

ETF – European Training Foundation

FINAL REPORT:

PROJECT: „Critical thinking in vocational education“

Organization: Center for educational initiatives Step by Step

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Introduction

The Demonstration Project „Critical thinking in vocational education“ was designed to support vocational education teachers in Canton Sarajevo to implement teaching methods that will encourage students to become independent and critical thinkers, and lifelong learners through a Project Based Learning (PBL) approach. The Project combined face to face training and networking of teachers with independent innovation in the classroom, supported by mentoring and external recognition.

Objectives:

- to support teachers in application of Project Based Learning (PBL) approach and diverse methods that support development of critical thinking in the classroom
- to improve students competencies through implementation of PBL
- developing cooperation among teachers and exchange of best practices

Target groups

Schools from Canton Sarajevo involved in project:

1. High Economic School
2. High Mechanical Technical School
3. Rail School Center
4. High School of Transportation and Communication
5. High School Center Hadžići

Project results:

Objective 1: Supporting teachers in the application of Project Based Learning and diverse methods that support development of critical thinking in the classroom

- 1. 25 teachers improved their competencies in the area of Project Based Learning and critical thinking**

Seven one-day workshops were organized and planned monthly for 25 selected teachers from vocational schools in Canton Sarajevo. The workshops addressed different elements of the PBL pedagogy.

Each teacher was expected to apply the new knowledge and skills in their classroom with their students. At the beginning of every workshop, teachers discussed their experiences of using the new skills. This process empowered teachers to reflect on their own teaching and to take responsibility for their own development.

Workshop topics:

1. Whom do we teach? - 30.03.2016.

- Adolescence and multiple intelligence
- How to motivate children to participate?
- How to make classrooms which promote critical thinking?

2. Techniques, methods and strategies for teaching and learning - 28.04.2016.

- Evocation Strategies
- Strategies for learning with understanding
- Reflection strategies

3. Environment for developing critical thinking - 20.05.2016.

- Why are questions more important than answers?
- Cooperative learning
- Team building

4. Research in education – 22.06.2016.

- How to use research in education?
- How to make good hypothesis?
- How to create a research plan?

5. Project based learning – 19.08.2016.

- Curriculum and PBL
- Project planning and project design
- Project evaluation



6. Project presentation – 23.09.2016.

- How to present project to local communities?
- How to give good feedback?
- Teachers Portfolios, project documentation and students assessment

7. Cooperation with parents and community – 25.10.2016.

- Presentation of results
- How to include parents and community
- Community resources

8. Project presentation and reflection

- Result analysis
- Personal achievements
- Step forward

The main outcomes were:

- Implementation of improved teaching methods and learning strategies in the classroom
- Active methods of professional development
- Better collaboration within school teams
- Establishing a network between teachers from different vocational schools
- Seven professional development modules available as [OERs](#)

Objective 2: Improving students competencies through implementation of Project Based Learning

1. More than 500 students were involved in Project Based Learning

Project Based Learning is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging and complex question, problem, or challenge. It is a style of active learning and inquiry-based learning. The result of the implementation of PBL approaches are school projects that all schools prepared and implemented together with their colleagues and students.

All 25 teachers involved a minimum 20 students in project-based learning, developing new approaches and resources and providing students with valuable and sometimes new learning experiences. The projects supported active participation of students, cooperative learning, exploration and problem solving, but also usage of diverse learning materials and resources.

Mentoring

After two days of training, teachers together with their colleagues and students started to develop their project ideas and plans. For the majority of teachers this was first experience in project preparation. All schools received feedback on their school projects before implementation as part of the professional development.

School projects

School projects varied in size and duration. Project activities took place both within and outside of conventional lesson time. In general, teachers worked in groups of about five whilst students sometimes worked in large groups (up to 20) and sometimes in smaller groups. Most of the projects addressed multiple competences: planning, research, design, technical knowledge, creativity, analysis, team skills, communication:

- Buy domestic - Marketing Campaign - Economic High School
- Rainproof benches - High Mechanical Technical School
- Development of postal boxes – Rail School Center
- How to ensure a safe railway crossing? - High School of Transportation and Communication
- Microbiological analysis of air - High School Center Hadžići
- Reading is important! – High School of Transportation and Communication

Recognition and showcasing of the projects

The achievements of the project were collectively recognised and celebrated in a formal ceremony at which the projects were presented to teachers and learners. Certificates were awarded to the participants.

Conclusions in the light of the project work that emerged:

- most of the teachers and students were motivated to invest time, to experiment and to take ownership of their learning
- most of the teachers and students were able to devise projects which related to the prescribed curriculum
- most of the students were empowered to shape their own learning and were pleased to have this opportunity

- most of the teachers collaborated with one another
- most of the teachers were proud of their own capacity to innovate and were proud of what their students had achieved

Objective 3: Developing cooperation among teachers and exchange best practices

The project was designed to encourage collaboration between teachers. Teachers did learn from one another during the workshops and during project work.

During the training program and implementation, teachers developed projects, lesson plans and other materials and resources that could be used by other colleagues through sharing on www.inkola.com

Development of cooperation and professional networking among vocational teachers was highly encouraged during the project implementation. Every month, teachers met and worked together during the workshops, they also shared and learnt from each other during the planning, designing and implementation of PBL with students. Teachers also were encouraged to share new skills and knowledge within their schools. All projects developed through project implementation are also available to the public and posted on a teachers web site www.inkola.com so that other teachers can use it in their practice.

Learning from the Project

Achievements

1. The scale and duration of the project was well tailored to permit 20 + teachers and 500+ students to experience new methods of teaching and learning
2. The training, support, mentoring and networking put in place were adequate to bring about changes in instructional behaviour by teachers
3. Vocational teachers in Bosnia Herzegovina can learn and apply problem-based and project based approaches successfully
4. Some NGOs, such as Step-by-Step, possess the competences, relationships and trust that permit them to perform effective professional development and to improve teaching and learning

Limitations and opportunities

1. The application of new pedagogical methods could commence earlier in this kind of project as this would give longer to run projects in schools and would help teachers to integrate projects into the subject plans which must be planned in advance
2. Teachers do not all develop professionally at the same rate: some teachers may be ready to innovate more and to do so earlier. This could be reflected in project design.
3. Access to the project was limited to the Canton of Sarajevo. Greater use of blended models of professional development could open access to teachers from other Cantons.
4. As this project has now been designed, it could be formally accredited and offered to other teachers in Bosnia and Herzegovina.