Collaborate with others to exchange ideas, develop new understandings, make decisions, and solve problems</td>
<td>Demonstrate personal productivity by completing products to express learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use the writing process, media and visual literacy, and technology skills to create products that express new understandings</td>
<td></td>
<td></td>
<td>Develop directions for future investigations</td>
</tr>
</tbody>
</table>

**Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge**
Statement of authorship

I hereby declare that the proposed masters thesis is in its entirety my own author work and that the used sources and literature are referenced in accordance with international standards and valid legislation.

Ljubljana, 22nd February 2012

Vera Đukanović
Statement of the candidate

With my signature I  _VERA ĐUKANOVIĆ_  declare that the content of the masters thesis in printed and electronic form is identical and that it can be published on faculty’s website.

Date: 22nd February, 2012.

Candidate’s signature: