 

General Education Project (TABLA) financed by the

United States Agency for International Development (USAID),

and implemented by Save the Children

**GUIDELINES FOR APPROACHING THE ESTABLISHMENT OF CONTINUOUS PROFESSIONAL DEVELOPMENT (CPD)**

Abbreviations used in the text:

|  |  |
| --- | --- |
| **Abbreviation** | **Explanation** |
| APOSO | Agency for pre-school, primary and secondary education (Agencija za predškolsko, osnovno i srednje obrazovanje) |
| DC | Digital competency |
| ENABLE - BiH | Enhancing and Advancing Basic Learning and Education in Bosnia and Herzegovina (ENABLE - BiH) |
| 4C | Critical thinking, Communication, Creativity, Collaboration |
| FEiA | Foundation Education in Action |
| AWP | Annual work program |
| ICT | Information-communication technologies |
| IBL | Inquiry based learning (učenje kroz istraživanje, istraživački usmjerena nastava, ...) |
| KBE | Knowledge-based economy |
| CPD | Continuous professional development |
| MZiM | Peace Building Network (Mreža za izgradnju mira) |
| MoE | Ministry of Education |
| NPP | Curriculum (Teaching Plan and Program) |
| OTC | Operational teaching curriculum |
| PI | Pedagogical institute (Pedagoški zavod) |
| PPDM | Pedagogy, Psychology, Didactics and Methodology |
| SCiNWB | Save the Children for North-Western Balkans |
| STEAM | Science, technology, engineering, art and mathematics |
| ToT | Trainer of Trainers |
| USAID | US Agency for International Development |
| CCC | Common Core Curriculum |
| ZSRŠ/NEIS | Zavodom Republike Slovenije za šolstvo/National Education Institute of Slovenia (NEIS) |

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Introduction

In September 2016, the organization Save the Children began the implementation ofthe *Enhancing and Advancing Basic Learning and Education in Bosnia and Herzegovina (ENABLE - BiH)* project*,* supported by the *US Agency for International Development (USAID)* with the aim of equipping students in BiH with the key competencies they need to participate in the knowledge-based economy and become drivers of economic growth in BiH.

*ENABLE - BiH provides the basis for improving learning outcomes in mathematics, science, technology and informatics, and in cross-curricular and inter-subject areas in primary and general secondary education.* At the same time, the Project (which closed in 2018), linked the pre-service (initial teachers’ education) and primary education, where quality initial teacher education at BiH universities was the basis for all future steps in professional development of all education representatives in BiH. The identification of two key components, STEM (Science, Technology, Engineering and Mathematics) and PPDM (Pedagogical-Psychological-Didactic-Methodological education of future teachers) on which ENABLE-BiH relied were the result of a clear need to change the approach to learning and teaching students in primary and general secondary education in BiH, overcoming the limitation of the teaching process based on lecturing, memorizing and repeating, and moving towards more contemporary and innovative approaches to education.

So for the next stage of investing in education, the TABLA project was prepared for implementation by the Save the Children in North-Western Balkans (SCiNWB), in partnership with the Zavodom Republike Slovenije za šolstvo (ZRSŠ/National Education Institute Slovenia-NEIS) and the Peace Building Network (Mreža za izgradnju mira - MziM). TABLA is a general education project supported by USAID, to be implemented over the period September 2019-September 2022. This project aims to implement activities that support the development of students’ skills to engage in critical thinking, creativity, communication and collaboration (4C), and to improve their academic success in exact sciences in BiH.

The TABLA Project applies an innovative approach to improving the effectiveness of educational systems in BiH, in order to improve students’ learning outcomes and empower future teachers as well as teachers already on the job to apply elements of “21st-Century Education” like **STEAM** (Science, Technology, Engineering, Art and Mathematics) and **4C** (Critical thinking, Creativity, Communication and Collaboration), **PPDM** (Pedagogical-Psychological-Didactic-Methodological) and LO (Learning Outcomes).

The TABLA Project is focused on the implementation of the STEAM approach (the Art component was added to the Project, additionally strengthening the cross-curricular and inter-subject dimensions). The primary objective of the TABLA project is to prepare innovative approaches to improving learning outcomes by creating preconditions for integrating the STEAM, 4C, PPDM, and Learning Outcomes approaches into teacher undergraduate studies, and to design professional development packages for continuous professional development (CPD) of teachers that would allow the teachers to continuously deepen and upgrade their 4C competences, STEAM approach, and pedagogical, psychological, and didactic-methodological competences.

The Activities of the TABLA Project have been divided into four main project units, critical for quality education in 21st century:

Project Unit 1 (PU I): initial education / pre-service training: harmonizing the teacher university curricula with STEAM, 4C, PPDM and Learning Outcome approaches;

Project Unit 2 (PU 2): professional development of teachers in service;

Project Unit 3 (PU 3): creating a stimulating environment for learning and working by equipping or establishing STEAM laboratories in model schools;

Project Unit 4 (PU 4): encouraging dialogue on education reform.

Project Unit 2 (PU2) is focused on the development of a Training Package for professional development (STEAM, 4C, learning outcomes, PPDM) and accreditation/certification in cooperation with the ministries of education and pedagogical institutes, with the aim of supporting improved efficiency and accountability in education.

Because of the COVID-19 pandemic situation, the Project will work on the development of digital competencies and the inclusion of the Bloom digital taxonomy, which takes into consideration new (particularly digital) technologies and their impact on the learning process, with an emphasis on the conduct and behavior of the actors in the learning process with respect to the advancement and omnipresence of new technologies.

The TABLA project, in particular, connects and supplements Project Unit 1 (PU1), which is concerned with amendments and upgrades to the system of pre-service teacher training and connection to teachers’ professional standards, and Project Unit 2 (PU2), which focuses on the improvement of CPD, which logically follows and builds upon the pre-service teacher training, and includes teacher promotion, an accreditation system for professional development programs, and serves an example of a wholesome program of teacher professional development in terms of the adoption of STEAM and 4C approaches.

This document was produced under Project Unit 2 (PU2), coordinated by project and technical staff of Save the Children in partnership with the Zavodom Republike Slovenije za šolstvo/National Education Institute Slovenia (NEIS) and experts from Bosnia and Herzegovina, and supported by the competent educational authorities of the Sarajevo Canton, Herzegovina-Neretva Canton, and Republika Srpska.

All terms used in the text that are gender specific, irrespective of whether they are male or female, shall equally include both female and male genders.

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System of continuous professional development (CPD)[[1]](#footnote-1)

The Agency for Pre-Primary, Primary and Secondary Education (Agencija za predškolsko, osnovno i srednje obrazovanje - APOSO) took to analyzing the teacher CPD of BiH in 2013, and made the following conclusions: (Beara M, Petrović D., 2020):

1. Professional development and career advancement is compulsory, but not implemented in a way that suits the teachers’ needs
2. There is no clear method of organization, realization and evaluation of CPD programs
3. CPD is not based on clearly identified objectives
4. CPD is not based on needs; instead, the training topics are imposed
5. Teachers do not have equal opportunity to participate in CPD
6. “Hunt” for certificates; monitoring and evaluation are the weakest point of the BiH CPD system.

APOSO concludes that the system of professional development in BiH has not exhibited any significant changes over the previous reform.

In addition, APOSO developed a Model for improving the system of continuous professional development for educators and expert associates in Bosnia and Herzegovina. The Model includes directions of professional development for achieving objectives and guidelines of raising awareness among teachers on how to improve professionalism and competencies. Moreover, in 2018, APOSO developed a Model for establishing an accreditation system for the continuous professional development of teachers in vocational education. Also, under the program Erasmus+, BiH established an eTwinning portal intended for training of teaching and non-teaching staff in educational institutions by means of exchanging professional experiences, and improving language and ICT skills. However, the actions at the national level are not mandatory for the cantons, Republika Srpska or Brčko District, as they can only be seen as recommendations.

No national catalogue of CPD exists in BiH. APOSO has developed a Catalogue of CPD Programs, and attempted to pilot it in two cantons; however, it seems that this publication is not publicly available (Beara M, Petrović D., 2020). The aim of the CPD catalogue is to compile a list of trainings to be used by the ministries as a basis for organizing public calls and accrediting training programs.

In accordance with the planned processes they are leading, the Ministries decide what kinds of new training the teachers need. The Ministries invite the school directors to communicate their professional development needs (what are the skills the teachers need?), and then teachers give their opinions in surveys conducted by the training program providers.

The quality of trainers vary, as does the quality of training offered. For example, basic skills training, the first level of training, was completed by almost all teachers, but there are no advanced or higher levels of training. Such programs need to be designed and accredited. It is very hard to assess the training the teachers attend – quite often they are trained at the same competency level, even when the training has a different name or is offered by a different service provider. Improving the accreditation of training programs is considered necessary and very useful.

Faculties, as the main education providers, have developed a catalogue of training courses they offer. The training is financed by cantonal ministries. By assessing the teachers participating in such training, ministries receive information on the quality of training, and then they may influence the faculties to improve their training courses. By 2002, the teachers’ faculties implemented training for teachers on the basis of the Memorandum on Cooperation signed with the Ministry of Civil Affairs. The training courses were focused on strictly professional areas: primarily teaching methods and PPDM. Occasionally, ministries issue calls for proposals for teacher trainings, and develop specifications and requirements for subjects and levels of training.

The authors of the 2020 survey, Beara and Petrović, found that there was no hard evidence that the results regarding the teachers’ needs were adequately incorporated in documents on educational policy in BiH. Inclusion of what was received through not-so-reliable mechanisms (self-evaluation and evaluation by directors) is done only in Republika Srpska, in some cantons and in Brčko District, with varying success, and is mostly addressed within short-term budget planning. For example, the Ministry of Education of the Sarajevo Canton has been financing compulsory training of teachers (e.g. training on how to keep an electronic diary and use online platforms in the teaching process). Such trainings are included in the budget plan for teacher education and development, and are linked to teacher quality standards. Teachers participating in said survey believe that most of the shortcomings stem from PPDM, but also identify some gaps in the professional areas where modern trends are appearing and new procedures are developing, about which the teachers are not sufficiently informed.

The table below presents in short the characteristics of CPD in BiH with respect to indicators (Beara M, Petrović D., 2020).

|  |  |
| --- | --- |
| **INDICATORS** |  |
| CPD as school policy priority | Yes |
| Regulating CPD | Some regulations still need to be developed. The existing ones are very decentralized. Regulations at national level are not compulsory; instead they are considered to be only a framework. |
| Institutions responsible for CPD | Very decentralized |
| Competency standards for teaching profession | Yes, as a recommendation, not as compulsory |
| Licensing | State exam for licensing |
| License renewal | No |
| Career advancement | Three ranks: mentor, advisor, and senior advisor |
| Identification of training needs | Teachers’ self-evaluations  Evaluation by school directors  External evaluation (Pedagogical Institutes) |
| CPD team and coordinator at school | No |
| Analyses | Pedagogical Institutes |
| CPD Catalogue | No |
| Inclusion of CPD in educational policy documents | At national level – scattered attempts without evidence of actual impact on practical work; mostly come from international projects. |

Regarding the status of CPD in BiH, a regional teachers’ education survey in Southeastern Europe has additionally confirmed the teachers’ dissatisfaction with their professional development and training, both in BiH and in the neighboring countries. Almost half (43.2%) of participants said it was necessary to significantly expand the list of offered topics, while one quarter (23.7%) thought that an effective system of continuous professional development of teachers did not exist. Teachers from Bosnia and Herzegovina, topped this list at 37.8%.[[2]](#footnote-2)

It is clearly apparent that at the level of BiH, as well as in individual administrative units, a multi-annual strategic plan for CPD development is lacking, which would, in addition to teachers’ needs, also include contemporary trends in education in the EU and the world. The existing document that regulates CPD needs to be updated, amended and upgraded, while some of its elements need to be omitted. This is why the TABLA project is drawing attention to three key elements that may raise the level of CPD. Those are, for example, teacher development programs that include contemporary development trends in the field of improving students’ achievements, teachers’ advancement, and accreditation of development programs.

Contemporary learning and teaching methods

Aligning education to the changes that are happening in the modern world, both at the level of societies/states individually and at a global level, is a major challenge for all societies. The main providers of education (education in the sense of schooling and education in the broader sense), to a given extent, and the ones implementing the changes, are the teachers, and they need to be provided with continuous and modern professional development and learning/improvement in order to be able to successfully perform this role. That way, they would not only be able to follow the changes that are evolving in the modern world and respond to them, but also become ready to respond to future challenges and future changes.

For a teacher to truly become an active driver of change, the still prevailing model of their work needs to be left behind: the focus on the classroom with a single teacher teaching a group of students according to the degree of education (primary school, three-year vocational school, four-year vocational school, grammar school) and by disciplines (subjects). This restricts the teachers’ work to simply lecturing students in the classroom, following the class schedule, and neglecting other roles and responsibilities that are also an integral part of their work in school communities, such as development and innovations, research, networking, school policies, and management.

As a result of speedy development within and among educational systems in terms of societal expectations, students’ diversities, the parents’ level of education, knowledge based on teaching and learning, the development of disciplines, and the role of ICT, the complexity of the teaching profession has increased, as has the need for continuous professional development and learning.

One fundamental role of the teacher in the learning and teaching process is to provide comprehensive care for their students, in the personal, vocational and social senses. A paradigm of a good teacher is shifting from a teacher who is good at teaching to the teacher who encourages learning, and guides the learning, enabling the students to achieve optimal results and development.

Contemporary learning and teaching principles focus on encouraging a pro-active approach to the learning process, and this puts the student and teacher in a dynamic and cooperative relationship. Such learning practice provides conditions for an encouraging learning environment where students, in addition to acquiring knowledge, also develop skills and abilities, and formulate their own value model in a constructive dialogue between peers and adults. For managing the learning process, it is important that teacher understands learning and that they be familiar with the newest understanding and paradigm of learning. Such new paradigms, besides the development of competencies such as critical thinking, communication, creativity and collaboration (4C), also include inter-disciplinary linkages, team work, learning with research, the development of procedural and strategic knowledge, a focus on learning outcomes, providing feedback to students, developing their self-regulation (formative assessment and evaluation), sharing knowledge and experiences among teachers, school networking, the creation of professional communities, and the involvement of directors in all such processes. Recently, due to the COVID-19 pandemic, the digital competencies of teachers and students have been in the spotlight. This is why the Bloom Taxonomy has expanded to the digital environment to enable learning (new tools and learning opportunities) and has been supplemented with new active verbs and concrete digital tools (Bloom digital taxonomy). Research (Dumont, Istance and Benavides, 2010) suggests that a teacher should take into consideration the students’ active role in learning, their prior knowledge, a balance between adopting concepts, skills and meta-cognitive competencies, collaborative learning, formative assessment, and evaluation; and include and explore different approaches and use modern technology. A teacher should also take into consideration the following characteristics of contemporary understanding of learning:

* learning is constructive: research confirms that students do not accept knowledge from outside; instead, they build it in the process of developing their own experiences;
* learning is self-regulating: students who master self-regulation are more successful - those who know how to effectively organize their studying time, who know how to set goals for themselves, etc.;
* learning is contextual: it has been proven that a good learning process always takes place in a social and cultural context, and in collaboration with it;
* learning is collaborative: effective and successful learning takes place in collaboration with other students, other people, resources and technology;
* learning is cumulative, and specific for each individual.

The realization of these characteristics, and a greater impact on the quality of students’ learning, are best achieved by empowering teachers to take responsibility for their own professional learning, personal change and valuation of their direct influence on improved student learning. Such professional learning develops in cooperation with other teachers, in school and outside of school, because that helps them see their work in class, their views on students, their thoughts in a different way, and as a consequence, tend to change their actions.

Teachers and schools need to take a step towards partnerships with students, parents, local communities, and companies, and become an integral part of an open learning system, i.e. a system where teachers, students and members of a broader community have the opportunity to exchange/share knowledge and experiences, aiming to improve the quality of learning. This is the reason why professionalism among teachers is becoming an important condition for successfully confronting changed circumstances, because only a teacher capable of deep and situation-appropriate professional judgment (deliberation), who has mastered a wide range of methods and approaches, can be successful.

In this context, it is important to emphasize that at the level of the system/country, activities need to be conducted (continuous professional development and learning, accreditation of programs, advancement, etc.) that enable a paradigm shift from a teacher who is good at teaching to a teacher who encourages learning.

Elements of the continuous professional development system

Continuous professional development of teachers is a process of education, teaching, learning, and providing support, which takes place either in an educational institution or outside of it, and includes qualified educational professionals. The purpose of this process is to promote learning and develop teachers’ professional knowledge, skills and principles, which help with the selection and implementation of changes in their own method of teaching and learning, with the aim of providing more effective student education, thus achieving the agreed harmonization between the needs of an individual, school and state (Bolam, 2002).

Effective teaching is in the center of a successful educational system. It has long been recognized that supporting professional development of teachers from the beginning to the end of their careers is of decisive importance for motivating a high-quality teaching process. Teachers’ professional development allows them to develop knowledge, skill and practices that are necessary for them to be effective in their educational role, in providing support to collaborators, improving their profession, and gaining confidence, status and self-efficacy to do their job with a high level of professionalism.

While the initial (pre-service) training ensures that the new teachers are competent and prepared to start their work, the fact remains that it cannot prepare teachers for all challenges they will face in their career. Thus, continuous professional development is of vital importance for teachers as it allows them to refresh, develop, expand and upgrade their knowledge to remain up to date with developments in research, work tools, practices, and students’ needs. Growing diversity among students, greater integration of students with special needs in regular schools, the ever-increasing use of information and communication technologies, as well as the changing requirements of modern jobs demand that teachers continue to grow professionally. Professionalism among teachers is achieved and maintained through the process of continuous professional development or professional growth, which includes education, training, learning and providing support to teachers.

A quality and effective CPD system:

* is content oriented,
* includes active learning that relies on adult learning theory,
* supports collaboration as a part of everyday work,
* uses effective practice models,
* supports collegial and professional support,
* enables feedback and reflection,
* is sustainable.

The main characteristics of such a system are:

* transparency and control,
* quick and effective methods for introducing new programs,
* transfer of new knowledge from different professional fields and scientific disciplines in school practice,
* teachers’ influence on the content and quality of CPD (system of recognizing teachers’ needs),
* greater accessibility in school (in terms of time and place of its provision),
* integration with the EU trends of improving quality of teacher education,
* clearly identified procedures for monitoring and evaluating the practical impact of the program.

It has been proven that professional development of teachers that stems from their own desire for new knowledge enables a change in quality of teaching in the classroom. To work successfully in the classroom, a modern teacher needs support in establishing and upgrading pedagogical, psychological, didactic and methodological competencies. This is why it is important to formulate a system to support teachers’ continuous development that will help them upgrade their own knowledge.

Effective CPD needs to be connected at a systemic level to program accreditation and the rulebook on teacher advancement, and to be mutually complementary – advancement motivates teachers to develop in professional terms, while accreditation enables teachers to use development programs for their development under equal conditions and with same rules. This is why, in order to achieve the above stated characteristics of CPD system, it is necessary to have a legal basis (e.g. a rulebook) and a designated professional body (e.g. Program Council[[3]](#footnote-3) – PC). For the sake of ensuring professional views, transparency and control of the system, the PC should comprise representatives of the professional community from pedagogical faculties, Pedagogical Institute, MoE, vocational associations, education trade unions, etc. The PC is appointed by the Minister of Education, and supported by the relevant professional body within the Ministry (e.g. sector/department for human resources development).

The primary tasks of the PC might include:

* Preparation and adoption of guidelines for the continued development of educational professionals (identifying priority areas of CPD),
* Performance of tasks related to the preparation and implementation of public calls for proposals of programs, and submission of the selected programs to the Minister for approval,
* Proposing to the Minister the participation in program financing or co-financing,
* Cooperation with expert bodies appointed by the Minister that operate in the field of education, and with institutions of higher education that implement publicly valid study programs for training of education professionals,
* Adoption of reports on the evaluation of programs and systems of continued education and training, etc.

The first step when defining the CPD is to identify the objectives and needs of the education system. Useful sources for this purpose certainly include the existing legislation, strategic documents in the field of education, analyses, results achieved at international tests (TIMMS, PISA), statistical data on education, international trends such as the EU guidelines, OECD, and similar. Setting CPD priorities is planned for a period of at least three years. In addition to those listed, another important source is the needs of the schools i.e. teachers. The research study GUIDELINES for improving the teaching profession (2020) identified the educational needs of teachers and expert associates in primary and secondary schools in Sarajevo Canton (SC). The results showed what the teachers had not been satisfied with to date, and in which directions the topics, work methods, etc. needed to be upgraded.

After the process of setting objectives and identifying needs, follows the planning, i.e. specifying the area that would be included in the development program. The CPD programs should deepen and build on the teachers’ competences in the following areas:

1. Effective teaching process:
2. Planning and programming (mastering the main principles and planning procedures, and implementation of the teaching process),
3. Monitoring and evaluation (appropriate use of various methods for monitoring and evaluating students’ knowledge, in accordance with the objectives and advantages of provision of constructive feedback);
4. Creating a conducive learning environment (providing a safe and motivating learning environment that makes students feel accepted, their diversity respected, and that promotes independence and responsibility; establishment of an optimal learning environment by using diverse learning methods and strategies that encourage mental activity of the students), etc.[[4]](#footnote-4)
5. Cooperation with family and community:
6. with family or other individuals responsible for the students;
7. other school employees;
8. establishing partnerships and cooperation with other schools, institutions in school environment, and educational experts at local, regional, national, European, and broader global levels.
9. Professional development and learning:
10. ability to critically review and evaluate their own work;
11. improved quality of their own work through self-evaluation and continued education and training;
12. ability to participate constructively in research and development projects aimed at improving the quality of educational work;
13. awareness of the ethical dimensions of their activities, and their consideration.
14. Organizational skills:
15. good understanding of their vocation and regulations applicable to school operation;
16. successful time planning and management;
17. mastery of organizational and administrative tasks related to planning, implementation, monitoring and evaluation of the teaching process;
18. provision of effective leadership to students, classes, and coordination of teaching staff in the class;
19. team work skills and ability to effectively solve problems.
20. Integration into school policy:
21. understanding system policies;
22. engagement with systemic curricular changes;
23. participation in international space.

At the phase of initial (pre-service) faculty education, a stronger emphasis has been placed on achievement of objectives of effective teaching (core and practical competences), and to a somewhat lesser degree, the objectives from other areas. Continuous professional development provides, first of all, reflexive competences (not included in the Teacher Qualification Standard TABLA) and are primarily aimed at the implementation of objectives of cooperation with work and social environment, and the development of professional learning skills, organizational skills, and integration into school policy. Objectives in the area of effective teaching processes are also developed, but in the direction of their deepening, upgrading and updating, which is connected to the work experience of teachers.

Prior to issuing public calls, criteria and standards for program selection need to be agreed with the program providers (more in the document *Approach to setting up a professional development program – PU2).* The set of programs shall be selected based on a public call (thus achievingobjectives of transparency and competitiveness), which will, among other things, take into consideration the following criteria:

* alignment of the program with CPD objectives,
* alignment of the program objectives with the expected effects in practice,
* relevance in the field of education – needs of the system,
* needs of practical work,
* link between program elements,
* inclusion of contemporary vocational and scientific knowledge,
* integration of theory and practice.

In addition, the program duration needs to be specified, as well as the target audience for the different programs. The programs may last 8 to 40 hours. The function of the program may be related to programs of professional development and special programs.

Programs of professional development implement teacher training on how to use new or amended/ upgraded curricula and teaching plans, upgrading a disciplinary, vocational and professional knowledge, learning about contemporary educational practices and successful approaches to professional mastering of educational processes, and for achieving greater effectiveness and quality of work. Besides the teachers, the programs should also include expert associates and directors/managers of educational institutions.

Special programs are aimed at training teachers to implement the cascade training system (train-the-trainer system). This is a good solution for:

* situations when it is necessary to provide comprehensive training to all teachers of a specific subject or a number of subjects (e.g. when introducing new curricula), and the capacities of the competent institutions are not sufficient,
* training a greater number of teachers in complex knowledge and skills linked to contemporary approaches, necessitating a direct link with the practice in order to achieve an effective teaching process. An example of such a program is presented in Attachment 1.

The “teach-the-teacher” approach, i.e. the “cascade system” proved to be very effective in Slovenia, on the condition that the teacher trainers were selected on the basis of their references and provided with good train-the-trainer training. Over the period 2004-2006, the cascade system was used, inviting the participation of teachers who teach other teachers, and the expert-teachers who had been trained by the Educational Institute on how to provide seminars. Over three years, the Educational Institute trained 1,462 multipliers (ToT trainers), who have, together with the advisors from the Institute, prepared 127 new seminars and provided them to a total of 33,692 teachers in 1,577 sessions. The multipliers of the first and second rounds (2004 and 2005) implemented the seminars that were published in the catalogue of development programs, leaflets and posters, and on the Institute’s web page. In 2006, the Institute organized the multipliers into a network to evenly cover the needs of all pre-primary and primary schools. This approach has satisfied the right of schools to plan their teachers’ training in accordance with their needs, the right of individual teachers to select the content they are interested in, and the needs of the system, which strives to implement certain content in the entire field of education. Using the “teach the teacher” approach also helps diminish teachers’ resistance to professional development, which they often verbalize as “the trainers have never been to a class and do not know how the reality of what it takes”; “the lecturers only lecture the theory- let them go to class with that”; “Let the teacher show us how they would do it in class”, etc. On the other hand, the teacher trainers (the multipliers) transfer their experiences from direct work with students, linking them to the theory and modern trends, thus growing professionally themselves.

Special programs may last longer than 40 hours.

In terms of their function, programs may be grouped into two levels, where the criterion is prior knowledge of the participants:

1. basic programs (for teachers just starting, or those who don’t have knowledge of a certain topic);
2. advanced programs (for more experienced teachers, or teachers who have undergone prior training).

The program providers may be faculties, pedagogical institutes, international institutions, etc. (the number of possible providers shall depend on the available budget, what programs the ministry of education would finance, and to what degree).

The conditions the training providers must meet need to be specified. For example:

* offer of appropriate content related to the CPD objectives;
* effective organization of program implementation (accessible to schools in terms of time and venue) and existence of a system to demonstrate teachers’ active participation in the training,
* prior experience in provision of programs,
* positive evaluation of their implementation of earlier programs, etc.

At the end of programs, the provider shall issue a certificate of completion to the participating teachers. Such certificates may be used as evidence for teacher promotion.

For the experts, program providers, the following criteria may be required:

* published articles in a specific area,
* active participation in national or international conferences, seminars, workshops (e.g. in the last five years),
* performance of programs in schools, that are led by competent institutions and/or international institutions,
* performing other CPD activities (writing manuals, participation in working groups established by competent institutions, etc.)
* experience of work in schools (e.g. 15 years).

At the stage of planning the program, their weight in terms of number of points needs to be specified depending on the program duration. For example:

8-hour program – 0.5 points

16-hour program – 1 point

32-hour program – 1.5 points

40-hour program – 2 points

48 or more – 2.5 (or 3 points).

In Slovenia, the points were assigned in the following way[[5]](#footnote-5):

|  |  |
| --- | --- |
| Number of hours | Number of points |
| 8 - 15 hours | 0.5 points |
| 16 - 23 hours | 1 point |
| 24 - 29 hours | 1.5 points |
| 30 - 46 hours | 2 points |
| 47 - 63 hours | 2.5 points |
| 64 - 79 hours | 3 points |
| 80 or more hours | 3.5 points |

The teachers participating in such programs can use the points for professional advancement.

Other very important elements that provide quality, long-term provision of CPD at the level of the system include evaluations of the programs, catalogues of selected (accredited) programs, and a database (registry).

The evaluation of programs is necessary for the purpose of:

* ensuring objectivity in the selection of the program providers, and
* motivating the program providers to upgrade their performance in future years.

The evaluation program includes the tools (e.g. online survey) used by participants in the program to evaluate the program on their end. Completion of the survey is one of requirements for obtaining the certificate. The evaluation methodology is prepared by the Ministry of Education or the Program Council, and the program provider is responsible for its implementation.

The registry of accredited professional development programs (catalogue of programs) may include: sequence number, name of the program, name of provider of the development program, educational area under which the program has been classified, number of hours of the program, target group, obligations of the users, attendance sheet, and date of program accreditation.

Teachers from CS also pointed out the importance of the professional development programs, emphasizing that it would be extremely important to establish a catalogue of topics that are related to educational needs of teachers and educational problems. Teachers emphasize the importance of preparing a catalogue of topics with a tentative calendar for the year, and the catalogue of providers includes the teachers from faculties and teachers from primary and secondary schools (*Guidelines for improvement of teaching profession, 2020).*

An integral part of the Registry is the evaluation report for each program. Another integral part of the Registry is the complete documentation the authors have submitted in response to the call[[6]](#footnote-6). The Registry is administered by the Ministry of Education.

The implementation of CPD may be divided into the following key phases[[7]](#footnote-7):

Phase 1 – Analysis of needs for professional development – current status (PI and MoE)

1. Exploring the teachers’ needs (questionnaire)
2. Data analysis
3. Data processing and reporting
4. Proposed topics

Phase 2 – Developing a program of professional development (providers)

1. Measurable general objective of the program
2. Target audience
3. Modules and objectives of each module
4. Topic and providers (references)
5. Defined learning outcomes
6. Forms and methods of work (group work, presentations by the trainers, presentations by participants),
7. Recommended reading and materials for trainees,
8. Duration of the program by modules in hours (seminars),
9. Individual work (instructions for development of individual work of participants; practical implementation of theory in school, school network or study visit to one of the schools)

Phase 3 – Development of financial plan (ministries of education)

1. Methodology for calculating the cost of training

Phase 4 – Implementation of the professional development program (MoE and PI)

1. Public call for the educational institutions and individuals
2. Selection of participants in the professional development program
3. Implementation of the program in selected educational institutions and individuals

Phase 5 – Transparency of professional development program outcomes (presentation of outcomes) – sharing experience and knowledge (MoE and PI)

1. Organization of thematic conference for presentation of individual works
2. Awarding certificates to participants in the programs
3. Publication of selected individual works

Phase 6 – Evaluation of professional development programs (MoE and PI)

1. External program evaluation and recommendations for future work.

The program of training the teacher-trainers, designed in such a way to ensure common understanding of fundamental concepts related to development of STEAM approaches and PPDM competences, and to equip the students to perform training in the TABLA project, includes the main components of the CPD and is an example of a coherent and well-rounded program of professional development for teachers. The program covers 4 of 5 above listed key areas of deepening and upgrading teacher competences. The proposed topics, in addition to specific objectives related to subjects, cover specific objectives in the 4 areas. Specifically, in the area of *Effective teaching,* the points a, b, c, f, g, h, and k are covered; in the area *Cooperation with family and community,* points b and c are covered; in the area *Professional training and development,* points a, b, and c are covered; in the area *Organizational skills,* points b, d, and e are covered.

The program incorporates key EU guidelines: a focus on sustainable development, teamwork, active roles of educational professionals who continuously learn and introduce innovations and best practices from other countries, and encourage deliberations and cooperation. Formative assessment, evaluation of knowledge and of innovative learning forms and teaching methods, activating higher thought processes in learning processes, and contemporary approaches to teaching in innovative learning environments that extend beyond the classroom, and where the acquisition of pedagogical digital competences by teachers and ICT have an important role, are also among the main topics.

Also, the STEAM program approach meets the majority of criteria for professional development, expectation and teachers’ needs as presented by CS teachers in a focus group analysis (*Guidelines for improving the teaching profession, 2020):*

1. collaborative learning and teamwork, as well as sharing experiences among teachers from different schools and environments,
2. reflection and self-reflection,
3. focus on creative workshops, motivational lectures, and professional topics of the lecturers on new scientific achievements,
4. importance of studying pedagogical-psychological and didactic-methodological topics,
5. workshops and projects as models of interactive learning,
6. sharing experiences with teachers from within the country and from other countries, attending classes, and various forms of public participation and presentation,
7. work in small groups so that the topics would be studied through a modern organization of the teaching process,
8. sharing experiences and cooperating with teachers of different subject areas as a contribution to better correlation of subjects and contents.

This is why the STEAM program is one of the priorities, and by its characteristics, is a special program because it aims to train teachers to carry out replicative training (cascade system, train-the-trainers) 16 days (128 hours) long. The number of points the teachers would be given upon completion of such a program would be used in their professional advancement. The Ministry of Education could finance this program in totality because of its importance in the development of teacher training.

The conditions for a teacher’s inclusion in the program could be as follows:

* implementation of projects in schools that are led by competent institutions and/or international institutions,
* implementation of other CPD activities (e.g. writing manuals, engagement in working groups appointed by the competent institutions, etc.),
* participation in prior professional development programs on similar topic (ENABLE, …),
* professional experience in school (e.g. 15 years).

We may conclude that the STEAM program meets the criteria of program selection as specified in the part discussing the public call and selection criteria, as follows:

* alignment of the program with CPD objectives,
* alignment of the program objectives with the expected effects in practice,
* relevance in the field of education (needs of the system),
* needs of practical work,
* link among program elements,
* inclusion of contemporary vocational and scientific knowledge,
* integration of theory and practice.

Topics for the professional development system - ToT Program for the STEAM approach to teaching and PPDM competencies development

Later in this document, we propose topics for one of the possible professional development programs. The program aims to train the teachers to deliver replication programs for other teachers and lasts 16 days. Individual topics or combinations thereof can be delivered independently, in a time frame of 8, 15, or more hours, as professional development programs. These topics can be further deepened, supplemented, and upgraded in the implementation phase. Based on the needs of practice, systems, and/or modern professional and scientific knowledge, topics can be updated, changed, or new ones can be added.

The proposed topics are:

1. Modern teaching methods and teaching process planning techniques
2. Collaborative approach and interdisciplinary networking
3. Formative assessment and evaluation of student achievements
4. Coaching and mentoring
5. Professional communities.

The topics were selected by experts from the Education Institute of the Republic of Slovenia and experts from BiH, included in project component 2. The topic selection process was complex because it was necessary to take into account the context of education in BiH, modern approaches in the international environment, and trends in continuous professional development (CPD). The choice of topics was primarily determined by the initial university education of teachers with a focus on achieving objectives in the field of effective teaching (core and practical competencies), and to a lesser extent, objectives in other areas. The choice of topics was also determined by continuous professional development, which provides primarily reflexive competencies (not contained in the Teacher Qualifications Standard), and is aimed primarily at achieving objectives in the field of cooperation with work and social environment, the development of professional learning skills, organizational skills, and involvement in school policy. The proposed topics would lead to achieving objectives that are not directly related to the initial university education of teachers. In other words, we upgrade and deepen those objectives. Each of the proposed topics is broken down into sub-topics that target individual broader topic areas. At the later stage of implementation and development of the professional development system, the sub-topics would change, be deepened, etc. The program is conceived as a whole, because the topics and sub-topics are connected, but not repetitive. They are mutually intertwined and complement each other, hence they should be “read” together.

1. Modern teaching methods and teaching process planning techniques

**Why?**

Contemporary expert discussions on knowledge and skills for the 21st century encourage students and teachers to develop scientific and mathematical literacy (and, within that, the competence to look for missing information and be scientifically and mathematically creative in new areas of knowledge) and systemic thinking. Underlined are also the skills of collaborating in problem-solving situations, transfer of knowledge, interpersonal and self-directed learning skills (Partnership for 21st Century skills, 2007).

One of the most cited tools and approaches for achieving such knowledge and skills in education (especially in the STEM subjects) is inquiry-based education - IBE (European Commission, 2007; National Research Council, 2000 in Pedaste et al., 2015).

As John Hattie says, it is not important what the teacher teaches, but how he teaches. That is why it is important to establish a system in which teachers are ready to learn something new every day and try new approaches and tools.

When teaching, it is important to help students develop acceptable mental models. Models of real situations are much more effective if, in addition to authentic representations of these situations, they also contain appropriate visual representations and their abstract versions in symbolic form. Visual representations play a very important role in developing in-depth conceptual understanding. The PPDM potential of using modern technologies is very significant because the multimedia environment, which is also interactive (Spector, Christensen, Sioutine and McCormack, 2001) can have a positive effect on cognitive engagement, reflection, and feedback (4K) of students. The relevant literature emphasizes, for example, that computer simulations have great potential to evoke students’ interest and motivate them to learn (National Research Council, 2011). Moreover, Wieman, Adams, and Perkins (2008) point out in one of their studies that students expressed a strong “preference for simulations over the real equipment” (p. 683). An interactive multimedia learning environment facilitates the learning process through greater student engagement, leading to deeper cognitive processes and resulting in the active building of new knowledge (Kalyuga, 2008).

**What aims are pursued?**

Support to teachers in continuing education and daily improvement of classroom work.

The objectives are to:

* review, refresh, supplement, update, and adopt modern teaching methods in the STE(A)M subjects (especially IBL), and improve thoughtful planning thereof,
* underline significant competencies/skills for the 21st century, 4K, and encourage their development through education,
* train teachers to optimally use ICT in the planning and delivery of the teaching process and meeting the objectives of distance learning.

**Sub-topics**

1.1. Importance of STE(A)M/ 4K/ PPDM

Brief description:

Good knowledge of STE(A)M/4K/PPDM is important for the professional development of teachers in a given subject area, but also more broadly, for a cross-curricular and interdisciplinary approach.

The desire is to change the role of a teacher from a lecturer to a researcher, and to raise the awareness of the meaning of all “components” of competencies: content/factual knowledge, process knowledge, and relationships. To this end, the learning process of each student, their activity, and the development of different skills are also important.

Objectives:

* define the meaning of STEAM/4K,
* emphasize the interdisciplinary meaning of STEAM and the role of knowledge processing,
* learning about the possibilities of upgrading PPDM competencies in their professional development,
* think about how to transform into the role of teacher-researcher,
* look for ways to encourage students to actively explore.

1.2. Learning outcomes and a Common Core Curriculum

Brief description:

Remind the participants of the CCC, and verify through the workshop whether they all understand the structure of the document, i.e. the meaning of the educational area, the subject, area, component, outcome, and indicator.

Objectives:

* understand why the CCC is an important document for changing educational practice,
* check one’s own knowledge of the document itself,
* get better acquainted with the structure of the document and navigate better through the document,
* speak clearly about the advantages and disadvantages of the document.

1.3. Teaching approaches, which include 4K/PPDM skills in the STE(A)M subjects with the application of modern technologies

Brief description:

The subtopic includes approaches that encourage the development of PPDM competencies and four key skills (4K) through modern teaching approaches, especially inquiry-based learning (IBL) and the optimal, thoughtful use of modern technology. It also indicates the possibilities of alternative delivery of teaching (in-person and online).

Objectives:

* think about how to integrate 4K / PPDM skills into the STE(A)M subjects,
* study contemporary approaches in the STE(A)M subjects, especially inquiry-based learning and using of modern technologies,
* planning of STE(A)M teaching activities with the help of ICT, etc.

1.4. Planning, conducting, and monitoring classes (Annual work program, reports ...)

Brief description:

Planning is a necessary part of the work of teachers and the teaching process. It is done at several levels, from an annual work program (AWP) to individual teaching activities. Creative planning, which requires teachers in the STE(A)M subjects to use an interdisciplinary approach and include modern approaches (e.g., IBL), 4K/PPDM, and take account of learning outcomes, is very important in this process.

Objectives:

* understanding of learning-outcome based planning,
* overcoming the traditional way of planning,
* discussing the elements of the annual work program (AWP) and instruction planning on a monthly, weekly, and daily basis,
* developing an annual work program (AWP) and instruction plan on a monthly, weekly, and daily basis in the STE(A)M subjects, based on learning outcomes and 4K / PPDM approach,
* looking for opportunities to change one’s own planning practice through observing and monitoring the instructions of other teachers (teacher-to-teacher observation).

1.5. Additional specialized workshops for STEM and ART (optional)

Brief description:

Organize parallel workshops for STEM and art subject groups in which the participants, each in their respective field and through specific activities involving 4K of students, will master different methods, techniques, and strategies that show meaningful learning-outcome-based instruction.

Objectives:

* participants master new techniques, methods, strategies,
* apply them to the subjects they teach,
* apply them in the STEM or art subjects (selection of methods, strategies, techniques that enable integrated teaching) at the level of planning,
* apply them in classrooms i.e., in classes following the training.

2. Collaborative approach and interdisciplinary networking

**Why?**

Although a prerequisite for quality interdisciplinary cooperation, the collaborative approach is not adequately represented in the education systems in BiH. Interdisciplinary teaching implies the integration of methods and the synthesis of different perspectives from relevant subjects, and not only the observation of a certain problem from the perspective of another subject. To be performed correctly and purposefully, this kind of teaching requires cooperation between several teachers.

**What aims are pursued?**

Help teachers to build (strengthen) professional learning communities in their schools and encourage them to go beyond the methods and transfer of knowledge aimed solely at teaching the subjects for which they are qualified, and prompt them to continuously work on their own professional development. Develop a holistic understanding of disciplinary concepts, increase cooperation and foster collegiality in fulfilling their obligation and responsibility for the delivery of quality content, skills, and processes; and enable efficient time management.

**Sub-topics**

2.1. Presentation of OTC for STE(A)M competencies with KBE sectors.

Objective: Teachers understand the principles underpinning the OTC for STE(A)M competencies with KBE sectors, the link with the learning outcome-based CCC benefits, and assistance provided by the use of OTC.

2.2. OTC analysis by case

Objective: Teachers look at the possibilities and limitations in the implementation of the STE(A)M approach within the existing curriculum, and successfully use the ideas offered by OTC, links with KBE sectors, and learning-outcome-based CCC for different disciplines.

2.3. Cross-curricular/interdisciplinary topics

Objective: A step beyond correlation - how to create topics that are used as a means of joint teaching? Developing a model for setting cross-curricular/interdisciplinary topics. Redirecting content linking to linking of learning outcomes. AWP as a support in bringing a new approach to life.

2.4. Learning outcome-based STE(A)M lesson planning (interdisciplinarity)

Objective: Based on the selected cross-curricular/interdisciplinary topic, teachers make STE(A)M lesson plan(s). They become aware of the need for peer cooperation and their own additional professional development.

2.5. Teacher cooperation in problem-solving - STE(A)M projects

Objective: Through a collaborative approach, teachers learn how to create an interdisciplinary project, and select topics and questions for students to encourage 4K-based learning. Through working together, teachers become aware of the possibility of their own additional professional development.

3. Formative assessment and evaluation of student achievements

**Why?**

Contemporary research by many authors in the field of education (Hattie, J., Timperley, H., William, D.) draws attention to performance indicators that have a proven impact in the school environment in terms of the effectiveness of learning and teaching. From the student’s point of view, we are talking about the active role of students in the whole learning process. From a psychological point of view, the purpose of learning and performance criteria is to prevent or reduce students’ fear and anxiety. At the same time, a student who understands what needs to be learned and what knowledge is required to be successful is likely to be more efficient and engaged in the learning process. On the other hand, teachers will increase the efficiency of teaching and will monitor the work of each student more thoroughly.

With formative assessment, it is easier to develop empathy, flexibility, and create a stimulating learning environment. Formative assessment provides both teachers and students with a path to better and more lasting knowledge. It is important to change the current concept of assessment, which, most often, comes down to giving a numerical grade without any accompanying content, and it is often not clear to students what they have done well and, in particular, what they need to improve. The numerical grade is often used as a punishment for students, rather than feedback that will clearly show where the student currently stands. Through formative assessment, the student receives feedback from the teacher and his/her peers and understands what needs to be done to progress.

**Purpose and objectives:**

* train teachers to understand the meaning of formative assessment,
* know the theoretical assumptions (differences comparing the current grading system),
* understand the different role of teachers,
* adopt new techniques/tools that help in formative assessment,
* master all segments of formative assessment,
* apply, try in their own teaching practice during the training, and discuss classroom experiences,
* train teachers to show students how they can evaluate each other (peer evaluation) and self-assessment (development of co-responsibility in the learning process),
* establishing a stimulating learning environment in the classroom in which students’ voices are heard.

**Sub-topics**

3.1. How are formative assessment and summative assessment linked?

Brief description:

Formative assessment is a bridge between learning and teaching (Wiliam, 2011). The teacher teaches the student and supports his/her learning by constantly monitoring his/her progress and planning and adapting lessons according to the feedback he receives. Feedback plays one of the key roles in formative assessment, and its large impact on student performance was confirmed by Hattie in his 2008 meta-research.

Through formative assessment, we educate students to be able to self-direct their own learning. Students with a developed ability to independently manage their learning time set higher goals and are more effective. They persevere despite the obstacles and take greater responsibility for their learning (Holcar, 2016). According to Holcar, another advantage of formative assessment is that the students can demonstrate their knowledge in a variety of ways, and additional learning resources in the form of peer learning are activated.

There is a great difference between formative and summative assessments, and the crucial difference is manifested in the process of obtaining grades. Formative assessment is mainly aimed at acquiring process knowledge by which the student builds his/her path to the final goal. It is important to enable the student to upgrade his/her knowledge. In formative assessment, the teacher monitors students’ progress and adjusts his/her instruction based on the feedback. Sharing feedback between students and teachers is very important for improving student performance. Formative assessment is a prerequisite for evaluation. In summative assessment, evaluation is the ultimate goal and key measure of student knowledge.

Objectives:

* get acquainted with the possibilities of organizing instruction focused on process orientation,
* use elements of formative assessment to improve one’s own teaching,
* know the ways to collect different learning evidence for each lesson/set,
* look for ways to create a stimulating learning environment.

3.2. 4K competencies and formative assessment

Brief description:

Formative assessment, with its orientation and diverse array of tools, encourages the development of a variety of skills such as communication, critical thinking, creativity, and collaboration. Getting to know the students we teach, listening to them, understanding their needs and desires - is the core of formative assessment. By placing the student at the center of his or her own learning, we encourage him or her to use a variety of skills. This changes the role of the teacher in the process. The teacher is no longer someone who knows everything and his/her mission is to educate the student. The teacher becomes a mentor to the student on his/her path of acquiring knowledge.

Objectives:

* look for ways to include elements of formative assessment in the classroom work and develop 21st-century skills in each student,
* learn the skills of communication, critical thinking, creativity, and cooperation and look for ways to include them in the planning of our own teaching,
* learn the importance of the active role of students in planning their own paths to knowledge,
* look for ways to create a stimulating learning environment.

3.3. Developing proposals for possible formative assessment matrices

Brief description:

The matrix should contain outcomes and 4K skills (where possible) related to monitoring and activity data, and preferably rubrics with the outcomes graded according to the levels of student achievement (e.g., three levels);

Using the materials from the previous workshops, in which the teachers have already designed the lessons (which they have tried in the classroom), and adding the matrices for formative assessment as an addition. Use and modify matrices for formative assessment from previous teacher training in BiH.

Objective: teachers will be able to incorporate matrices for formative assessment in their lesson plans.

3.4. Integration of monitoring and evaluation methods from different STE(A)M subjects

Brief description:

In the world we live in, there are fewer and fewer challenges to which knowledge from only one professional discipline can respond. The workshop enables teachers to find ways to jointly plan instructions, with the participation of teachers from different professional disciplines.

The purpose of the workshop is to establish a connection between teachers of social sciences and natural sciences in search of common learning problems. Linking knowledge is also a fundamental skill of formative assessment focused on the student and his/her knowledge.

Objectives:

* the participants of the workshop will look for ways to plan the process in cooperation with teachers of other professional disciplines and connect knowledge from the subjects of social sciences and natural sciences,
* evaluate their own practice and classroom work process,
* learn the methods offered by formative assessment for interdisciplinary work planning.

4. Coaching and mentoring

**Why?**

If teachers are aware of what they are doing and how they are doing it, they can really make a change in their teaching. The topic is important because no matter how much teachers work with children in the classroom on a daily basis, they still do not have the skills to run workshops attended by their peers. On the other hand, the mentoring process in previous projects was most often reduced to formal monitoring. Mentors must learn how to carefully observe the practice and give quality feedback and offer concrete help.

**What aims are pursued?**

The aim is to enable students to conduct structured and meaningful “replicated” training courses for teachers and learn how to properly mentor colleagues during their work in the classroom.

**Sub-topics**

4.1. Understanding the adult learning process and the basic andragogical principles of teaching

Objective: Understand the adult learning process as well as the role of lifelong learning in teacher professional development.

The 6 principles of andragogy (by Knowles): experiences, readiness to learn, problem orientation, intrinsic motivation, need to know, and self-concept. What is coaching and what is mentoring?

4.2. The role of PPDM components in the professional development of teachers

Objective: Understanding the role of PPDM components in teacher professional development.

What are the competencies of teachers? What are the key competencies according to the European Parliament?

4.3. The role of teachers in the process of educational change - how ready are we to change?

Objective: Teachers’ understanding of their role in the process of educational change, and why education is changing.

4.4. A day for simulation (replication) of training

“Mentoring is to support and encourage people to manage their own learning so that they may maximize their potential, develop their skills, improve their performance and become the person they want to be.” (Eric Parsloe, The Oxford School of Coaching & Mentoring)

Process description:

* teachers use coaching and mentoring skills and competencies in the simulation process, identifying their advantages and disadvantages,
* participants use materials from previous training, and each trainer gets a task that he/she performs in front of the others and reflects on his/her work, while participants give feedback to the trainer,
* Group work in such a way that each trainer takes turns to present the topic (at the end of the day, each group makes a summary),
* training simulations are done during the training, and mentoring simulations are done in school between two blocks of seminars.

Basic starting points when preparing training:

* What are the expectations of the teachers coming to the training? In what environments do they work?
* What problems do they face?
* Why are some training courses successful? What questions do I ask before, during, and after the training?
* Why are some training courses unsuccessful?
* What helps to apply the acquired knowledge in practice?
* What do participants expect from the trainer?
* What are my expectations?
* Principles of successful professional development
* Mentor skills and knowledge
* Benefits of mentoring
* Self-assessment of mentoring potential

4.5. Development of an action plan for coordination and mentoring

Objectives:

* train teachers to reflect on their own teaching, as well as the work of other teachers,
* critical reflection on the learning and teaching process itself,
* train teachers to develop an action plan for replication training for other teachers.

4.6. Integration of knowledge and skills in professional teacher communities

Objective: Provide support to teachers in terms of practical examples of training and STEM/ 4K/ PPDM instruction.

5. Professional communities

**Why?**

Given the complexity of the teaching process, teachers should be prepared for lifelong learning and adapt their competencies to changes within the profession, but also in society in general. Today, however, teachers perform a lot of formal, administrative tasks, which take a lot of time. At the same time, this form of tasks and duties limits the creativity of teachers and the application of active teaching methods.

In everyday work, and especially in the processes of change and reform, the support of the professional community, professional institutions (teaching faculties, Educational and Pedagogical Institute, Ministry of Education, etc.) but also of the school community (principal, pedagogical and psychological services, peers, etc.) is very important.

According to Singh and Billingsley (2010), principal support directly affects teacher’s commitment, but the support of other teachers has the greatest direct impact on teachers’ professional commitment. These findings point to the importance of the role of principals in strengthening teacher commitment and the impact that principals can have on peer relationships between teachers.

Through professional learning, teachers develop their professional knowledge and obtain critical information and knowledge in their professional field. Teachers involved in different professional learning communities are more professional and work better, encourage students, and provide a high-quality learning experience, enabling students to reach their potential.

Parker, Patton, and O’Sullivan (2015) in their study identified basic steps to improve teacher work: critical dialog (the process of acquiring knowledge through communicative interactions), sharing materials (testing classroom practice and sharing ideas with the wider teacher community), and student communities (cooperation on a common problem/idea).

Special emphasis should be placed on empowering teachers to express with more confidence their opinions, attitudes, perceived problems at all levels concerning the curriculum, work with students, relations within the team, relations with the school administration, parents, and the wider community, etc. When presenting the problems, they can and should offer their own opinions and suggestions on how they can be solved.

In the professional community, it is necessary to constantly discuss a particular problem with other fellow teachers, or others, with a clear attitude, argumentation, and proactive approach, and where dissent, if any, is welcome and the environment for opinion and view sharing is safe. The aim is to have all these exchanges translated into a solution that will be implemented and become a new standard and mode of cooperation, i.e. a rule rather than an exceptional activity by a few like-minded teachers (based on their friendship rather than on professional arguments).

**What aims are pursued?**

A stimulating work environment in which teachers have support would positively influence the creativity, motivation, and commitment of teachers, the implementation of a constructive approach in the teaching process, and encourage teachers to pursue lifelong learning and peer support.

**Sub-topics**

5.1. Support for professional development of teachers

Objective: Assist school principals and management to acquire skills of supporting the professional development of teachers. How to manage a school in which teachers together plan and perform classes and monitor student progress?

5.2. Support for networks between schools and other institutions

Objective: Establish cooperation between schools, representatives of the Ministry of Education, and the Pedagogical Institute, with the aim of exchanging good practices and positive experiences and supporting the teachers’ professional development.

Conclusion

Activities within the TABLA project follow up the project interventions within the BiH education system and are related to documents that change the education systems in BiH. As in the ENABLE project (teacher education in STEM approach), TABLA (through education in STEAM approach and support in developing 4 key competencies - cooperation, critical thinking, creativity, and communication) offers an opportunity for educational systems to train teachers for joint planning and teaching, designing modern approaches to learning and teaching through IBL, problem-focused teaching, and the development of children’s abilities in full capacity.

It is important to note that in the TABLA project (as well as in the ENABLE project and the project of Strengthening Social Inclusion for equal and quality education to support the successful development of children in the Northwest Balkans, i.e. the segment of teacher training in the application of learning outcomes in the field of mother tongue), the teacher training is linked with the Common Core Curricula with Learning Outcomes (APOSO, 2018) which, according to existing legislation, should be the core of all curricula in the future.

TABLA can be particularly useful for the Sarajevo Canton, where a proposal for 22 subject curricula has been developed (based on learning outcomes). By educating the teachers, the project can help education authorities to plan the piloting of individual subject curricula. The subject curricula were developed with the support of the OSCE Mission to the BiH program *Curricular reform to quality education.* As part of this program, two documents were developed: *Towards education that makes a difference - Report on the analysis of documents that determine primary and secondary education in BiH* and *Basic assumptions for the development of subject curricula*. In addition to the Sarajevo Canton, the Zenica-Doboj Canton has been working on drafting its curricular documents since October 2020.

In addition to teacher education, the TABLA project, in cooperation with the competent education authorities, proposes the necessary amendments to the regulations on teacher advancement and suggests the introduction of a teacher accreditation system to afford the teachers who undergo training under this project systemic support in further educational reforms.

The proposed amendments to the regulations on in-service training, as well as proposals related to the establishment of an accreditation system for in-service training programs, aim to offer a possible way of linking the relevant aspects of in-service training to motivate teachers, let them know where they currently stand, what is expected of them, and how they can advance in their careers. The proposed training topics, which can be incorporated into the future system and as such accredited and recognized by the regulations, can be basic training that addresses contemporary topics in the field of education. Teacher trainers (mentors), who will undergo training, can be a critical mass that will be able to, within the system and with the support of educational institutions, spread their knowledge and experience beyond the boundaries of the TABLA project, i.e., transfer the knowledge to their colleagues, thus developing their own experience, but also giving back to the professional community at least part of what was invested in them.

This segment of the TABLA project is directly related to the European Commission project *Education for Employment*, which will deal with human resources in education systems in BiH in the next 30 months and will propose the standardization of the teaching profession, accreditation, and promotion - which is in line with the elements of the TABLA project.

All project activities are aimed at systemically improving education in BiH in reading, mathematics, and science-functional literacy, as well as improving student knowledge in general, strengthening key competencies, and creating schools that are stimulating for the development of individual student capacity.

Finally, it should be noted that the ambition of this project was not to offer a unique recipe or solution that will last forever, but rather to offer a framework and model for setting a quality system of continuing professional development of teachers in which the project solution will serve to the educational institutions and currently active teachers as a starting point for building a modern KPR system that will primarily enable professional development with relevant and current topics, but also be future-oriented in terms of new topics and new ways of implementing training and professional development programs.

Collaborators in the drafting of the document

Members of the expert team from the Republic of Slovenia Institute for Education (ZRSŠ) actively cooperated in the preparation and drafting of the documents under project component 2 (PC 2):

**Branko Slivar**, a project team coordinator, is currently the head of the secondary education department at the Republic of Slovenia Institute for Education. He has worked in the field of education for more than 30 years as a teacher, school psychologist, pedagogical advisor, lecturer, and project leader. He was involved as a leader or as a member (researcher) in several important EU/EU-BiH projects, and is an author of surveys in the fields of evaluation of student competencies, learning outcomes, and entrepreneurial competencies.

**Andreja Bačnik**, a member of the team, is currently a senior chemistry advisor and coordinator for the STEM group at the Republic of Slovenia Institute for Education. Her areas of work and research are the natural sciences (chemistry), particularly active approaches to teaching and learning in chemistry, inquiry-based learning, visualization, ICT, and, in particular, chemical safety. Also, she has been trained in toxicology. Over the last ten years, she has actively participated in the development of chemical safety in Slovenia, i.e., incorporating chemical safety at all levels of pre-university curricula and implementing chemical safety in schools. She was also an expert in chemical safety in education in a project implemented in the Republic of Croatia. Ms. Bačnik is the author of various articles on education and assessment of knowledge.

**Primož Krašna**, a member of the team, is currently a senior advisor for art education at the Republic of Slovenia Institute for Education. He is skilled in organizing workshops in digital technology, formative assessment, teamwork, collaborative learning, and mediation intended for teachers and principals. As a former teacher and now as a counselor, he has participated in various projects such as Pedagogy 1: 1, Inclusive Paradigms, and Formative Assessment. He is also involved in the POKIT/MENTEP project dedicated to digital literacy in vocational schools.

**Mojca Suban**, a member of the team, is currently a senior advisor for mathematics at the Republic of Slovenia Institute for Education and coordinator of the mathematics subject group. She is also the leader of the Working Team for Critical Thinking in the NA-MA POTI project for the development of scientific and mathematical literacy, and the leader of the project team in the Slovenian part of the MERIA project (mathematical education). Ms. Suban is involved in several projects: European classrooms, ePortfolio - Eufolio, and the 2015-2018 assessment of transversal skills. She is also the author of various articles on mathematics education and assessment (summative, formative).

**Saša Krajšek**, a member of the team, is a senior biology advisor at the Republic of Slovenia Institute for Education. She has participated in various national and international projects and conferences. Ms. Krajšek provides advice in the field of curriculum development and modern didactics related to biology, and teaches teachers through various forms of cooperation. Also, she supports a development team of biology teachers who conduct a formative assessment in teaching, and encourages them to share examples of good practice. Ms. Krajšek has participated in national and international projects (ATS STEM).

**Goran Bezjak**, a team member, is currently a senior physics advisor at the Republic of Slovenia Institute for Education. He is skilled in organizing workshops for teachers and principals in the field of digital technology, formative assessment, teamwork, and collaborative learning. He is also a Microsoft education expert. His field of work and research is teaching physics, especially active teaching (game-based learning) and different approaches to learning physics, especially inquiry-based learning (IBL). Mr. Bezjak participated in national (formative assessment) and international projects (ATS STEM). He is also involved in projects that promote digital literacy.

**Brigita Žarkovič Adlešič**, an education specialist, is the head of the Center for Professional Development at the Republic of Slovenia Institute for Education. Her work is strongly linked to schools and teachers nationally and internationally. She is the author of publications dealing with teacher training and learning, counseling, and mentoring. Her international work is related to ATEE membership and cooperation in projects dealing with teacher learning and continuous professional development. She was actively involved as an expert in the teacher professional development projects in Croatia and Bosnia and Herzegovina.

**Dr. Mateja Brejc** works at the Republic of Slovenia School for Principals. Her work is related to education management, quality development of educational institutions, (self) evaluation of schools, and development planning. At the School for Principals, she delivers (self) evaluation training for principals of kindergartens and schools. She is a member of the editorial board of the journal *Vodič za obrazovanje u obrazovanju* [Engl. Guide to Education in Education] and the author of several articles, papers, and monographs on school management. At the Faculty of Business, DOBA, she runs an online course on Quality Management in Education, which is part of the Management in Social Services and Education undergraduate study program. She is a member of the board of the European association ENIRDELM (European Network for the Improvement of Research and Development in Educational Leadership in Management).

In addition to experts from Slovenia, the contribution was also provided by experts from BiH:

**Dr. Dževdeta Dervić**, professor of physics. She completed her doctoral studies in the field of physics in education at the Faculty of Science in Sarajevo. She has fifteen years of experience in high school, of which thirteen years of parallel work in domestic and international programs. She has completed training and participated in domestic and international conferences, seminars, and workshops. She is actively involved in the development of a physics curriculum in Sarajevo Canton. She participated in the implementation of the STEM approach to learning within the project “Enhancing Basic Learning and Education in Bosnia and Herzegovina (ENABLE BiH)”.

**Dr. sc. Marija Naletilić**, Head of the Sector for CCC in the Agency for Preschool, Primary and Secondary Education of BiH. She is the leader of the project for the development of the learning outcome-based CCC, the Guidelines for the implementation of the CCC in the curriculum, and the Guidelines for Inclusive Education in the Agency for Preschool, Primary and Secondary Education of BiH. She co-authored an Alternative History Curriculum. She is the author of workshops related to innovative approaches in history teaching. She chaired the History Teaching Reform Committee in Bosnia and Herzegovina. She reviewed textbooks for nine-year primary education and high schools and participated in the development of the Action Plan for the drafting of the Qualifications Framework for BiH and the Manual for BiH Qualifications Framework Quality Assurance. As part of the project “Enhancing Basic Learning and Education in Bosnia and Herzegovina (ENABLE BiH)”, she participated in the development of the STEM component and is co-author of the manual for teacher training in the implementation of the Operational Curriculum for STEM competencies.

**Dr. Muharem Avdispahić**, Honorary Doctor of Science, is a professor in the field of analysis at the Department of Mathematics, Faculty of Science of the University of Sarajevo. He has written a total of 51 papers in the fields of Fourier analysis, real analysis, and number theory. The results of his work have been cited in 11 international monographs, 13 doctoral dissertations (6 in the United States, from Syracuse University to Princeton University, from 1986 to 2012), and in more than 120 research papers worldwide. He is the recipient of the Al Khwarizmi International Prize for Mathematical Achievement, as well as an honorary doctorate from Kingston University, UK. Prof. Avdispahić was a vice-dean for science, vice-rector for teaching, and rector of the University of Sarajevo. He was also the main academic coordinator of the EU projects “Information Technology Development” and “Developing the Faculty of Science Activities” and the holder of the scholarship for “Doctoral Studies in Mathematical Sciences in Southeast Europe”. He was an expert in the field of mathematics within the ENABLE BiH Project, supported by the United States Agency for International Development (USAID), and implemented by Save the Children - Office for the Northwest Balkans (SCiNWB). He recently served as the coordinator of the project “STEM aspects in mathematics teaching” (STEM aspects in mathematics teaching) supported by the FBiH Ministry of Education and Science.

**Namir Ibrahimović**, professor of literature of the people of BiH and Bosnian language; Principal of the Elementary School “Safvet-beg Bašagić” in Sarajevo. Core Trainer, trainer, and coordinator for Sarajevo Canton in the process of training teachers in the application of learning outcomes in mother-tongue teaching in the STC project. He is a trainer in the training program of CEI School “Step by Step”. He participated in a series of researches looking at the textbooks of the so-called national group of subjects and is a co-author of the textbook “Svezame, otvori se”, and long-term member of the editorial board of “Školegium”, a magazine for more just education. He is currently leading the reform of education in Sarajevo Canton.

1. This text discusses the continuous professional development of teachers; however, the same applies to educators, expert assistants and directors of educational institutions, with full recognition of their specificities. [↑](#footnote-ref-1)
2. From *Guidelines for Improvement of the Teaching Profession (Smjernice za unapređenje nastavničke profesije)*, 2020. [↑](#footnote-ref-2)
3. The experience of the Republic of Slovenia Institute for Education and the role of the Program Council when developing CPD in Slovenia is very positive. [↑](#footnote-ref-3)
4. Other elements of an effective teaching process are:

   * 1. recognition of developmental characteristics and individual differences of students in the process of successful learning,
     2. effective implementation of individualization, differentiation and personalization of educational work,
     3. developing the life-long-learning skills in students by using independent learning strategies,
     4. use of information and communication technology (ICT) in teaching and development of information literacy of students,
     5. working together with teachers of other subjects to implement the inter-disciplinary approach,
     6. identification of students with special needs and, in cooperation with other teachers and professionals, adapting the curriculum to their particular features,
     7. effective communication with students and other stakeholders in education; development of positive group atmosphere and good relations with students and among them;
     8. development of key competencies;
     9. definition of clear rules regarding the teaching process, implementation of the learning process, and organization of classroom work; creation of clear rules of conduct and discipline in the classroom based on respect to all students;
     10. successfully dealing with inappropriate behavior, aggression, conflicts, and use of appropriate strategies to resolve them;
     11. showing positive attitude to students, understanding and respect to students’ social, cultural, linguistic tradition, religious belief, and other circumstances of the kind.

   [↑](#footnote-ref-4)
5. [Pravilnik o izboru in sofinanciranju programov nadaljnjega izobraževanja in usposabljanja strokovnih delavcev v vzgoji in izobraževanju (pisrs.si)](http://www.pisrs.si/Pis.web/pregledPredpisa?id=PRAV13060), Accessed on 9 February 2021. [↑](#footnote-ref-5)
6. Amended on the basis of Guidelines for development of standards for accreditation of programs of teacher education in vocational education (Smjernice za izradu standarda za akreditaciju programa izobrazbe nastavnika u srednjem strukovnom obrazovanju), APOSO, 2017. [↑](#footnote-ref-6)
7. Developed after the Model for improving the system of continuous professional development of educators, teachers, expert associates in Bosnia and Herzegovina (Model za unapređenje sistema kontinuiranog profesionalnog razvoja odgajatelja, nastavnika i stručnih saradnika u Bosni i Hercegovini), APOSO, 2013. [↑](#footnote-ref-7)