Improvement of Educational Effectiveness
in Primary Schools (IEEPS)

Evaluation report

May 2017.

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The scope of the evaluation

This report presents the main findings from the evaluation of the project Improvement of Educational Effectiveness in Primary Schools (IEEPS). The project is granted by the Lifelong Learning Programme (LLP) of the European Commission, subprogramme Comenius – Comenius multilateral project. The Education, Audiovisual and Culture Executive Agency (EACEA) has registered the project as 538992-LLP-1-2013-1-RS-COMENIUS-CMP. The project lasted from December 1st, 2013 until May 30th, 2017. The project was realized by the Faculty of Education (Univeristy of Kragujevac, Jagodina, Serbia), KU Leuven University (Leuven, Belgium), University of Cyprus (Nicosia, Cyprus), the Insitute for Educational Research (Belgrade, Serbia), National Examinations Centre (Ljubljana, Slovenia), primary School "JelenaĆetković" (Belgrade, Serbia) and C'Makedonitissa's Primary School (Nicosia, Cyprus).

As stated in the project documents, there were three main aims of the project:

1) Identifying educational effectiveness factors, i.e. teacher and school variables important for explaining pupils' mathematics and science achievement;

2) Giving individual school feedback about school's value added – school's contribution to pupil achievement after controlling for pupil background factors;

3) Creating and implementing professional development programs and materials for teachers and educators in order to improve their teaching practice.

This evaluation covered all three aims by placing in the center perceptions of some of the most important beneficiaries of the project – teachers, principals, pedagogues, and school psychologists. They had been given opportunity to assess Research Report and Handbook for Quality Teaching (as a result of project activities in the realm of the first aim), Report on School Performance Feedback (as a result of project activities in the realm of the second aim), and a professional development program provided to certain number of school staff (as a result of project activities in the realm of the third aim). The report is divided in these three parts, commencing with evaluation of professional development of teachers (in Serbia and Cyprus[1]), where most of evaluation materials was collected.

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[1] Evaluation of PD done in Belgium could not be done since it started later in the project, and since it was designed differently from EPD in Serbia and Cyprus which focused on teachers: it focused on training school leadership teams to understand the findings of reports created by using the SPF system.

I Effective professional development (Serbia)

Introduction

The nine day-long training for the teachers and school counsellors is based on the latest research findings in the area of Educational effectiveness (educational quality). The literature confirms that the following aspects of the quality teaching most impact pupil learning (Creemers & Kyriakides, 2008[2], Muijset al., 2014[3]; Scheerenset al., 2007[4]): management of time, the classroom as a learning environment, structuring, orientation, application, teaching modeling, questioning and evaluation[5]. These research results have started to be applied in practice some countries (Antoniou et al., 2011[6]), so the team comprised of the researchers at the Faculty of Education of University of Kragujevac and Institute for Educational Research, in close cooperation with researchers at the University of Cyprus, developed and implemented a nine day-long training with the aim of improving teaching practices based on the latest research finding.

The training was conceptualized so that it lasts for the entire school year - one day a month over nine months - so that the teachers would have time to apply in practice what they learnt in the training and also receive feedback from the trainers. The first day of training was the introductory day, explaining the basics of the quality teaching practices as presented in Creemers' & Kyriakides' 2008 dynamic model of educational effectiveness. Each of the following days was devoted to one of the factors in the dynamic model, totaling eight days (factors). Nine days of training were formatted as three three-day seminars, so that they could be accredited by the National Institute for Improvement of Education in Serbia. The first three-day seminar encompassed social aspects of quality teaching, the second - organizational aspects, and the third - cognitive aspects.

Description of the training

A total of 236 employees from 36 elementary schools in Serbia (mostly teachers, with some school counsellors and several principals) participated in the training. More specifically, 217 participants from 34 schools attended all three three-day seminars, 3 participants attended two three-day seminars and 16 participants attended one three-day seminar. The list of all elementary schools and number of participants per school is given in the Appendix 1.

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[2]Creemers, B.P.M., &Kyriakides, L. (2008). *The dynamics of educational effectiveness: a contribution to policy, practice and theory in contemporary schools.* London and New York: Routledge.

[3]Muijs, D., Kyriakides, L., van der Werf, G., Creemers, B.P.M., Timperley, H., & Earl, L. (2014). State of the art – teacher effectiveness and professional learning. *School Effectiveness and School Improvement: An International Journal of Research, Policy and Practice, 25(2)*, 231–256.

[4]Scheerens, J., Luyten, H., Steen, R. & Luyten–Thouars, Y. De. (2007).*Review and meta-analyses of school and teaching effectiveness.* Enschede: Universiteit Twente.

[55] Factors are presented as they appear in Creemers' &Kyriakides' 2008 dynamic model of educational effectiveness, but other authors cite those and other similarly worded factors.

[6] Antoniou, P., Kyriakides, L., &Creemers, B.P.M. (2011). Investigating the effectiveness of a Dynamic Integrated Approach to teacher professional development. *Center for Educational Policy Studies Journal, 1(1)*, 13–42.

The training participants were divided in eight groups. The trainings were held at elementary school "Petefi Sandor" in Novi Sad for one group, at elementary school "RastkoNemanjic - Sveti Sava" in Nova Pazova for two groups, at elementary school "Stefan Nemanja" in Nis for three groups and at the Faculty of Education of University of Kragujevac for two groups.

The trainings were held from October 2015 to June 2016. A total of 72 days of trainings were held, each day being led by 2 trainers.

Work with the participants during the 2015/2016. school year mostly followed this scenario[7]: there was a discussion about the previously learnt factor of quality teaching and homework - the creation and realization of the action plan for the improvement of participants' teaching practice (which was focused on that factor), and on the participants' diaries and reflections about the success of the action plan implementation. The trainers gave feedback to the participants regarding various aspects of their homework. Then, the trainers presented the following factor of quality teaching, which encompassed a detailed description and meaning of the factor, relevance of the factor according to the theoretical and empirical literature, examples of use of the factor in teaching, etc. This presentation was followed by the main part of the day: discussion of participants on their experiences with the factor, several workshop activities, worksheet activities, analyses of video clips, etc. At the end of each day, the participants created or started to create the action plan for the factor about which they learnt that day. In the weeks until the following training, the participants had to further perfect the action plan and implement it in their classes, as well as keep the teaching diary and write down their reflections on the process. These activities were repeated for each day of the seminar. The trainers were available to participants via e-mail or phone for any questions and dilemmas.

Each participant received certificates of attendance. In this way, the great majority of participants (217) earned 72 hours (9 days X 8 hrs.) of training, which count toward the requirement for professional development for teachers in Serbia (100 hours in five years)[8].

Evaluation of the training
Various paper-based questionnaires[9] were filled out by the participants either after each day of the training, after each three-day seminar or at the beginning and the end of the training.

Evaluation: three-day seminars
For the following section, out of 231 participants who attended the first three-day seminar, 207 evaluations were obtained; out of 219 participants who attended the second three-day seminar 219 evaluations were obtained, and out of 223 participants of the third three day seminar 194 evaluations were obtained. Tables 1 and 2 present participant responses regarding topics, teaching methods, trainers and potential usefulness and success of the trainings. (The evaluation questionnaire is given in the Appendix 2, as required by the National Institute for Improvement of Education.)

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[7] The exception was the first, introductory day.
[8] Participans who attended fewer than three seminars earned the appropriate number of hours.
[9] Initially, it was planned to have online questionnaires, but this was deemed not feasible due to low response rate.

Table 1 – Mean and standard deviation of the questionnaire items, by the seminar

Item	Seminar	Mean (0-4)	Standard deviation
1.Topics/contents that were planned by the seminar were realized.	Seminar 1 (N=207)	3.74	0.61
	Seminar 2 (N=219)	3.76	0.53
	Seminar 3 (N=194)	3.73	0.57
2. Teaching methods during the training provide adequate learning and professional development of participants.	Seminar 1 (N=207)	3.58	0.67
	Seminar 2 (N=219)	3.57	0.62
	Seminar 3 (N=194)	3.58	0.66
3. Previous knowledge and experiences of the participants were taken into account during the implementation of the training.	Seminar 1 (N=207)	3.57	0.71
	Seminar 2 (N=219)	3.67	0.56
	Seminar 3 (N=194)	3.65	0.66
4. The agenda of the training was respected.	Seminar 1 (N=207)	3.76	0.67
	Seminar 2 (N=219)	3.82	0.42
	Seminar 3 (N=194)	3.78	0.54
5. Attendance of this training will help me improve my own work.	Seminar 1 (N=207)	3.51	0.75
	Seminar 2 (N=219)	3.53	0.69
	Seminar 3 (N=194)	3.58	0.69
6. The trainers know the topics in the program well.	Seminar 1 (N=207)	3.78	0.65
	Seminar 2 (N=219)	3.81	0.43
	Seminar 3 (N=194)	3.77	0.52
7. The trainers actively communicate with the participants and give them feedback about their work and the results of their work.	Seminar 1 (N=207)	3.79	0.62
	Seminar 2 (N=219)	3.85	0.38
	Seminar 3 (N=194)	3.78	0.57
8. The trainers encourage the participants' acquirement of knowledge and respond to participants' questions.	Seminar 1 (N=207)	3.71	0.63
	Seminar 2 (N=219)	3.77	0.48
	Seminar 3 (N=194)	3.74	0.61
9. Work conditions (premises, technical conditions) enabled successful implementation of the training.	Seminar 1 (N=207)	3.70	0.65
	Seminar 2 (N=219)	3.65	0.64
	Seminar 3 (N=194)	3.73	0.57
10. The entire organization contributed to the successful implementation of the training.	Seminar 1 (N=207)	3.70	0.63
	Seminar 2 (N=219)	3.68	0.57
	Seminar 3 (N=194)	3.70	0.58

It can be seen from Table 1 that the participants judged all three three-day seminars very highly, and also that the quality of all three seminars is uniform.

If these responses are presented in more detail - as percentages of the responses that the participants gave on the 0-4 Likert scale in the questionnaire - the following results are obtained (Table 2).

Table 2 – Percentage responses to the questionnaire items, by the seminar[10]

Item	Seminar	Entirely disagree (0)	Mostly disagree (1)	Partly agree (2)	Mostly agree (3)	Entirely agree (4)
1.Topics/contents that were planned by the seminar were realized.	Seminar 1 (N=207)	0.48%	1.45%	1.45%	16.91%	79.71%
	Seminar 2 (N=219)	0.00%	0.46%	3.20%	16.44%	79.91%
	Seminar 3 (N=194)	0.52%	0.52%	1.55%	20.10%	77.32%
2. Teaching methods during the training provide adequate learning and professional development of participants.	Seminar 1 (N=207)	0.48%	0.97%	4.35%	28.50%	65.70%
	Seminar 2 (N=219)	0.00%	0.46%	5.48%	30.59%	63.47%
	Seminar 3 (N=194)	0.52%	0.52%	5.15%	27.84%	65.98%
3. Previous knowledge and experiences of the participants were taken into account during the implementation of the training.	Seminar 1 (N=207)	0.48%	1.45%	5.31%	26.09%	66.67%
	Seminar 2 (N=219)	0.00%	0.46%	3.20%	25.57%	70.78%
	Seminar 3 (N=194)	0.00%	2.06%	4.12%	20.10%	73.20%
4. The agenda of the training was respected.	Seminar 1 (N=207)	1.45%	1.45%	0.48%	12.56%	84.06%
	Seminar 2 (N=219)	0.00%	0.00%	1.37%	15.53%	83.11%
	Seminar 3 (N=194)	0.52%	1.03%	0.00%	16.49%	81.96%
5. Attendance of this training will help me improve my own work.	Seminar 1 (N=207)	0.97%	1.93%	3.86%	31.40%	61.84%
	Seminar 2 (N=219)	0.00%	0.00%	11.42%	23.74%	64.84%
	Seminar 3 (N=194)	0.52%	1.55%	3.61%	27.84%	66.49%
6. The trainers know the topics in the program well.	Seminar 1 (N=207)	0.97%	1.93%	0.48%	11.59%	85.02%
	Seminar 2 (N=219)	0.00%	0.00%	1.37%	16.44%	81.74%
	Seminar 3 (N=194)	0.00%	1.03%	1.55%	17.01%	79.90%
7. The trainers actively communicate with the participants and give them feedback about their work and the results of their work.	Seminar 1 (N=207)	0.97%	0.97%	1.93%	10.63%	85.51%
	Seminar 2 (N=219)	0.00%	0.00%	0.91%	12.79%	86.30%
	Seminar 3 (N=194)	0.52%	1.03%	1.55%	13.40%	82.99%
8. The trainers encourage	Seminar 1 (N=207)	0.48%	1.93%	0.97%	19.32%	77.29%

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[10] The percentages do not add up to 100% because missing responses are not shown. (There were very few of these for each item, the range was 0-2%.)

	Seminar 2 (N=219)	0.00%	0.00%	2.28%	18.72%	78.54%
the participants' acquirement of knowledge and respond to participants' questions.	Seminar 3 (N=194)	0.52%	0.52%	4.12%	14.43%	79.90%
9. Work conditions (premises, technical conditions) enabled successful implementation of the training.	Seminar 1 (N=207)	0.97%	0.97%	1.45%	20.77%	75.85%
	Seminar 2 (N=219)	0.46%	0.00%	5.94%	21.46%	72.15%
	Seminar 3 (N=194)	0.52%	0.00%	3.09%	19.07%	77.32%
10. The entire organization contributed to the successful implementation of the training.	Seminar 1 (N=207)	0.97%	0.97%	0.48%	22.22%	75.36%
	Seminar 2 (N=219)	0.00%	0.00%	5.02%	21.46%	71.69%
	Seminar 3 (N=194)	0.52%	0.00%	3.09%	21.65%	73.71%

A great majority of participants (ranging from 61.84% to 86.40%, depending on the seminar and questionnaire item) gave the most favorable response - that they entirely agree with the statement. Entirely or mostly agree was the response given by more than 90%participants, which is an extremely high evaluation of the seminar. Three items on which the seminars were most favorably evaluated were: "The agenda of the training was respected", "The trainers know the topics in the program well." and "The trainers actively communicate with the participants and give them feedback about their work and the results of their work.". Three items with the least favorable response (although still very positive) were: "Teaching methods during the training provide adequate learning and professional development of participants.", "Attendance of this training will help me improve my own work." and "Previous knowledge and experiences of the participants were taken into account during the implementation of the training.".

The participants responded to the additional question of how much time during the training was spent on meaningful learning activities (Table 3).

Table 3 – The percentage of training time that was used for meaningful learning activities

Seminar	0% of time	1-19% of time	20-39% of time	40-59% of time	60-79% of time	80-99% of time	100% of time
Seminar 1 (N=207)	0.48%	0.97%	1.45%	10.63%	39.61%	41.55%	5.31%
Seminar 2 (N=219)	0.00%	0.00%	2.28%	8.68%	38.36%	34.70%	11.42%
Seminar 3 (N=194)	0.00%	1.03%	3.61%	15.98%	24.23%	41.75%	9.79%

Again, it is very positive that 45-50% of the participants think that more than 80% of time spent in training was used for meaningful learning activities. About 75-85% of the participants think that more than 60% of time spent in training was spent on meaningful learning activities.

Finally, the participants were asked whether they would recommend the seminar to their colleagues. Even 96.62% of the participants of Seminar 1 responded positively (2.90% responded negatively); 88.58% of the participants of Seminar 2 responded positively (5.94% responded negatively), and 86.60% of the participants of Seminar 3 responded positively (6.70% responded negatively)[11]. These answers also point to the fact that the participants judged all three seminars very highly.

The participants were also asked to explain their recommendations to the colleagues, and give their comments on the seminars. These comments were given in the Appendix 3. It can be surmised that a very high number of comments were highly positive of the seminars. It should be stressed that the participants mostly commented on the applicability of seminars to their teaching practices, which was one of the main aims of the seminars.

Evaluation: Each seminar day
In addition to the evaluation form that was filled out by the participants after each three-day seminar, participants also filled out evaluation form after each seminar day, when only one factor was in focus. The evaluation form is shown in the Appendix 4. These responses were analyzed by day (factor) and by group. In Table 4 it can be seen that all seminar days (factors) were judged to be of the same, high quality. The lowest response mean was 3.31, and the highest 3.91 (out of 4.00).

Likewise, all the eight groups gave very positive evaluations to the training. In Table 5 it can be seen that the lowest response mean was 3.22, and the highest 3.90 (out of 4.00).

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[11] The responses do not add up to 100% because missing answers were not shown. (There were few of those for each item, ranging from 0% to 2%.)

Table 4. Evaluation of individual days (factors).

Item	Day 1 Introduction	Day 2 Leaning environment	Day 3 Management of time	Day 4 Structuring	Day 5 Orientation	Day 6 Application	Day 7 Teaching Modelling	Day 8 Questioning	Day 9 Evaluation
Aims of the seminar are well explained.	3.85	3.74	3.76	3.64	3.77	3.80	3.66	3.62	3.74
Aims of the seminar are relevant for my teaching.	3.60	3.61	3.57	3.55	3.61	3.64	3.56	3.59	3.67
Aims of the seminar are accomplished.	3.75	3.67	3.67	3.64	3.76	3.71	3.65	3.62	3.71
Topics and content covered today are relevant for my teaching.	3.62	3.67	3.55	3.55	3.61	3.67	3.50	3.56	3.68
Teaching methods during the seminar were appropriate in regard to the aims of the seminar.	3.72	3.62	3.62	3.52	3.69	3.66	3.60	3.59	3.64
Teaching methods during the seminar activated me.	3.49	3.47	3.45	3.31	3.49	3.51	3.51	3.44	3.49
Tools and materials used in the seminar were chosen well.	3.69	3.56	3.56	3.56	3.61	3.66	3.64	3.57	3.66
The time was efficiently used.	3.76	3.67	3.67	3.61	3.84	3.79	3.65	3.59	3.66
The participants were active today.	3.62	3.59	3.59	3.51	3.73	3.74	3.69	3.62	3.66
Working atmosphere was pleasant.	3.82	3.74	3.71	3.68	3.84	3.81	3.70	3.63	3.69
Working conditions were adequate.	3.70	3.73	3.71	3.61	3.78	3.73	3.71	3.66	3.71
Trainers were clear and understandable.	3.89	3.80	3.80	3.71	3.86	3.87	3.68	3.68	3.79
Trainers were open for questions and comments.	3.91	3.84	3.82	3.79	3.86	3.88	3.83	3.71	3.78
Trainers took into account participants' prior knowledge and experience.	3.74	3.67	3.71	3.69	3.80	3.83	3.77	3.66	3.71
I was motivated to actively participate today.	3.60	3.45	3.45	3.40	3.51	3.53	3.51	3.42	3.48
I was sufficiently active today.	3.48	3.45	3.40	3.36	3.53	3.51	3.54	3.46	3.44
This seminar was useful for me.	3.75	3.62	3.53	3.51	3.62	3.60	3.59	3.51	3.63
I would recommend this seminar to my colleagues.	3.73	3.61	3.58	3.49	3.64	3.66	3.59	3.53	3.62

Table 5. Evaluation of all nine days of the seminar, by participant group.

Item	Nis 3 group	Novi Sad group	Nova Pazova 1 group	Nova Pazova 2 group	Nis 1 group	Nis 2 group	Jagodina 1 group	Jagodina 2 group
Aims of the seminar are well explained.	3.89	3.71	3.73	3.56	3.74	3.70	3.79	3.79
Aims of the seminar are relevant for my teaching.	3.72	3.59	3.60	3.46	3.53	3.50	3.70	3.74
Aims of the seminar are accomplished.	3.86	3.63	3.70	3.55	3.68	3.63	3.73	3.79
Topics and content covered today are relevant for my teaching.	3.81	3.60	3.58	3.45	3.53	3.51	3.66	3.76
Teaching methods during the seminar were appropriate in regard to the aims of the seminar.	3.79	3.58	3.63	3.47	3.58	3.58	3.72	3.75
Teaching methods during the seminar activated me.	3.76	3.37	3.38	3.25	3.44	3.50	3.47	3.65
Tools and materials used in the seminar were chosen well.	3.79	3.51	3.58	3.44	3.58	3.60	3.71	3.77
The time was efficiently used.	3.85	3.57	3.74	3.56	3.66	3.63	3.78	3.83
The participants were active today.	3.81	3.64	3.56	3.48	3.63	3.61	3.67	3.76
Working atmosphere was pleasant.	3.85	3.74	3.73	3.65	3.70	3.66	3.76	3.85
Working conditions were adequate.	3.88	3.58	3.73	3.62	3.68	3.63	3.76	3.83
Trainers were clear and understandable.	3.90	3.76	3.84	3.67	3.78	3.71	3.82	3.88
Trainers were open for questions and comments.	3.90	3.84	3.85	3.72	3.85	3.74	3.88	3.89
Trainers took into account participants' prior knowledge and experience.	3.88	3.75	3.75	3.51	3.73	3.72	3.74	3.83
I was motivated to actively participate today.	3.80	3.34	3.36	3.28	3.48	3.50	3.54	3.68
I was sufficiently active today.	3.78	3.36	3.40	3.22	3.45	3.46	3.49	3.67
This seminar was useful for me.	3.83	3.49	3.51	3.38	3.57	3.59	3.70	3.77
I would recommend this seminar to my colleagues.	3.82	3.52	3.53	3.39	3.58	3.60	3.72	3.79

Evaluation: Before and after self-assessment of teaching practices

The participants in the Effective professional development also assessed their teaching practices at the beginning of the EPD (1st day of training) and at the end (9th day of training). A total of 144 participants provided both before and after questionnaires. The questionnaire that was used for this assessment was the same questionnaire filled out by the pupils to assess teaching practices of their teachers in the School performance feedback and Effective factors parts of the project, but rephrased so that it can be filled out by teachers regarding their own practices. The questionnaire is submitted in the Appendix 5 (in Serbian, as it was provided to the participants; the English version of the parallel pupil questionnaire is one of the project results).

For the most part (70 items out of 93), the before and after EPD items on self-assessments of teaching practices did not differ in any statistically significant terms. (A paired two-tailed t-test was used to assess the differences in means between the before and after responses on each item.) On 22 items out of 93 (23.65% of items), the participants showed increased employment of effective teaching practices, since the after measure was significantly larger than the before measure of an item. On 1 item out of 93, the participants showed decreased use of effective teaching practices, since the after measure was significantly smaller than the before measure of an item. The 22 items on which participants reported more frequent utilization of effective teaching practices at the end of the training than at the beginning were:

1. In my classes, pupils feel pleasant.

2. During the lesson, I encourage pupils and praise their work (e.g., well done, just keep up the good work, you can do it).

3. I give to pupils the opportunity to express their opinion.

4. I show interest in every pupil's learning.

5. In my class, pupils get along with each other.

6. Pupils from my class like to be friends with each other.

7. Pupils don't start working for a long time after the class has begun. (This item was less frequent at the end of the training than at the beginning.)

8. Pupils follow the established classroom rules for behavior in my class.

9. I ask pupils whether they already know something in regard to the new lesson.

10. My instructions (about solving problems, exercises, projects and so on) are clear, so the pupils know what's asked of them.

11. When pupils do some activity in class (problems, exercise, experiment), they know why they are doing it.

12. I ask pupils to identify when and where they can apply what they learn in class.

13. I stroll around the classroom, check pupils' work and give them useful advice and suggestions.

14. I explain to pupils how to solve the problems step by step or how to divide the lesson into smaller parts so that they can understand the material more easily.

15. I manage to make pupils interested in material.

16. I ask pupils questions or assigns problems which require them to apply what they learned to similar situations.

17. Pupils do a presentation to the class.

18. I use power point presentations, short movies and similar in order to make material more understandable to pupils.

19. The pupils like my subject.

20. The pupils enjoy learning the material in my subject.

21. The pupils want to know more about my subject.

22. The pupils look forward to the classes in my subject.

One item that was higher at the beginning than at the end of the training was:

1. I assign homework to pupils in my subject (e.g., to respond to questions, fill out worksheets, solve problems, etc).

In other words, over the time of nine months, the participants showed a statistically significant improvement on around 20-25% of their teaching practices. Although a more valid way of observing the improvement of teaching practices of teachers would be via pupil assessment (or an assessment of an independent observer[12]), it should be stated that EPD undertaken in the project clearly indicates some positive effects.

Final evaluation of the whole 9-day training

At the end of the 9th day of training participants also filled in a questionnaire in which they had opportunity to give their general evaluation of the training; to state how familiar, novel and useful was what they had learned about the factors of quality teaching; to give opinion about the impact of their learning in training on pupils' motivation, activation, understanding of lessons and communication practices; and to assess different aspects of the training. The questionnaire is submitted in the Appendix 6.

General evaluation of the nine-day training

Participants were asked to what extent their initial expectations from the training have been met. As it is shown in the Graph 1, 59% asserted that their expectations were met to a great

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[12] Observation of teaching practices before and after the professional development was out of scope of this evaluation since that would require detailed training of several observers, more travelling and fewer teachers.

extent. Those who felt that their expectations were met to a little extent or not at all are just above 2%.

Graph 1. Level of expectations met by the training (%)
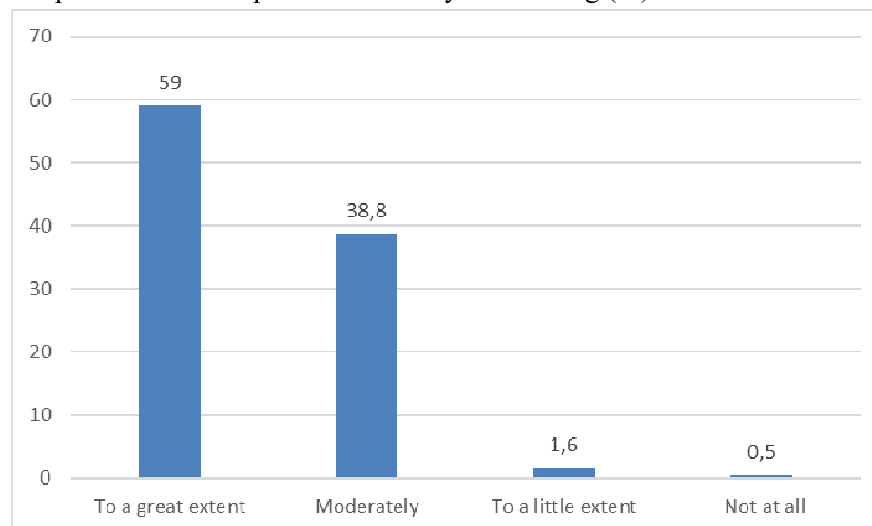
Participants had an opportunity to write which of their expectations were met the most. The most frequent answer pertained to their expectation that they will learn new teaching approaches, methods and techniques which will help them in improving their teaching practices (*Participant: I've learned new teaching methods and techniques which I will use in my further work)*. This was followed by their expectation that they will acquire some useful, applicable knowledge (*Participant: Every day I use and apply examples and ideas from this training; Participant: I could transform theoretical knowledge into practical aspects and effects were significant.)* To add to this point, participants highly valued practical examples they were presented during the whole training *(Participant: There was a lot of practical examples that I can use in my teaching)*. Participants often have mentioned that training met their expectation that they will have opportunities to share their experience with their colleagues, i.e. learning from their peers.

Participants also had a chance to express which of their expectations were met the least. These answers were generally much less frequent than those pertaining to expectations met. At the same time they were more varied. The most frequent answer was that they did not have enough opportunity to learn from practical examples, especially from those coming from Serbian schools or similar settings (*Participant: What is needed more are examples of good practice from countries/schools with similar culture and standards as is ours*). Teachers also mentioned that they expected to learn more on how to deal with disruptive, unmotivated pupils, how to work with pupils with special education needs, and to learn more about using ICT in teaching, etc.

Another opportunity to gain participants' perceptions about the training as a whole was through a following question in the questionnaire: If you would like to recommend this training to your colleagues, what would you tell them? By far the most frequent answer was

that the knowledge acquired through this seminar is very applicable and useful to everyday work of teachers, i.e. teaching. The training was also described as innovative, inspirational, creative, well organized, comprehensive, interesting, different.

Participant: I would tell them that this is one of the better seminars and that they will not waste their time. It is very useful, in some segments less in some other more, but the overall impression is positive.

Participant: This seminar should be introduced as obligatory subject on all teacher education faculties.

Participant: Don't miss it, it is outstanding.

On the other hand, teachers also had a chance to express what would they say if they would like to refrain their colleagues from attending this training. Again, this question was much less populated than the previous question. The main reason stressed by participants was its duration (9 days), the fact that it was held on weekends, that the training required a lot of hard work (including realization of action plans). Few others stated that it was too theoretic, that there was too much repetition, and that there were not many really new things to be learned.

Familiarity, novelty, and usefulness of the seminar

Participants were assessing each of the factor of quality teaching on the grounds of how familiar were they with these factors prior to the training, and how many new things have they learned about them during the training. The Table 6 shows that teachers were in average mainly familiar with all the factors, and that their learning of new things about factors of quality teaching was moderate (on average answers fall between answers A lot and Not a lot).

Table 6. Familiarity with and novelty of factors of quality teaching- mean

Factor of quality teaching	Familiarity			Novelty		
	N	Mean (0-4)*	Standard deviation	N	Mean (0-4)**	Standard deviation
Management of time	191	1.98	.589	187	2.39	.720
Classroom as a learning environment	189	1.85	.652	187	2.49	.683
Structuring	187	2.06	.720	186	2.29	.667
Orientation	188	2.13	.644	184	2.28	.650
Application	189	1.76	.656	186	2.49	.773
Modelling	188	2.22	.769	187	2.25	.698
Questioning	188	1.81	.706	185	2.44	.792
Assessment	190	1.86	.702	188	2.37	.780

*1-Completely familiar; 2-Mainly familiar; 3-Mainly unfamiliar; 4-Completely unfamiliar
**1-Very much; 2-A lot; 3-Not a lot; 4-Quite a little

If these responses are presented in more detail - as percentages of the responses that the participants gave on the 0-4 Likert scale in the questionnaire - the following results are obtained (Table 7).

Table 7. Familiarity with and novelty of factors of quality teaching - percentages

Familiarity with factors of quality teaching					Amount of new learning about factors of quality teaching			
Completely familiar	Mainly familiar	Mainly unfamiliar	Completely unfamiliar		Very much	A lot	Not a lot	Quite a little
15.2%	74.9%	6.8%	3.1%	Management of time	9.1%	47.6%	38.5%	4.8%
26.5%	65.1%	5.3%	3.2%	Classroom as a learning environment	7.0%	41.2%	48.1%	3.7%
17.1%	65.8%	11.2%	5.9%	Structuring	9.7%	53.8%	34.4%	2.2%
10.1%	71.3%	13.8%	4.8%	Orientation	8.7%	56.5%	32.6%	2.2%
33.3%	60.8%	2.6%	3.2%	Application	8.6%	41.9%	40.9%	8.6%
12.2%	61.7%	17.6%	8.5%	Modelling	12.3%	53.5%	31.6%	2.7%
31.9%	59.6%	4.3%	4.3%	Questioning	10.3%	44.3%	36.8%	8.6%
27.9%	63.2%	4.2%	4.7%	Assessment	11.7%	46.8%	34.6%	6.9%

These results show that factor Modelling was the one with which teachers have been least familiar prior to the training (26% of teachers mainly or completely unfamiliar), followed by Orientation and Structuring. The rest were assessed as familiar, especially Application, Questioning and Assessment. On the other hand, from 50% to 65% of participants expressed that they have learned very much / a lot about each of the factor.

Participants also assessed the usefulness of what they have learned about the factors of quality teaching (Table 8). The results show that they perceive it, on average, as useful (and going into direction of Very useful). In addition, participants were asked to express their attitude towards the time that should be devoted to factors of quality teaching in future trainings. To put it simply, average answer was *Give the same time as it has now* (moving slightly in direction of answer *Give more time*).

Table 8. Usefulness of knowledge on factors of quality teaching and time to be devoted in future - mean

	Usefulness of what was learned about factors of quality teaching			Time to be devoted in future to factors of quality teaching		
Factor of quality teaching	N	Mean (0-4)*	Standard deviation	N	Mean (0-3)**	Standard deviation
Management of time	189	1.74	.566	187	1.87	.563
Classroom as a learning environment	187	1.81	.589	185	1.91	.539
Structuring	186	1.78	.547	186	1.85	.529
Orientation	186	1.76	.577	184	1.88	.523
Application	187	1.76	.587	186	1.91	.563
Modelling	188	1.80	.619	187	1.87	.585
Questioning	186	1.70	.575	184	1.77	.565

*1-Very useful; 2-Useful; 3-Not much useful; 4-Not useful at all
**1-Give more time; 2-Give the same time as it has now; 3-Give less time

More details are given in the Table 9. Data show that factors Questioning and Assessment were assessed as slightly more useful than other factors, and contingent with this is the finding that these two factors require more attention (time) in the future. In general, consistently more than 90%of teachers stated that what they had learned was useful or very useful, and not one teacher said that it was not useful at all. The majority of teachers answered that all the factors deserve the same amount of time as they already have.

Table 9. Usefulness of knowledge on factors of quality teaching and time to be devoted in future - percentages

Usefulness of what was learned about the factors of quality teaching					Time to be devoted in future to factors of quality teaching		
Very useful	Useful	Not much useful	Not useful at all		Give more time	Give the same time as it has now	Give less time
32.3%	61.4%	6.3%	0%	Management of time	23.0%	66.8%	10.2%
28.3%	62.0%	9.6%	0%	Classroom as a learning environment	19.5%	70.3%	10.3%
28.0%	65.6%	6.5%	0%	Structuring	22.6%	69.9%	7.5%
31.2%	61.3%	7.5%	0%	Orientation	20.7%	71.2%	8.2%
32.1%	59.9%	8.0%	0%	Application	20.4%	67.7%	11.8%
29.8%	61.2%	8.0%	0%	Modelling	24.6%	64.2%	11.2%
36.0%	58.1%	5.9%	0%	Questioning	29.9%	63.0%	7.1%
39.4%	55.3%	4.8%	0%	Assessment	29.6%	63.4%	7.0%

Impact on pupils

Teachers were asked to generalize their experience with all that they have implemented in their teaching during the training program, and what has directly originated from the training (new ideas, new techniques, realization of action plans…) and to assess the impact this has had on their pupils. They were called to think about it in terms of pupil motivation, pupil activation, pupil understanding of lessons and pupil communication with teachers and other pupils.

When it comes to pupil motivation, 90.5% of teachers expressed that their pupils were more motivated to learn when they were implementing the knowledge they gained during the trainings. When asked to explain their answer, those teachers often remarked that every change, every novelty in teaching motivates pupils. There was, in their words, more dynamic in classes, more freedom for pupils to express themselves. Overall, better orientation and questioning practices, and other factors of quality teaching reportedly contributed to higher pupil motivation.

Participant: Classes were more dynamic, pupils were posing more questions, there was more discussions on classes.

Participant: Pupils quickly recognized new activities in realization of lessons, all changes affect their attention, engagement, activism, some more, some less, but it was apparent they were more motivated.
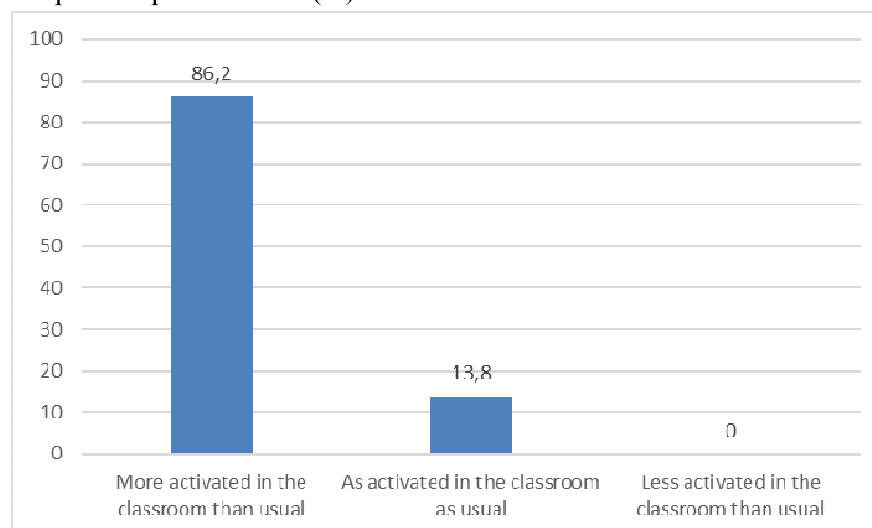
Participant: Specific planning and realization of lessons with specific preparation, adjustments to pupils, affected their motivation to learn more than usual.

Graph 2. Motivation of pupils to learn (%)
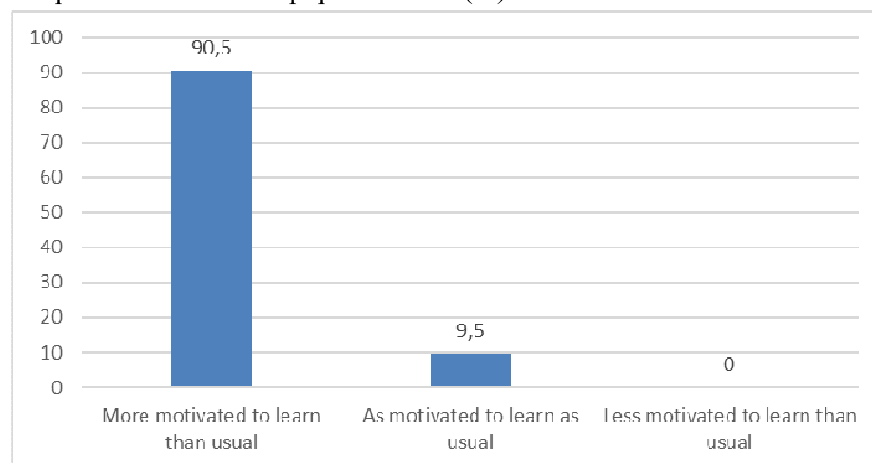
Participants also stated that great majority of pupils were more activated in the classroom than usual (86.2%) (Graph 3).

Graph 3. Pupil activation (%)

When asked to explain their answers, teachers provided similar reasons as in the case of more motivated pupils. Pupils were more activated than usual because their interests, ideas and special talents were acknowledged; there was better social atmosphere in class and more

group work; because new methods of work were inviting for them; because more provoking tasks and questions were posed to them and they had a chance to raise questions on their own; because the lessons were better planned beforehand and they placed main emphasis on pupils' active learning, etc.

Participant: Because the lesson was not like a routine one, not like they used to have, and this made them curious.

Participant: Tasks were better prepared, there was more of differentiated work, less time was wasted, more questions occurred.

Participant: They like to be all involved and appreciated in assignments, and this is what they have been given through a group work.

Those teachers who stated that there was no difference in pupils' activation during the implementation of ideas they had learned during the training, most frequent explanation was a notion that they are doing similar techniques and methods in their regular teaching, hence no observable differences did occur. Expectedly, not one teacher had observed that pupils were less activated than usual.

Next question pertained to pupils' understanding of lessons - whether their understanding was better than usual, same as usual or even poorer than usual. Results show that three quarters of the sample perceives that their pupils had better understanding of lesson when they had employed innovations in their teaching.

Graph 4. Pupils' understanding of lessons (%)
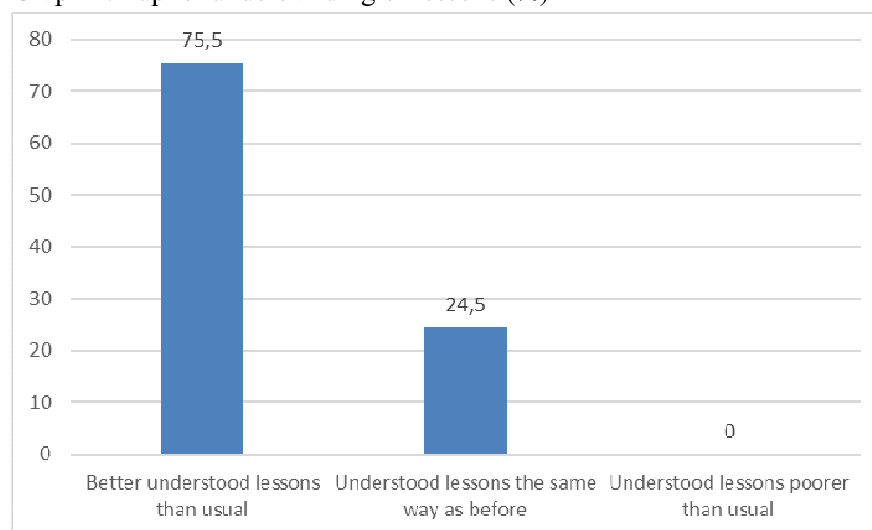
In explaining why the pupils had better understanding, teachers underlined that they had practiced various elements of the following factors of quality teaching: application, questioning, structuring, orientation, and modelling. By this and by having pupils more motivated and activated teachers managed, as they say, to elevate pupils' understanding and learning.

Participant: I gave more interesting examples and tasks that were more adjusted to the needs of pupils.

Participant: My orientation become better so pupils realized the importance of certain parts of the lesson.

Participant: I realized that pupils and their learning is our primary goal, not running to implement syllabus. I devoted myself more to that and it was successful.

The quarter of teachers who did not observe any changes in pupils' understanding explained this in a way that they are already effective enough in this respect or that teaching innovations did not prove to have much impact in their case.

Quite similar distribution as in previous question was obtained for teachers' perception whether pupils had better, the same or poorer communication/relation with them and with other pupils during the 'experimental lessons'. Almost three quarters of teachers expressed that pupils were doing better in this respect. For many of them, this is thanking to implementation of all the factors of quality teaching. Others were emphasizing specific aspects as: more active listening, defining rules of behavior, more group work and work in pairs, general atmosphere in class becoming better, better organization of time, enhancing competitive spirit, etc.

Participant: They felt that they have more space to express themselves in what was less constrained framework of usual lesson.

Participant: I think the communication between pupils is better ever since we have clearly defined rules of behavior.

Participant: To put it simple, I have improved my communication with pupils thanks to new knowledge from this training and I have noticed that pupils have improved their mutual communication and their relation with me. The general atmosphere is much better now.

Around the quarter of teachers who did not see any changes in communication patterns, mainly explained this by the fact that they already had very good communication in class.

Graph 5. Pupils' communication with other pupils and with teachers (%)
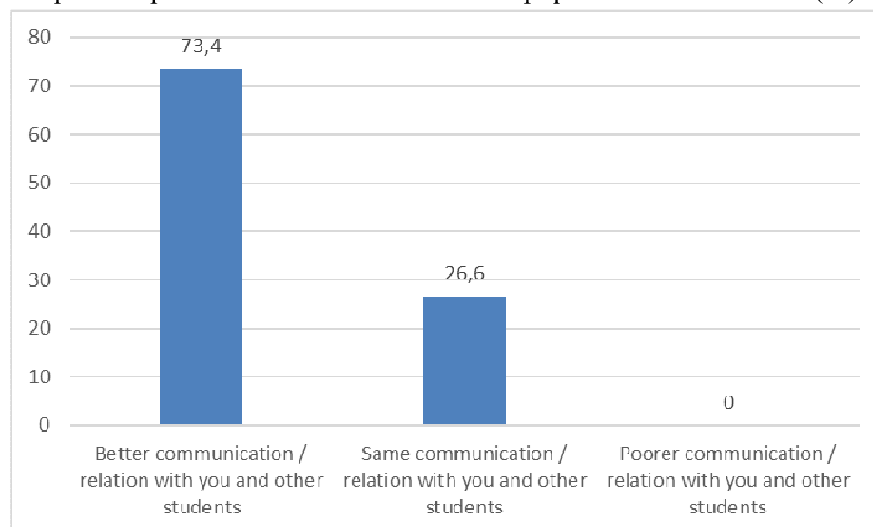
Organizational aspects of training

Part of final evaluation was devoted to assessment of different organizational elements of the nine-day training. Information gathered would be beneficial for the team of authors and trainers to better fit the future training exercises to the needs of teachers. The emphasize was placed on general format of the seminar, reflection on experiences regarding the implementation of action plans (as a part of each training day), relation between theoretical and practical elements of the training, usage of video recordings and provided hand-outs and other working materials.

Format of the training

Training program Quality teaching (I, II and III) was implemented in 9 separate days, with around one month between each training day. During that time teachers had a task to develop and implement action plans, i.e. implement in their teaching some ideas and techniques that were previously elaborated in the training. Teachers were asked whether this was, in their opinion, an appropriate format for this training program. Nearly 90% of teachers gave positive answer, i.e. they agreed that this was an appropriate format. When asked to explain their answer, the majority of teachers mentioned that the period between two training days was long enough for them to implement and test the ideas from the training and in that way to solidify what has been learned.

Participant: We had enough time to recapitulate, elaborate and implement what was learned.

Participant: It is good to deal with some conceptual whole for a longer period of time, it makes knowledge more durable.

Graph 6. Appropriatness of the trainning format (%) (Question: Is this an appropriate format for this training program?)
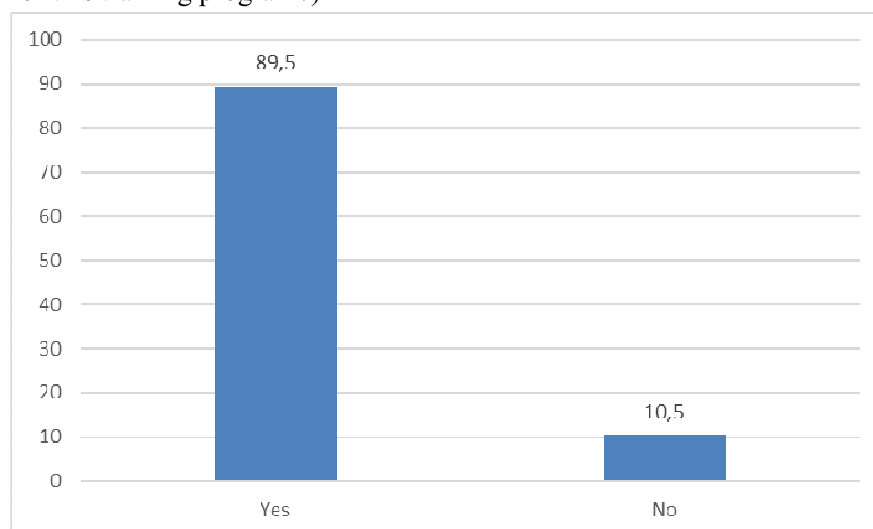
One in ten teachers thought that current format of the training was not appropriate. Reasons were more diverse than in the previous case. For some, the training is too long and it should be shortened to up to six days. Others are fine with nine days, but think that training days should be clustered in a way - for example, to have it 3 times 3 days in a raw. Some teachers were of opinion that the period between two training days should be shorter - 2 or 3 weeks - this way training intensity would be raised and there will not be 'watering down' effect. The following suggestions also deserve attention: placing training materials on-line, on some learning management system; avoiding trainings during the weekend; create homogenous training groups by teaching subjects; organize trainings in places where teachers do not have to travel too much; to finish with trainings before May or to have them only in the first semester.

Usefulness of reflection

At the beginning of each training day, the first part of the work was dedicated to reflection on teachers' experiences regarding the implementation of action plans. Teachers were asked how useful that part of the training was for them. Results show that 63% were of opinion that it was very useful. Sharing experiences and examples from other schools were seen as a good learning opportunity, as well as getting feedback from trainers. This also brought benefits by being reminder of previous training topic or sometimes it was even better explained by other trainers. Participants also perceived this activity as a good warm up for a new training topic.

One third of teachers thought that this reflection at the beginning of the training day was somewhat useful, and less than 4% of teachers thought of it as mainly not useful. Reasons they have been providing were: often this was an avenue for making unnecessary digressions or long monologues; sometimes it was boring, not useful for other people's practice; some were not satisfied with the feedback provided by trainers; aside trainer and a teacher talking

about her action plan, other people were disinterested, so this was sometimes clear waste of time.

Graph 7. Usefulness of reflection at the beginning of a training day (%)
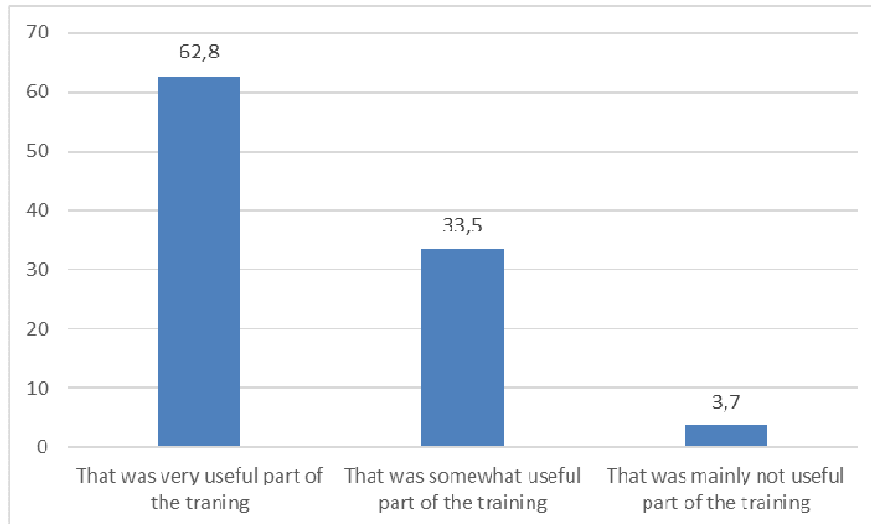
Link between theory and practice

Each training day comprised theoretical aspects of the given factor and practical parts (application, workshop approach). Teachers were asked to assess the relation between those two parts, taking the whole nine-day training program in consideration. As this is a critical point in many training programs, it is surprising to have a finding showing that vast majority of teachers (82.5%) thinks that the ratio between theoretical and practical parts was well balanced. Much less, teachers marked the option stating that not enough attention was given to practical application, and just 1% of teacher felt that theoretical aspects were sidelined.

Graph 8. Balance between theory and practice (%)
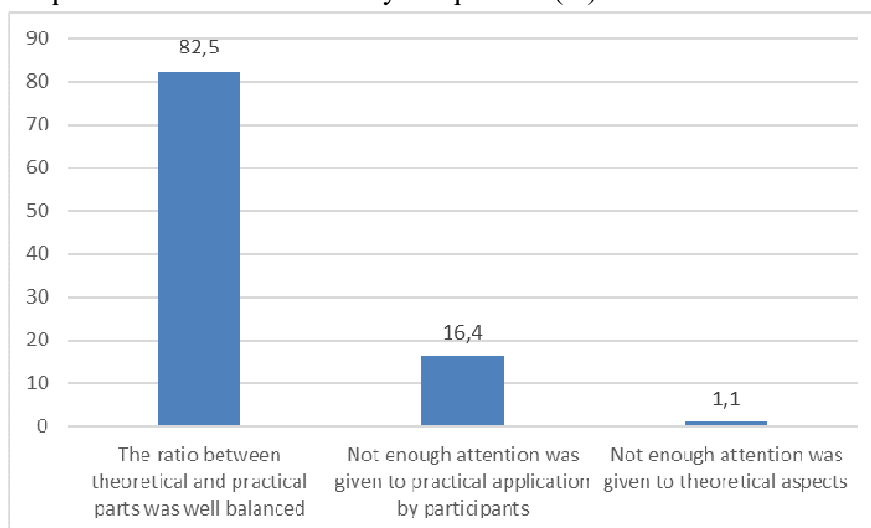
Video recordings

On some of the training days teachers had an opportunity to look and to analyze video recordings of lessons as an illustration of a given factor. In the final evaluation of the whole training teachers were asked to assess how useful this activity was for them. Slightly over 70% of teachers found this to be very useful part of the training, a quarter of them found it somewhat useful, and 2% did not consider this to be useful activity.

Graph 9. Usefulness of using video recordings of classes
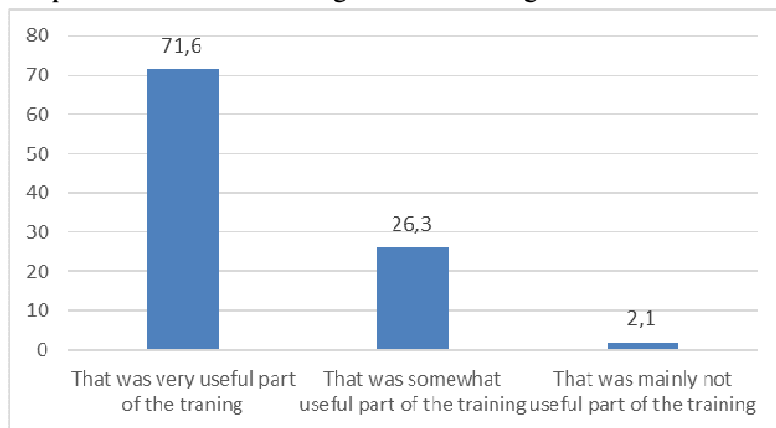
Seminar hand-outs and materials

Teachers also had an opportunity to evaluate hand-outs and other working materials that they had received during the training. Almost nine of ten teachers found this to be very useful, and one of out ten found them to be somewhat useful. None was dissatisfied with materials, i.e. perceived them as not useful.

Graph 10. Usefulness of hand-outs and materials
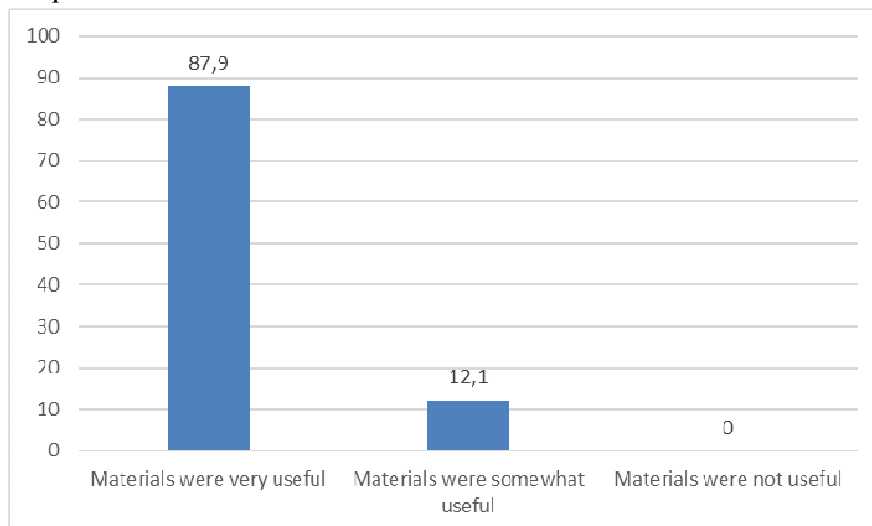
However, all of them were asked in which way these materials should be improved. Main suggestions of teachers are presented in the table below.

Table 10. Suggestions for improvements of training materials

Materials should be given to teachers all at once and at the beginning of the training.
Materials should be placed on some on-line platform.
Materials should have some illustrations, photos.
Materials should be more concrete, with more concrete examples from classes.
Have a shorter and extended version of materials.
Have a more varied video materials, from Serbia if possible, and of a newer date.
Materials should not look like excerpts from university textbooks.
Extend examples from subjects of social sciences and arts.

Engagement of teachers, responsibilities in schools and collaboration with colleagues

In order to be in the position to evaluate the effectiveness of the training it was worth to assess some additional aspects. First of all, there was a question of the level of engagement of teachers in putting new knowledge into practice. Between each two consecutive training days they had a task to design an action plan, to implement some ideas and techniques from previous training day and to record their observations about it. They were asked to what extent have they been involved in these activities. As it is shown in the Graph 11, majority of teachers stated that they were moderately involved, followed by those who said that they were very involved. Almost one out of ten teachers said that she was somewhat involved and less then 4% said that they were very slightly involved.

Graph 11. Teacher involvement in application of innovations (%)
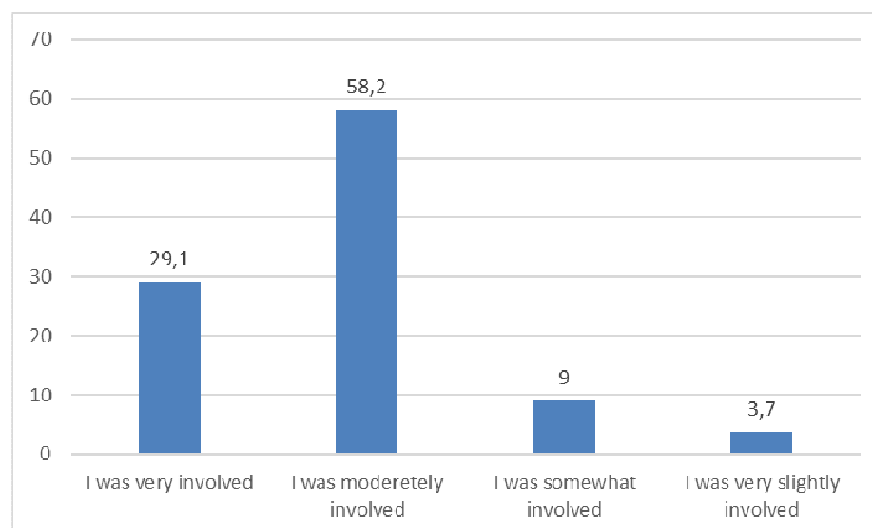
Another issue was how much did the responsibilities in school allow enough time to prepare and implement ideas from the training. Majority of teachers gave *Yes and no* answer, a little bit more than a third of them said *Mainly yes*, and around 7% said *Mainly no.*

Graph 12. Responsibilities in school allowing enough time to prepare and implement ideas from the training (%)
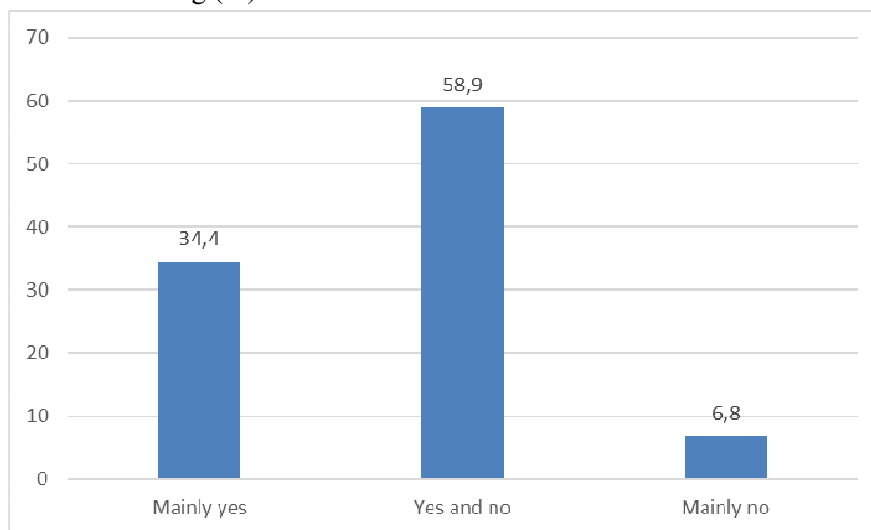
It was also interesting to find out did teachers cooperate with other colleagues while implementing ideas from the training (during preparation, implementation, discussion). Answers *Mainly yes* and *Yes and no,* both were chosen by around 45% of participants. Almost 10% said that was not mainly the case.

Graph 13. Collaboration with colleagues while implementing ideas from the training (%)
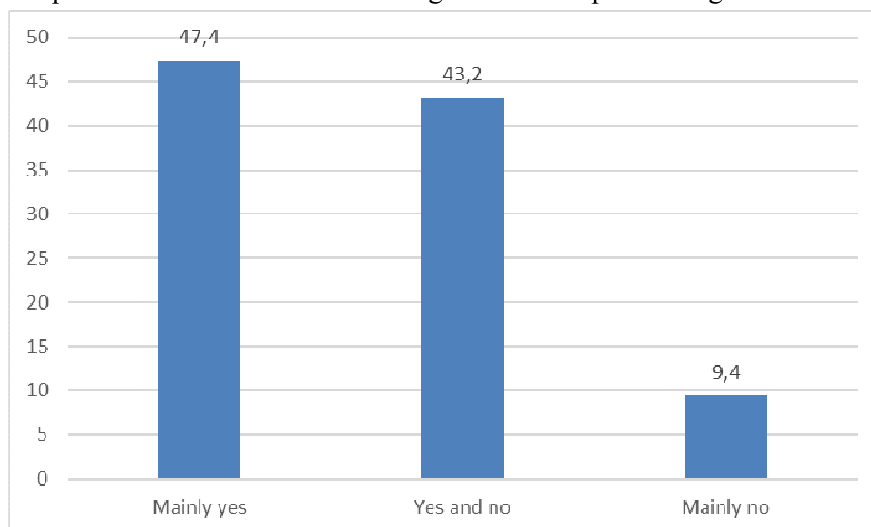
Conclusion

Both the quantitative and qualitative analyses of the participant responses to the evaluation questionnaires imply that the developed and implemented seminars were of excellent quality and that their greatest characteristic was a very high applicability to the teaching.

It is deemed that the success of the nine-day training program rests on two things: the training was created based on research and the training is applicable in practice. On the one hand,

only results that have been confirmed by rigorous research have the potential to contribute to the improvement of teaching. On the other hand, these results must be adequately converted into training which the teachers can easily understand, accept and apply in their classrooms, so that their effects can be noticed. More specifically, the nine-day training is characterized by the following:

- The training was created based on the latest research findings in the area of educational effectiveness;
- The teachers were offered nine days of training, which is more than usual in Serbia. This encourages teachers to spend more time thinking about and improving quality of their teaching.
- Nine days of training are not consecutive, but there are 3-5 weeks between each two days, which gives teachers time to reflect, try, accept and internalize knowledge and skills attained at the seminars.
- The seminars do not consist of lots of frontal teaching, but in greater part contain practical tasks/exercises which encourage teachers to actively learn, which is a precondition to the improvement of their practice and also leads to the employment of more active learning situations when teaching their pupils.
- Teachers are given homework which they have to do in their everyday teaching practice, so the knowledge and skills attained in seminars do not stay decontextualized and localized to the day of the seminar, but get transferred to teachers' classrooms.
- The trainers are experienced experts who hold teaching at the centre of their professional interests. That is why they make seminars innovative, active, understandable and relevant to teachers.

It is recommended that the three three-day seminars continue being offered to teachers in Serbia. It would be beneficial if the Ministry recommended them to schools with lower achievement, as the seminars very specifically target teaching factors which impact pupil achievement. The team of authors/trainers should take into consideration messages conveyed by teachers in terms of improving training materials, video examples, parts comprising of joint reflection and providing feedback, etc.

II   Effective professional development (Cyprus)

Evaluation of program of professional development of teachers that was implemented in Cyprus was done in cooperation with project implementing partner - University of Cyprus, Department of Education. This evaluation also emphasized teachers' perceptions and the instrument for data collection that was used was the questionnaire that was used in Serbia for evaluating each seminar day, with somewhat different order and wording of questions. In Cyprus this instrument was used for the whole training package, since there is no requirement regarding evaluation.

This training program was offered in Cyprus during the school year 2015-2016 and 20 schools were selected to be included in the program. In total, 64 teachers participated in the training sessions. They were divided into four groups, based on the observed level of teaching expertise. Each group worked with trainers nine times during the school year. All of the schools were located in the district of Nicosia. In May 2016, a questionnaire of the participating teachers' perceptions on the training program was administered to the participating teachers at the end of the program. Out of the 64 Cypriot teachers approached, all responded in all questionnaire items, with a response rate of 100%.

In Table 11 the mean (M) and standard deviation (SD) of all items, which were included in the questionnaire, are presented. The items are ordered in a descending order, according to their mean score, starting from the highest mean. First, it should be mentioned that the mean scores of all items (n=17) range between 3.50 and 3.92. Since the questionnaire concerned the perceptions of the teachers participating in the training program, it can be claimed that teachers, as a group, responded to these items stressing positive perceptions for the training program (Table 11).

The main observation that can be made from the mean scores in Table 11, is that Cypriot teachers would highly recommend the program to their colleagues (M=3.92, SD=0.27) and that they also found the program's goals were well explained (M=3.91, SD=0.29). It can also be claimed that Cypriot teachers, as a group, rejected the idea that the training program was not useful for them. Also, it is shown clearly in this table that Cypriot teachers agree among themselves, declaring their consensus on the training program, as there are quite small differences standard deviations of the items.

In addition, Cypriot teachers thought that materials used in the training program were appropriate for improving their teaching strategies and for designing their action plans (M=3.61, SD=0.45).

Table 11. Means and standard errors of teacher's perceptions on the training program offered in their schools.

No	Items concerned with teachers' perceptions	M	SD
1.	I would recommend this training to my colleagues	3.92*	0.27
2.	The goals of the training were well explained	3.91	0.29
3.	Working atmosphere was pleasant	3.73	0.45
4.	I was activated by the working methods used in the training	3.72	0.45
5.	Participants of training were active by included in all sessions	3.69	0.47
6.	Aids and materials used in the training were well selected	3.61	0.45
7.	Time management was good	3.58	0.49
8.	I was sufficiently engaged in the training	3.58	0.50
9.	This training was useful for me	3.58	0.50
10.	I was motivated to take active part in the training	3.58	0.50
11.	Working methods during the training were effective	3.56	0.50
12.	Goals of the training were achieved	3.55	0.50
13.	Trainers were open for questions and comments	3.55	0.50
14.	Goals of the training are relevant to my work	3.50	0.50
15.	Trainers were easy to follow and to be understood	3.50	0.50
16.	Topics/contents covered today are relevant to my work	3.53	0.50

* = 1: Completely disagree; 2: Mainly disagree; 3: Mainly agree; 4: Completely agree

Finally, the support offered by the research team to the teachers was described as sufficient and that was visible by their high agreement on responding positively on the item *"trainers were open to questions and comments"* (M=3.55, SD=0.50). In the final section, the main conclusions revealed by these findings are briefly discussed.

The evidence presented above showing the Cypriot teachers' perceptions, could be considered significant for the training program. Thus, further implications for the implementation of this training program, that was found to promote quality of teaching in Cyprus, can be drawn. However, the findings raise more general issues regarding the development of a training program and the policy followed for its evaluation. An exploration of the findings of this training's theoretical background is attempted in the last part of this section.

According to previous evidence related to the value of clear goal setting, the current training program served the purpose of setting and reaching clear goals, in order for teachers to realize the significance of their role in contributing the most in effective teaching and learning. In addition, through this training program, importance was given to the role of trainers since their support and timely feedback is considered crucial for the effective implementation and success of a training program. All trainers of the Cypriot team were experienced in offering training programs based on the framework proposed by the Dynamic model. Also, trainers' previous experience may be the reason for cultivating a positive climate and motivation to the participants. This is also confirmed by the teachers' statements in the perceptions questionnaire about the existence of positive "working atmosphere". The questionnaire data revealed that all participants recognize the positive impact of the training program on promoting quality of teaching and due to this reason they would highly recommend the participation of their colleagues in such training programs. It should be noted that the positive acknowledgement of the participants on the training program can be confirmed by their decision on extending the operation of the program to the next school year.

Those decisive outcomes, about the perceptions of teachers on the training program, are empowering the Dynamic Model of Educational Effectiveness as a theoretical framework that can support the development of effective training programs and in extension may improve teaching skills and pupil's learning outcomes. It is of great importance that while the Cyprus Ministry of Education and Culture is already offering such a training program to teachers, a deeper emphasis should be given on the endorsement of every aspect related to the program, as developed by the research team. For the purpose of scaling up the training program in Cyprus, such support, coming from the Ministry of Education, would allow the implementation of training programs based on the Dynamic Model in more schools not only in primary, but also secondary education and for a longer period of time so as to examine the long-term effects of using the Dynamic Approach for training purposes.

III   Research Report and Handbook for Quality Teaching

The main aim of the project was to identify educational effectiveness factors, i.e. teacher and school variables important for explaining pupils' mathematics and science achievement. As a result of this part of the project a research report was prepared containing the most important results obtained from the analysis of data on a large sample of schools. Materials were distributed to schools and offered to professional and general public as a starting point for reflection and better understanding and improving teaching practices. In the second part of this publication there are handy materials that have been created in order to improve teaching, i.e. teaching aspects which numerous studies identified as the most important factors for promoting pupil achievement. This handbook is based on a theoretical model of the educational effectiveness, as well as on its check in practice. The material presented is based on experience of working within an accredited three-day professional development programs Quality teaching 1, 2 and 3.

An on-line questionnaire was prepared within the framework of this evaluation and distributed to 125 schools in the sample of main study (May 2017). The questionnaire is submitted in the Appendix 7. Total of 187 school staff filled in this questionnaire: 8 principals, 3 assistant principals, 32 school counselors and 136 teachers (8 missing data on this question about job position). The questionnaire asked separately for two distinctive parts of the document: 1) research report and 2) handbook for quality teaching. In both parts, emphasis was placed on 1) technical quality (adequacy and clarity) and 2) relevance, usefulness and novelty brought by the text.

When it comes to research report the vast majority of respondents were satisfied with how it is written. When we merge answers agree and strongly agree into one category we get that consistently 90-95% of respondents finds the text easy to understand, with adequate style of writing for school employees, with a good structure, with easily interpretable charts, etc. In the same amount, they have found that research methods and results were well described and thus were well understood. The only items where much more variation exist are those dealing with the length of the report and the use of technical terms. Around 44% of respondents agree or strongly agree that the report uses too many technical terms. Half of respondents thinks that the report is too long. More details can be found in Table 12.

Table 12: Adequacy and clarity of the research report

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
The report is written in easy to understand language.	0%	1.1%	3.9%	35.2%	59.8%
The report uses too many technical terms.	7.8%	31.8%	16.2%	31.8%	12.3%
It was easy for me to understand what the report says.	0%	3.4%	7.3%	32.6%	56.7%
The style of writing is tailored to the school staff.	0%	2.8%	5.6%	40.8%	50.8%
The report has a good structure.	0%	1.1%	5.1%	33.7%	60.1%
The report is too long.	12.8%	20.7%	15.6%	32.4%	18.4%
The report contains an adequate amount of information.	0%	1.1%	4.5%	43.0%	51.4%
Graphical displays are clear.	0.6%	2.8%	2.8%	29.1%	64.8%
I can easily interpret charts	0.6%	3.9%	2.2%	27.4%	65.9%
The research method is well explained.	0%	0%	4.5%	41.2%	54.2%
The research results are well described.	0%	0%	2.8%	36.3%	60.9%
The results of this research are clear to me.	0%	0%	3.9%	31.5%	64.6%

Great majority of respondents finds the research report useful, containing relevant and important information. They agree that they have learned something new from the report, but on the other hand they also agree that the report provided them with expected information. In the end, 97% of respondents agree or strongly agree that it is important that as many school employees become informed about the content of this report.

Table 13: Usefulness, relevance, and novelty of the research report

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
The report provides relevant information	0.6%	0%	3.9%	36.3%	59.2%
Data contained in the report are important for the school.	0%	0%	2.2%	30.3%	67.4%
The report is useful, usable.	0.6%	0%	6.7%	30.2%	62.6%
I learned something new from this report.	1.7%	2.3%	7.9%	36.2%	52.0%
The report gave me the expected information.	1.1%	2.8%	6.8%	42.0%	47.2%
I think it is important that as many school employees become informed about the content of this report.	0%	0.6%	2.8%	26.3%	70.4%

Similar results were obtained when school staff assessed the Handbook for Quality Teaching. Huge majority stated that they agree or strongly agree that the handbook was easy to understand, that the terminology and style was adequate for the intended audience, that handbook has a good structure and that factors of quality teaching are clearly described. Again, the only item where the distribution of answers differs is the one asking about the length of the handbook – slightly over half of respondents think that the handbook is too long.

Table 14: Adequacy and clarity of the Handbook for quality teaching

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
The handbook uses the terminology I am familiar with.	0%	2.2%	3.4%	37.1%	57.3%
It was easy for me to understand what the handbook says.	0%	1.1%	2.8%	30.9%	65.2%
The style of writing is tailored to the school staff.	0%	1.7%	2.8%	38.5%	57.0%
The handbook has a good structure.	0%	0%	3.9%	32.4%	63.7%
The handbook is too long.	12.9%	17.4%	15.7%	28.7%	25.3%
Factors of quality teaching are clearly described.	0%	1.1%	4.5%	33.7%	60.7%

School staff was quite unambiguous when assessing the usefulness of the handbook –always above 90% of respondents think that handbook provides good guidelines for teachers, in terms of possible approaches and concrete procedures, that it is a good source for learning, and that it would be important that as many school employees become informed about the content of the handbook. More detailed results are presented in the Table 15.

Table 15: Usefulness of the Handbook for quality teaching

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Handbook provides good guidelines for improving the quality of teaching.	0%	0.6%	2.8%	38.0%	58.7%
The handbook is useful, usable.	0%	0.6%	5.1%	34.3%	60.1%
The handbook provides a good description of the possible approaches and concrete procedures that teachers can apply in their work with pupils.	0%	1.1%	6.7%	37.4%	54.7%
I learned something new from this handbook.	0%	1.1%	6.8%	39.8%	52.3%
I think it is important that as many school employees become informed about the content of this handbook.	0%	0%	4.5%	26.3%	69.3%

Respondents had an opportunity to place additional comments if they wished. In line with overall positive assessments of the Report and the Handbook parts, comments were affirmative for the most part.

Participant: The report seems very studious, precise, and systematic. Undoubtedly, it will be for the benefit of teachers and school counselors.

Participant: It can be of great benefit to teachers and can be a lot of help in the implementation of quality teaching.

Those few who had different comments then those above, mainly were stating that they needed additional help to understand some parts of the document.

Participant: I needed help to interpret the charts.

Participant: Only after consultation with the psycho-pedagogical department some information became clear to me.

IV   Report on School Performance Feedback

Another important aim of this project was to provide participating schools with an individual school performance feedback report about school's value added – school's contribution to pupil achievement after controlling for pupil background factors. An on-line questionnaire was prepared within the framework of this evaluation and distributed to 125 schools (May 2017). The questionnaire is submitted in the Appendix 8. Total of 287 school staff filled in this questionnaire: 20 principals, 6 assistant principals, 58 school counselors and 197 teachers (6 missing data about the job position). The questionnaire asked about technical quality of SPF report, its relevance and new knowledge it provides, and future use in improving school quality.

Respondents favorably assessed the technical quality of the SPF report, i.e. its reader friendliness, style and structure, graphical displays etc. However, this document was also perceived by substantial percent of respondents as using too many technical terms (39%) and that it is too long (45%).

Table 16. Technical quality of SPF report

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
The report is written in easy to understand language.	0.4%	1.4%	5.7%	35.9%	56.6%
The report uses too many technical terms.	6.1%	39.3%	15.7%	30.0%	8.9%
It was easy for me to understand what the report says.	0.4%	2.5%	10.0%	36.7%	50.5%
The style of writing is tailored to the school staff.	0.4%	5.0%	10.0%	36.4%	48.2%
The report has a good structure.	0.4%	2.2%	4.7%	35.3%	57.6%
The report is too long.	13.9%	22.3%	18.6%	28.5%	16.8%
The report contains an adequate amount of information.	0.4%	1.8%	7.9%	40.0%	50.0%
Graphical displays are clear.	0.4%	1.4%	5.4%	25.4%	67.4%
I can easily interpret charts	0.7%	1.1%	4.7%	27.6%	65.9%

Similar pattern of favorable perception was recorded in relation to its relevance, usefulness and how informative it is. Results also show that respondents feel that they have understood the notions of pedagogical added value and difference between the expected and observed achievements of pupils. The same could be said, based on the findings, that they think that this way of presenting results allows fair comparison between schools and that they think they are aware of the limitations of studies like this one. More details are presented in the Table 17.

Table 17. Relevance and usefulness of SPF report

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
The report provides relevant information	0.4%	1.4%	4.3%	34.8%	59.1%
Data contained in the report are important for the school.	0%	0%	3.6%	30.1%	66.3%
The report is useful, usable.	0%	1.4%	7.9%	30.8%	59.9%
I learned something new about my school on the basis of this report.	1.1%	5.4%	6.8%	37.1%	49.6%
The report gave me the expected information about the school.	0.7%	2.5%	8.3%	44.2%	44.2%
I understand the concept of pedagogical added value.	1.1%	2.5%	7.1%	37.9%	51.4%
I understand the difference between the expected and observed achievements.	0.7%	0.4%	2.5%	30.7%	65.7%
The limitations of this report, i.e. of information contained herein are clear to me.	0%	1.1%	5.7%	37.9%	55.4%
The report allows fair comparison of schools, by taking into account the characteristics of the environment in which pupils live.	1.1%	2.5%	7.6%	35.4%	53.4%

Significant majority of respondents (82-85%), think that SPF report will really be used in school to improve its quality (whether that be academic achievements of pupils, teaching and learning, or organization and functioning of the school as an organization). Between 11% and 15% is not sure whether this will happen, while 2-3% disagrees with that kind of scenarios. Over 90% of respondents has a stance that it would be good if the school received such reports at the end of each school year. In line with some previously described findings, 58% of respondents think that there is a need for additional professional support if there is a desire for school staff to analyse data from SPF report in a proper way.

Table 18. Additional aspects of SPF report

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
I think that this report will really be used at my school to improve the academic achievement of pupils.	1.1%	1.4%	12.5%	39.1%	45.9%
I think that this report will really be used at my school to improve teaching and learning.	1.1%	1.8%	11.5%	40.3%	45.3%
I think that this report will really be used at my school to improve the work organization and functioning of the school as an organization.	1.1%	2.2%	14.8%	39.4%	42.6%
I think it is important that as many school employees become informed about the content of this report.	0.4%	0%	6.5%	27.0%	66.2%
It would be good if the school received such reports at the end of each school year.	0.7%	1.4%	6.1%	28.1%	63.7%
To analyse the data from the report, school employees need additional professional support.	7.5%	18.6%	15.8%	26.2%	31.9%

In this questionnaire, respondents also had a chance to give additional comments on SPF report if they wished – few of those are presented in the table below.

Table 19. Comments on SPF report

I think that this kind of research should be done more often.
This is the best feedback on pupil achievement on the final exam. Thank you for that.
The report changes the current picture on the effectiveness of teaching and learning in our school and I believe that will lead to positive changes in the attitude to our work responsibilities. It is our wish to participate in new similar projects.
Reports are seldom done to be so professional and helpful as this one, because for the first time it takes all the relevant factors in the evaluation of results. I have a very positive opinion of it and I am school principal for 16 years. The first time I was completely satisfied with the report !!
I am surprised by the information in the report and I think we will use it in future work.
Concept of pedagogical added value is interesting.
I like the concept of a fair comparison of schools.
Recommendation – it would mean much to us to have similar research every year, of course on a smaller scale. Praise for your efforts.
Huge job, congratulations on successfully performed task. As far as my school is concerned that is what I expected. I intend to analyse with each subject teacher the results, we will need more time for this.

V   General conclusion

This evaluation has shown that professional development programs for teachers that were created and implemented in Serbia and in Cyprus within the project Improvement of Educational Effectiveness in Primary Schools were of excellent quality and that their greatest characteristic was a very high applicability to the teaching. This could be explained by several factors: the trainings were based on the latest research findings converted in a form which the teachers can easily understand, accept, and apply in their classrooms; the trainings sustained over a longer period of time allowing teachers time to reflect, try, accept and internalize knowledge and skills attained; interactive nature of training sessions; and trainers being experienced experts who hold teaching at the centre of their professional interests. All these contributed to the overall impressions of the teachers in both countries that the trainings were innovative, understandable, and relevant to their teaching practice. Nevertheless, the authors/trainers should take into consideration messages conveyed by teachers in terms of improving training materials, video examples, parts comprising of joint reflection and providing feedback, etc. In both countries, it is advisable to continue offering the trainings based on the Dynamic Model of Educational Effectiveness to teachers and to consider options for scaling up in consultations with the relevant national educational authorities. In Serbia, it would be beneficial if the Ministry recommended this training to schools with lower achievement, as the seminars very specifically target teaching factors which impact pupil achievement. In Cyprus, support coming from the Ministry of Education would allow the implementation of training programs based on the Dynamic Model in more schools not only in primary, but also secondary education and for a longer period of time so as to examine the long-term effects of using the Dynamic Approach for training purposes.

When it comes to Research Report and Handbook for Quality Teaching and Report on School Performance Feedback, this evaluation has shown that the vast majority of school employees were quite satisfied with their quality. They have found the texts were easy to understand, useful, containing relevant and important information. In regard to the handbook, findings prove that it had provided good guidelines for teachers, in terms of possible approaches and concrete procedures, that it was perceived as a good source for learning, and that it would be important that as many school employees become informed about the content of the handbook. Similar pattern of favorable perception was recorded in relation to Report on School Performance Feedback. Results of this evaluation also show that respondents feel that they have understood the notions of pedagogical added value and difference between the expected and observed achievements of pupils. The same could be said, based on the findings, that they think that this way of presenting results allows fair comparison between pupils. For all the reports, however, a considerable number of school employees stated that they are too long and that sometimes they contain too many technical terms and concepts, for which they feel they need additional support for better understanding. Although the authors made a significant effort to avoid such characterization of the texts, it is advisable that in future draft versions of the reports are piloted in a few schools in terms of their reception and other intended effects. In spite of this last remarks, the evaluation results show the prevalent

optimistic stance that these reports (and the Handbook) will be used in participating schools to improve its quality (whether that be academic achievements of pupils, teaching and learning, or organization and functioning of the school as an organization).

Overall, this evaluation has shown that the project Improvement of Educational Effectiveness in Primary Schools had reached its targets and that the quality of its results are of unambiguous quality. Efforts made in exploitation of these results are promising in terms of its impact and sustainability, though this will surely depend also on openness and general orientation toward evidence based practice by the national educational authorities.

VI   Appendices

Appendix 1 – The list of schools that participated in the trainings

School	Place	Number of participants
Ratko PavlovićĆićko	Prokuplje	13
StojanNovaković	Blace	12
ŽarkoZrenjanin	Apatin	10
PetefiŠandor	Novi Sad	2
BrankoRadičević	Šid	11
Dvadesettrećioktobar	SremskiKarlovci	4
MilicaStojadinovićSrpkinja	Vrdnik	2
VeljkoDugošević	Ruma	13
Dvadesettrećioktobar	Golubinci	2
RastkoNemanjićSveti Sava	Nova Pazova	4
Milan Rakić	Beograd	5
Despot Stefan Lazarević	Beograd	8
JelenaĆetković	Beograd	5
KraljAleksandarPrvi	Beograd	4
Ivan Goran Kovačić	Beograd	3
VeljkoDugošević	Beograd	5
DesankaMaksimović	Beograd	5
Mile Dubljević	Lajkovac	5
VelizarStankovićKorčagin	Kruševac	3
PetarTasić	Leskovac	1
Vasa Pelagić	Leskovac	7
Devetioktobar	Prokuplje	17
KostaStamenković	Leskovac	3
Stefan Nemanja	Niš	4
NikodijeStojanovićTatko	Prokuplje	8
VukKaradžić	Leskovac	5
Ivan Goran Kovačić	Niškabanja	6
Vitkoi Sveta	Gadžin Han	9
Nada Popović	Kruševac	11
Ivan Vušović	Ražanj	8
AkademikRadomirLukić	Miloševac	5
Jovan Cvijić	Kostolac	13
Jovan JovanovićZmaj	Kruševac	4
DonjaLivadica / NadeždaPetrović	Velika Plana	7
JelicaMilovanović	Sopot	5
BranaPavlović	Konjuh	7

Appendix 2 - The questionnaire for the three-day seminar (Requirement by the Serbian Institute for Improvement of Education)

	Completely agree	Mainly agree	Partly agree	Mainly disagree	Completely disagree
1.Topics/content planned by the program were realized					
2. Methods of work used in the training have assured participant's learning and professional development					
3. Prior knowledge and experience of participants were appreciated during the training					
4. The training hadfollowed planned schedule and timing					
5. Attending this training will help me to improve my own work					
6.Trainers are experts in the field that the training is about					
7. Trainers had facilitated active communication with participants and provided them with feedback on their work and its results					
8. Trainers had stimulated participants' learning and provided them with answers to their questions					
9. Working conditions (facility, technical support) allowed successful realization of the training					
10. The whole organization of the training contributed to successful realization of the training					

11. I received information about this training:
   a)from the Catalogue**b)**from colleagues**c)**from the school where I work**d)**from the Centre for professional development
   e)from Regional school authority **f)**in some other way

12. What percentage of time spent in this training was used for purposeful learning activities?
   a) 0%   **b)** 1-19%   **c)** 20-39%   **d)** 40-59%   **e)** 60-79%   **f)** 80-99%   **g)** 100%

13. Would you recommend this training to your colleagues: **a)**YES**b)**NO

Write your reasons/observations:

Appendix 3 – Additional written comments given by the participants on the evaluation questionnaire

Creative, vivid, useful.
Excellent trainers.
The trainers were clear and precise. Materials extremely useful and applicable.
Encouraging activities. Suggestions.
To understand the many sides from which to view the teaching process.
New approach to seminar implementation.
Useful in realization of the teaching process.
Encouragement of the activity.
Expert trainers, examples from practices..
Clear, precise, eloquent trainers who pay attention to every participant of the seminar.
Improvement of work.
Knowledge acquired during the training was very applicable in practice.
Very useful seminar that will help me improve my teaching competencies.
To improve my work.
Content applicable in practical work.
Creativity in work.
Very useful.
Very useful and applicable.
Interesting, efficient, applicable.
Interesting, efficient, applicable.
Excellent seminar. Kudos to the trainers and authors.
Efficiency, being systematic, gradual progression.
Trainers ready for cooperation and respectful of each participant.
One of the trainers deaf to the needs of the participants.
Good trainers.
The group was active. Trainers are good, but not flexible. Mutual respect weak.
The seminar motivates us for improvement of personal work, we acquired new and expanded existing knowledge.
Great number of practical advice.
I think that this training enables application of some new ideas in teaching.
Everything went well.
The training is interesting and can be applied in practice.
Trainers are excellent! All the praises!
Practical application in the classroom of what we learnt,enabling us to create the action plan, development and improvement of the teacher competencies.
To improve the teaching process.
The aims are entirely applicable in teaching, they offer concrete solutions to everyday teaching, they cover all the ways of working with pupils, very nice and pleasant cooperation.
The increase of pupil achievement, time articulation during the class, applicability in teaching.
Acquired knowledge has application in practice.
The seminar is conceptualized so that everything can be applied in everyday work.
Very useful for the job we do.

Wonderful!
Very useful, educational. Good practical knowledge.
Seminar lasts a long time and it's hard to make it work with all the other obligations in school.
Very useful and professional instructions for the improvement of quality teaching.
One of the most interesting days thematically was evaluation.
Successful!
Useful.
I am content with this training.
Very concretely presented factors to which we should pay attention in teaching.
The seminar is excellent!
This is known and clear to teachers - that's why we do teamwork in schools.
It is a bit tiresome, perhaps it could be reduced to fewer days.
Useful for the improvement of everyday teaching.
Very educational, applicable, interesting.
Needed, useful, interesting, applicable.
Very interesting seminar.
Good organization. Trainers competent for the topics we covered.
Excellent seminar! All the praises to the authors and trainers of the seminar!
Practical, applicable, interesting.
Practical, applicable, interesting.
Practical, applicable in teaching.
Advice, instructions and innovations are applicable in everyday work.
Efficiency, innovativeness.
The seminar is very important for the improvement of the teaching process and development of the quality teacher, and it should include as many participants as possible.
The trainers are boring.
Clear, applicable and useful information can be obtained which improve teaching process and quality.
It is a quality seminar, it entirely responds to the demands of quality teaching.
The trainers know the topics well and they respond to questions that are unclear to us. The teaching methods can be learnt/improved for the better education.
The training would be useful for the novice teachers.
Acquired knowledge has great applicability in practice.
The training is useful, but using 9 days a year for professional development is very demanding.
OK.
The trainers did not work with pupils in elementary school, so they are not knowledgeable about the problems.
I learnt new techniques of teaching and evaluation for the improvement of pupil progress.
Useful.
Useful for the application in preparation, planning and organization of the lessons and improvement of skills which teacher should have.

Appendix 4 - Training evaluation - each seminar day

Please state how much do you agree with the following statements by putting X in an appropriate empty cell.

	Completely agree	Mainly agree	Mainly disagree	Completely disagree
Goals of the training were well explained				
Goals of the training are relevant to my work				
Goals of the training were achieved				
Topics/contents covered today are relevant to my work				
Working methods during the training were purposeful having in mind its goals				
I was activated by the working methods used in the training				
Aids and materials used in the training were well selected				
Time management was good				
Participants of today's training were active				
Working atmosphere was pleasant				
Working conditions were adequate				
Trainers were easy to follow and understand				
Trainers were open for questions and comments				
Trainers appreciated prior knowledge and experiences of participants				
I was motivated today to take active part in the training				
I was sufficientlyengaged in the training today				
This training was useful for me				
I would recommend this training to my colleagues				
Please give your additional comment about the training:				

Appendix 5 - Before and after questionnaire for participants

1. **Колико се често на Вашим часовима дешава нешто од следећег?**
   Заокружите само један одговор у сваком реду.

		никад или скоро никад	ретко	често	увек или скоро увек
a)	Праведан/насам према ученицима.	1	2	3	4
b)	На мојим часовима ученицисе осећају пријатно.	1	2	3	4
c)	Имам добар однос са ученицима.	1	2	3	4
d)	Подстичем ученике да постављају питања ако нешто не разумеју или их нешто занима током часа.	1	2	3	4
e)	За време часа охрабрујем ученике и хвалим њихов рад (нпр. одлично, само настави тако, можеш ти то).	1	2	3	4
f)	Пружам ученицима додатну помоћ када им је она потребна.	1	2	3	4
g)	Објашњавам градиво ученицима све док га не схвате.	1	2	3	4
h)	Пружам прилику ученицима да изразе своје мишљење.	1	2	3	4
i)	Показујем интересовање за учење сваког ученика.	1	2	3	4

2. **Колико се често на Вашим часовима дешава нешто од следећег у одељењима којима предајете?** *Заокружите само један одговор у сваком реду.*

		никад или скоро никад	ретко	често	увек или скоро увек
a)	Ученициседоброслажу.	1	2	3	4
b)	Ученицисерадодруже.	1	2	3	4
c)	Ученициселакодоговарају оковажнихствари.	1	2	3	4
d)	Кадатребадасеорганизујенешто, свиученицирадоучествују утоме.	1	2	3	4

О ДИСЦИПЛИНИ

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3. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) На часу владају бука и неред..	1	2	3	4
b) Ученици нису пажљиви на часу и не слушају шта им говорим..	1	2	3	4
c) Морам дуго да чекам да се ученици утишају.	1	2	3	4
d) На часу не може добро да се ради..	1	2	3	4

4. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Током часа има периода када ученици немају шта да раде.	1	2	3	4
b) Ученици дуго не започињу са радом након што час почне. .	1	2	3	4
c) Ученици губе пуно времена од часа на ствари које немају везе са лекцијом.	1	2	3	4
d) Започињем предавања на време.	1	2	3	4

5. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Ученици се придржавају јасних правила понашања на часу..	1	2	3	4
b) Одржавам ред на часу..	1	2	3	4
c) Успевам да ме ученици слушају током читавог часа..	1	2	3	4

d) Умем да смирим
немирне ученике. .... 1 .... 2 .... 3 4

___

О НАСТАВИ

___

6. **Колико се често на Вашим часовима дешава нешто од следећег?**
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) На почетку часа ученицима укратко представим оно што ћемо радити током часа	1	2	3	4
b) На крају часаученицима поновим најбитније делове лекције	1	2	3	4
c) На почетку часа ученике кратко подсећам на претходну лекцију	1	2	3	4
d) На почетку часаученицима постављам задатке или питања у вези са претходном лекцијом	1	2	3	4

7. **Колико се често на Вашим часовима дешава нешто од следећег?**
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Ученицима објашњавам на који начин су ствари које уче повезане са претходним градивом.	1	2	3	4
b) Повезујем градиво са градивом из других предмета.	1	2	3	4
c) Ученицима дајем примере помоћу којих могу лакше да разумеју градиво.	1	2	3	4
d) На почетку часа питамученике да ли нешто већ знају у вези са лекцијом коју ћемо учити.	1	2	3	4
e) Ученицима постављам задатке или питања која од њих траже да повезују ствари из више лекција.	1	2	3	4

8. **Колико се често на Вашим часовима дешава нешто од следећег?**
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Наглашавам најбитније ствари током часа (нпр. записујем их на табли)..	1	2	3	4
b) Прво објашњавам лакше, па онда теже ствари...	1	2	3	4
c) Све што се ради на часу има смисла и добро је повезано у једну целину.	1	2	3	4
d) Моја упутства (за решавање задатака, вежбе, пројекте и слично) су јаснатако да ученици знају шта се од њих тражи...	1	2	3	4
e) Ученицима постављам јасне циљеве шта треба да науче. ...	1	2	3	4

9. **Колико се често на Вашим часовима дешава нешто од следећег?**
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Ученицима објашњавам зашто је важно оно што ће учити на часу.. ...	1	2	3	4
b) Када ученици нешто раде на часу (задатак, вежбу, експеримент), знају заштото раде. ...	1	2	3	4
c) Ученицима постављам задатке или питања која им помажу да схвате значај онога што уче...	1	2	3	4
d) Од ученика тражим да наведу како и где могу да примене оно што уче на часовима.. ...	1	2	3	4
e) Ученицима указујем на то како садржаји из мог предмета могу бити корисни у свакодневном животу...	1	2	3	4

10. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Ученицима задајем домаће задатке (нпр. да одговоре на питања, попуне радне листове, ураде задатке и слично)	1	2	3	4
b) Проверавам да ли су ученици урадили домаћи задатак	1	2	3	4
c) Прегледам домаће задатке и проверавам да ли су тачни	1	2	3	4

11. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) После контролног или писменог задатка, ученицима задајем задатке или вежбе сличне онима на којима су највише грешили	1	2	3	4
b) Када ученици заврше самосталан или групни рад на часу, ја или неки ученик покажемо како је задатак или вежбу требало урадити	1	2	3	4
c) Шетам по учионици, проверавам рад ученика и дајем им корисне савете и предлоге.	1	2	3	4
d) Ученицима говорим колико добро раде на мојимчасовима	1	2	3	4
e) Ученицима говорим које су добре, а које лоше стране њиховог рада на мом предмету	1	2	3	4
f) Ученицима говорим шта треба да поправе у свом раду да би били бољи	1	2	3	4

12. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Ученицима показујем различите начине на које могу да реше задатке или да науче лекцију..	1	2	3	4
b) Подстичем ученике да сами проналазеразличите начине на које могу да реше задатке или да науче лекцију.	1	2	3	4
c) Ученицима дајем упутства и савете о томе како да се припремају за тестове, контролне или писмене задатке.	1	2	3	4
d) Учим ученике како да препознају шта је битно у лекцији или задатку.	1	2	3	4
e) Учим ученике како да решавају задатке корак по корак или рашчлане лекцију на мање делове да би лакше разумели градиво.	1	2	3	4
f) Учим ученике како да сами претражују различите изворе информација (нпр. књиге, новине, интернет) да би боље разумели градиво	1	2	3	4
g) Учим ученике како да користе табеле, графике, листе, цртеже, дијаграме и слично да би лакше разумели градиво	1	2	3	4

13. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

		никад или скоро никад	ретко	често	увек или скоро увек
a)	Ученицима постављампитања или задатке на које постоји више могућих решења или одговора.	1	2	3	4
b)	Ученицима помажем да уче из својих грешака.	1	2	3	4
c)	Ученицима омогућавам да учествују у планирању тема и активности које ћемо радити.	1	2	3	4
d)	Подстичем ученике да на часу размењују мишљења о лекцији, износе своје претпоставке и идеје и дискутују о њима.	1	2	3	4
e)	Постављам ученицима питања или задатке о којима мора добро да се размишља.	1	2	3	4
f)	Успевам да ученике заинтересујем за градиво..	1	2	3	4
g)	Другачије радим са ученицима који имају тешкоће у учењу и/или са онима који брже напредују.	1	2	3	4
h)	Постављам ученицима питања или задатке који захтевају да оно што су научили примене у новим ситуацијама..	1	2	3	4

14. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Ученицима дајем да за домаћи задатак вежбају или примене оно што су радили на том часу.	1	2	3	4
b) Ученицима дајем да на часу раде разноврсне вежбе или активности да би добро провежбали градиво.	1	2	3	4
c) Ученицима постављам питања или задатке који захтевају да оно што су научили примене у сличним ситуацијама.	1	2	3	4
d) Ученицима постављам задатке или питања која им помажу да увиде најважније делове лекције..	1	2	3	4
e) Ученици дајем да вежбају градиво док га добро не савладају.	1	2	3	4

15. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Ученицима постављам питања током часа да видим да ли разумеју оно што предајем.	1	2	3	4
b) Када ученици не разумеју питање, поставим га на други начин, тако да постане јасније и разумљивије.	1	2	3	4
c) Када поставим питање, дам ученицима довољно времена да о њему размисле.	1	2	3	4
d) Када ученик погреши у одговору, потпитањима му помогнем да разуме своју грешку и дође до тачног одговора.	1	2	3	4
e) Од ученика тражим да образложе решење задатка или одговор на постављено питање.	1	2	3	4
f) Питам ученике шта су разумели, а шта нису.	1	2	3	4

16. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Ученици ме слушају док држим предавање..	1	2	3	4
b) Ученици пишу оно што им диктирам.	1	2	3	4
c) Ученици преписују са табле.	1	2	3	4
d) Ученици држе презентацију.	1	2	3	4
e) Ученици изводе експеримент или практичну вежбу.	1	2	3	4

17. Колико се често на Вашим часовима дешава нешто од следећег?
Заокружите само један одговор у сваком реду.

	никад или скоро никад	ретко	често	увек или скоро увек
a) Користимpower point презентације, кратке филмове и слично да би ученицима боље објаснио/ла градиво.	1	2	3	4
b) Ученицима за домаћи задајем индивидуалне или групне пројекте.	1	2	3	4

18. Колико се слажете са следећим реченицама? *Заокружите само један одговор у сваком реду.*

	уопште се не слажем	углавном се не слажем	углавном се слажем	потпуно се слажем
a) Ученициволемојпредмет.	1	2	3	4
b) Ученициуживајудауче градивоизмог предмета.	1	2	3	4
c) Ученицима је мој предмет досадан.	1	2	3	4
d) Ученицижеледазнајувише о мом предмету.	1	2	3	4
e) Ученицисерадујучасовима из мог предмета.	1	2	3	4
f) Ученициволедачитајутекстове или гледајуемисије о темамакојесуповезанеса градивомиз мог предмета.	1	2	3	4
g) Ученицима је мој предмет толикозанимљив, дамикажуда и ваншколеразмишљају о стваримакојесуучилиначасу.	1	2	3	4

Appendix 6 - Final evaluation of teacher training questionnaire

Name: **Date:**   **Group:**
School: **Training location:**

Dear Madam/Sir,

This school year you have been participating in in-service training programme based on the dynamic model of educational effectiveness and improvement. Hereby, we want you to evaluate the whole training programme, to tell us how much of it you have implemented into your teaching, how did it affect your daily practice and what kind of effects you could observe. This information will be of great importance for us to further develop the training programme, thus we kindly ask you to thoroughly consider each question and provide sincere and comprehensive asnwers.

Next to each of the factor of quality teaching place mark X in the field which best describes your opinion (both on the left and the right side).

1. How familiar were you with the factors of quality teaching prior to the training?					2. How many new things have you learned about the factors of quality teaching during this training?			
Completely familiar	Mainly familiar	Mainly unfamiliar	Completely unfamiliar		Very	A lot	Not a lot	Quite a little
				Management of time				
				Classroom as a learning environment				
				Structuring				
				Orientation				
				Application				
				Modelling				
				Questioning				
				Assessment				

3. How useful was for you that what you have learned about the factors of quality teaching in this training?					4. How much attention (time) should be devoted to each of the factors of quality teaching in future in this training program?		
Very useful	Useful	Not much useful	Not useful at all		Give more time	Give the same time as it has now	Give less time
				Management of time			
				Classroom as a learning environment			
				Structuring			
				Orientation			
				Application			
				Modelling			
				Questioning			
				Assessment			

EFFECTS ON PUPILS

When you generalize your experiences with all that you have implemented in your teaching during the training program, and what has directly come from the training (new ideas, new techniques, realization of action plans and the like), how would you assess the impact it had on your pupils? *(Circle the letter next to your answer)*

5. Pupils were:

   a) More motivated to learn than usual
   b) As motivated to learn as usual
   c) Less motivated to learn than usual

How do you explain that?

_____
_____
_____

6. Pupils were:

   a) More activated in the classroom than usual
   b) As activated in the classroom as usual
   c) Less activated in the classroom than usual

How do you explain that?

_____
_____
_____

7. <u>Pupils have:</u>

    a) Better understood lessons than usual
    b) Understood lessons the same way as before
    c) Understood lessons poorer than usual

How do you explain that?

_____
_____
_____

8. <u>Pupils had:</u>

    a) Better communication / relation with you and other pupils
    b) Same communication / relation with you and other pupils
    c) Poorer communication / relation with you and other pupils

How do you explain that?

_____
_____
_____

TRAINING METHODS

Training program was implemented in 9 separate days, with around one month between each training day. During that time you had a task to develop and implement action plans, i.e. implement in your teaching some ideas and techniques that were previously elaborated in the training.

9. Is this an appropriate format for this training program?

    a) Yes   b) No

Please, explain:

_____
_____

10. If you have any suggestion regarding the format that would make this training more effective and more efficient, please describe it in short:

_____
_____

11. Between each two consecutive training days you had a task to design an action plan, to implement some ideas and techniques from previous training day and to record your observations about it. To what extent have you been involved in these activities?

a) I was very involved
b) I was moderetely involved
c) I was somewhat involved
d) I was very slightly involved

12. Did your responsibilites in school allow you enough time to prepare and implement ideas from the training?

a) Mainly yes   b) Yes and no   c) Mainly no

13. Have you cooperated with other colleagues while implementing ideas from the training (preparation, implementation, discussion)?

a) Mainly yes   b) Yes and no   c) Mainly no

14. At the beginning of each training day, the first part of the work was dedicated to reflexion on your experiences regarding the implementation of action plans. How useful was that part of the training?

a) That was very useful part of the traning
b) That was somewhat useful part of the training
c) That was mainly not useful part of the training
Please, explain:

_____
_____

15. Each training day comprised theoretical aspects of the given factor and practical parts (application, workshop approach). According to you, what was the relation between those two parts, when you take the whole training program in consideration? *(Please, circle only one answer)*

a) The ratio between theoretical and practical parts was well balanced
b) Not enough attention was given to practical application by participants
c) Not enough attention was given to theoretical aspects

16. On some training days you had an opportunity to look and to analyze video recordings of lessons as an illustration of a given factor. How useful this activity was for you?

a) That was very useful part of the traning
b) That was somewhat useful part of the training
c) That was mainly not useful part of the training

17. How do you evaluate hand-outs and other working materials that you received during the training?

    a) Materials were very useful
    b) Materials were somewhat useful
    c) Materials were not useful

    In which way these materials and abstracts should be improved?

_____
_____
_____

GENERAL EVALUATION OF THE TRAINING

18. To what extent your expectations from the training have been met?

    a)To a great extent   b) Moderately   c) To a little extent   d) Not at all

19. Which of your expectations were met the most?

a)_____
b)_____
c)_____

20. Which of your expectations were met the least?

a)_____
b)_____
c)_____

21. If you would like to recommend this training to your colleagues, what would you tell them?

_____
_____

22. If you would like to refrain your colleagues from attending this training, what would you tell them?

_____
_____

23. If you have any other comment about this training, please write it down.

_____
_____
_____

Thank you!

Appendix 7 - Questionnaire on Research report and Handbook for quality teaching

QUESTIONNAIRE ON RESEARCH REPORT AND HANDBOOK FOR QUALITY
TEACHING

Dear Madam / Sir,

This is a brief questionnaire with which we want to get your opinion about the document
'Research report and handbook for quality teaching' that your school received through
participation in the Comenius study 'Improving educational effectiveness of primary schools
(IEEPS)'. Your opinion on this document is very important to us, for its further development,
so please give us your honest answers and fill in the survey in its entirety. The survey is
anonymous.

1. What is your job position?

    a. School principal
    b. Assistant school principal
    c. School counsellor
    d. Teacher

The document consists of two parts: Research report and Handbook for quality teaching. This
set of questions pertains to Research report (first part of the document).

In each row, mark the answer that best expresses your opinion, i.e. your level of agreement
with a given statement.

		Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	The report is written in easy to understand language.					
2	The report uses too many technical terms.					
3	It was easy for me to understand what the report says.					
4	The style of writing is tailored to the school staff.					
5	The report has a good structure.					
6	The report is too large.					
7	The report contains an adequate amount of information.					
8	Graphical displays are clear.					
9	I can easily interpret charts					
10	The report provides relevant information					

		Strongly agree	Agree	Undecided	Disagree	Strongly disagree
11	Data contained in the report are important for the school.					
12	The report is useful, usable.					
13	I learned something new from this report.					
14	The report gave me the expected information.					
15	The research method is well explained.					
16	The research results are well described.					
17	The results of this research are clear to me.					
18	I think it is important that as many school employees become informed about the content of this report.					

Next set of questions pertains to the Handbook for quality teaching (second part of the document). In each row, mark the answer that best expresses your opinion, i.e. your level of agreement with a given statement.

		Strongly agree	Agree	Undecided	Disagree	Strongly disagree
19	The handbook uses the terminology I am familiar with.					
20	It was easy for me to understand what the handbook says.					
21	The style of writing is tailored to the school staff.					
22	The handbook has a good structure.					
23	The handbook is too large.					
24	Factors of effective teaching are clearly described.					
25	Handbook provides good guidelines for improving the quality of teaching.					
26	The handbook is useful, usable.					
27	The handbook provides a good description of the possible approaches and concrete procedures that teachers can apply in their work with pupils.					
28	I learned something new from this handbook.					
29	I think it is important that as many school employees become informed about the content of this handbook.					

30.Please write your comments or thoughts you have in relation to this report/handbook:_____

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Appendix 8 - Questionnaire on School performance feedback report

QUESTIONNAIRE ON SCHOOL PERFORMANCE FEEDBACK REPORT

Dear Madam / Sir,

This is a brief questionnaire with which we want to get your opinion on the report that your school received through participation in the Comenius study 'Improving educational effectiveness of primary schools (IEEPS)'. Within this project, based on multiple data sources, a report entitled 'Individual feedback on pupil achievement and the pedagogical added value of the school' was made. The idea is that this report should be used as an instrument in the process of improving the educational attainment of your pupils, i.e. as a support for the planning of future work and school development. Your opinion on this report is very important to us, for its further development, so please give us your honest answers and fill in the survey in its entirety. The survey is anonymous.

1. What is your job position?

    a. School principal
    b. Assistant school principal
    c. School counsellor
    d. Teacher

In each row, mark the answer that best expresses your opinion, i.e. your level of agreement with a given statement.

		Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	The report is written in easy to understand language.					
2	The report uses too many technical terms.					
3	It was easy for me to understand what the report says.					
4	The style of writing is tailored to the school staff.					
5	The report has a good structure.					
6	The report is too large.					
7	The report contains an adequate amount of information.					
8	Graphical displays are clear.					
9	I can easily interpret charts					
10	The report provides relevant information					

		Strongly agree	Agree	Undecided	Disagree	Strongly disagree
11	Data contained in the report are important for the school.					
12	The report is useful, usable.					
13	I learned something new about my school on the basis of this report.					
14	The report gave me the expected information about the school.					
15	I understand the concept of pedagogical added value.					
16	I understand the difference between the expected and observed achievements.					
17	The limitations of this report, i.e. of information contained herein are clear to me.					
18	The report allows fair comparison of schools, by taking into account the characteristics of the environment in which pupils live.					
19	I think that this report will really be used at my school to improve the academic achievement of pupils.					
20	I think that this report will really be used at my school to improve teaching and learning.					
21	I think that this report will really be used at my school to improve the work organization and functioning of the school as an organization.					
22	I think it is important that as many school employees become informed about the content of this report.					
23	It would be good if the school received such reports at the end of each school year.					
24	To analyse the data from the report, school employees need additional professional support.					

25.Please write your comments or thoughts you have in relation to this report:

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