



FAMT&L

FORMATIVE ASSESSMENT IN MATHEMATICS FOR TEACHING AND LEARNING

Work Package 6 - *Assessment of pilot training
courses and Quality Assurance*

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<p>To evaluate first and second implementation Inholland has defined an evaluation strategy. Quality of the training course will be measured based on criteria for content and concept. This report describes the foundations of the evaluation strategy, the evaluation strategy itself and the outcomes.</p> <p>The evaluation strategy describes the means and goals of each step in the evaluation. The goals are derived from the objectives of the project and external sources, such as literature. Goal of a common strategy is to validate outcomes from different partners with the opportunity to share conclusions and recommendations.</p> <p>Extensive peer review is an integral part of the evaluation strategy, both in 1st and 2nd implementation. From the network of the partners externa land independent reviewers provided feedback on the design, content and concept of the training for each partner. Also involved in this external review were participants of the pilot training courses.</p> <p>This report justifies the defined evaluation strategy, describing literature on quality assurance, evaluation strategy and effective teacher professionalization. It shows the results and actions after the 1st implementation. It reports on the evaluation of the five individual pilot training courses and external evaluation. It describes the conclusions, strong and weak points of the designed pilot training course and states recommendations.</p>			

Executive summary

This document outlines the methods and instruments of formative and summative evaluation that will be used in the evaluation strategy of the pilot training course. It outlines the consortium's vision on quality, specifies the indicators and means for evaluation, outlines the tools in terms of templates, techniques and products used in the evaluation.

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1. About the document

This document will outline the methods of evaluation the 1st and 2nd implementation of the pilot training courses in the project *Formative assessment in Mathematics teaching & Learning*. It specifies the indicators for monitoring of quality, and outline the tools in terms of templates, techniques and products used to evaluate the designed training courses. It will serve as a guide for all evaluation strategies and activities. The evaluation Plan (hereinafter EP) defines criteria for the evaluation of the pilot training courses,

FAMT&L follows a three level evaluation plan:

- 1) **Level one** is a study of literature on evaluation in general and evaluation of education in particular. This study focusses on evaluation strategies, approach and outcomes. Integral part of the evaluation and therefore of this step is the role of critical friends
- 2) **Level two** is a study on effective teacher training and change in teacher behaviour through training. To define criteria and goals for evaluation, this level is an essential step in evaluating the pilot training courses
- 3) **Level 3** is defining an evaluation approach specially for the project. It consist of strategies, formats and plan for evaluation

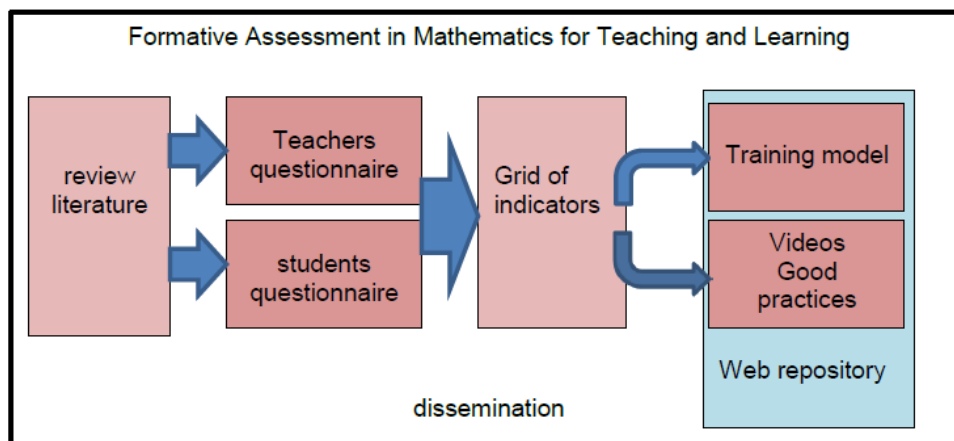
Chapter 2 of this document describes the profile of the FAMT&L project and its focus on *classroom formative assessment*. The 3rd chapter focusses on evaluation and evaluation of training courses. There is specific attention for the role of critical friends. The 4th chapter is a resume of the study done about teacher training and training strategies. These chapters form the necessary basis of the evaluation strategy used by the consortium which is elaborated in chapter 5. The 6th and 7th chapter is a review on the 1st and 2nd implementation respectively of the pilot training courses in the five countries in the consortium. In the 7th and last chapter conclusions are stated from the evaluation, strengths and weaknesses are identified and possible follow up is described.

2. The FAMT&L project

2.1 profile

The international team of researchers *Formative Assessment in Mathematics for Teaching and Learning's* main objective is to design a virtual environment (a web repository) for in-service teachers' training in formative assessment. This learning environment should provide a variety of tools and objects (examples of learning contexts, video of situations of teaching mathematics, assessment tools, training paths and their specific use in the teaching of mathematics), including a guideline to be used in in-service secondary schools teachers training courses.

To achieve objectives the FAMT&L constructed an innovative path to ensure the quality of the training and content of the web repository. This path started with a review of existing literature from which our starting point was defined, consisting of a work definition of formative assessment and a structure to build on. In the second phase a questionnaire was developed for students and teachers. The analysis of the results from these questionnaires were used to form a grid with indicators used for development of the training. These results also form the building blocks for analyzing and metadation of videos of good practices for the training course. Phase three of the constructed path is the creation of the web repository. The final phase will consist in training teachers.



2.2 Background

Quality and effect of education is of great importance to an individual and a society. We need to raise student-achievement because this matters:

- For the individual resulting in an increased life-time salary, improved health and a longer life
- For a society resulting in in increased tax-revenue, lower healthcare and reduced criminal costs

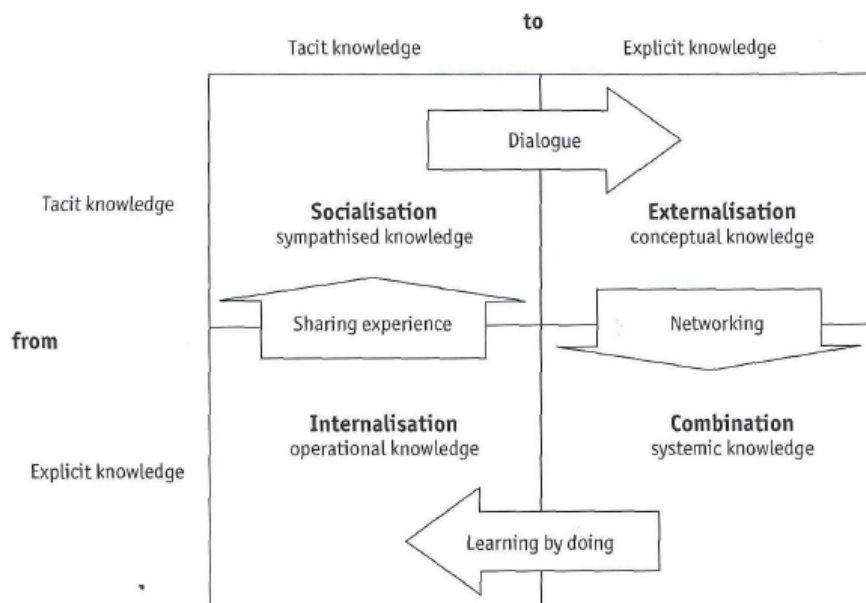
If we accept that teacher quality is the major determinant of how much progress a student makes, we are confronted with the issue on how to achieve higher teacher quality. The most economical way to improve teacher quality is getting teachers to make more use of formative assessment (Wiliam, Assessment for learning: why, what and how?, 2009).

Both educational research as well as classic teacher professionalization have little or no impact on teacher behaviour in the classroom. Nakona and Takeuchi outlined four basic models of knowledge:

- Socialisation
- Externalisation
- Combination
- Internalisation

They propose a “*knowledge spiral*” that is generated by moving around the four modes of knowledge:

- Dialogue
- Networking
- Learning by doing
- Sharing experiences



Knowledge transfer (Nanoka and Takeuchi, 1995)

The basic insight in this model is that *knowing* something is not the same as being able to do it.

With this in mind the consortium of FAMT&L set about developing a training model for in-service teachers.

3. Evaluation of teacher professional development

The Integral Evaluation Plan consists of procedures, criteria and resources for monitoring and internal and/or external. It also covers monitoring of interim and final results with regard to the needs of the target group(s) and sector(s) and of the potential end-users.

3.1 Levels of evaluation

Effective evaluation begins even before a program starts:

"Trainers must begin with desired results and then determine what behavior is needed to accomplish them. Then trainers must determine the attitudes, knowledge, and skills that are necessary to bring about the desired behavior(s). The final challenge is to present the training program in a way that enables the participants not only to learn what they need to know but also to react favorably to the program." (Kirkpatrick, 1993)

It is important that the results are defined in measurable terms so that all involved can see the ultimate destination of the initiative. Clearly defined results will increase the likelihood that resources will be used most effectively and efficiently to accomplish the mission.

Four levels of evaluation

The Kirkpatrick model was first introduced in 1954 by Dr. Donald Kirkpatrick. In 2008 an expansion of the original four levels was made in the Kirkpatrick Partnership model. Finally in 2010 Jim and Wendy Kirkpatrick clarified the original four levels in the *New World Kirkpatrick model*.



Level 1 Level 2 Level 3 Level 4
Reaction Learning Behavior Results

Level 1: Reaction

To what degree participants react favourably to the training or customer Satisfaction

Engagement: The degree to which participants are actively involved in and contributing to the learning experience

Relevance: The degree to which training participants will have the opportunity to use or apply what they learned in training on the job

Level 2: Learning

To what degree participants acquire the intended knowledge, skills, attitudes, confidence and commitment based on their participation in a training event

Knowledge: "I know it."

Skill: "I can do it right now."

Attitude: "I believe this will be worthwhile to do on the job."

Confidence "I think I can do it on the job."

Commitment "I intend to do it on the job."

Level 3: Behaviour

To what degree participants apply what they learned during training when they are back on the job

Required Drivers: Processes and systems that reinforce, encourage and reward performance of critical behaviours on the job

Level 4: Results

To what degree targeted outcomes occur as a result of the training event and subsequent reinforcement

Leading Indicators: Short-term observations and measurements suggesting that critical behaviours are on track to create a positive impact on desired results

3.2 Design evaluation on training courses

Effective evaluation of a training is seen as an important step for different reasons:

- Reflection ensures a higher standard of the training course because of structured feedback and consequent adaptation of model and materials;
- In the development of a training the direct feedback of participants, being the trainer and trainees, are most likely not received;
- It can create a higher commitment from future participants.

Before an evaluation can be done with effectively the outcomes of the training must be defined. The second step is the designing of evaluation instruments. Since the course is directed at formative assessment, or *Assessment for learning*, evaluation of the learning process is part of the training and can as be used for evaluation of the training course. The third step consist of collecting data and drawing conclusions. These conclusions will be used to interview the trainer and some trainees.

3.3 The purpose of evaluation

Process evaluation

Process evaluation is a means of implementing and refining the program's design. This evaluation procedure addresses information about how well how well the implementation and design of the program is going and what, if any, obstacles conflict with the program's success.

The key factor in implementing this evaluation procedure is interaction between evaluators, designer and stakeholders.

Product evaluation

Product evaluation refers to ultimate decision associated with the fate of the program (Fitzpatrick et al., 2004) . This decision may include modification or refocusing of the program under review (Stufflebaum, 2003). The outcome is a product of collections of descriptions and numerous archived judgements about the objectives, merit and worth of the program.

In order for the evaluator to arrive at a conclusion he must collect both quantitative and qualitative information from personnel and stakeholders involved. If necessary product evaluation can be divided into subcategories of impact, effectiveness, sustainability and transportability in order to gain more concise information about the long term effects of the program.

Outcome-based evaluation

In outcome-based evaluation (OBE) four types of evaluation are most commonly used:

1. Program evaluation
 - a. This uses person-referenced or organization-referenced outcomes to determine whether a program is meeting the desired outcomes and uses.
2. Effectiveness evaluation
 - a. This strives to report the extent to which a program is meeting its goals and objectives.
3. Impact evaluation
 - a. This studies whether or not a program has made difference for its stakeholders compared to an alternative.
4. Policy evaluation
 - a. This researches the equity, efficiency or effectiveness of outcomes for a program. (Schalock, 2001)

Program evaluation

Program evaluation typically strives to answer the question, “What outcome is my program producing in its serving recipients?” These generally fall into four categories:

1. Organization performance outcomes
2. Organization value outcomes
3. Individual performance outcomes
4. Individual value outcomes

Outcomes must be measured for performance and consumer appraisal in the area of satisfaction and also for functionality in the area of adaptive behavior in the role status. Evaluations are more successful if stakeholders participate in the evaluation and are engaged in the decision-making process.

Program evaluations are conducted a systematic and objective processes that collect, analyze and interpret information (Sanders, and Worthen, 2004). More specifically, program evaluation deals with collecting and documenting information about a particular program to enable valid decision making to a particular aspect of that program (McNamara, 2000). The ultimate purpose of program evaluation is to arrive at a definitive, intelligent, objective and valid conclusion regarding specific objectives and questions related to a program’s overall effectiveness (Fitzpatrick et al).

Effectiveness evaluation

Effectiveness evaluation strives to answer the question: “Is my program meeting its goals and objectives?” Its primary uses are:

1. Compare program’s goals with its achieved outcomes;
2. Report the program’s performance and value outcomes;
3. Provide formative feedback for program change and improvement;

(Schalock,2001).

The difference with program evaluation is that the effectiveness evaluation establishes a comparison condition against which accountability and outcomes can be judged.

There are five steps for analysis:

- a) Performance goals
- b) Purpose and comparison condition
- c) Methodology
- d) Data collection and analyses
- e) Person- and organization-referenced outcomes

3.4 External evaluators, critical friends

A critical friend can be defined as “a trusted person who asks provocative questions, provides data to be examined through another lens, and offers critiques of a person’s work as a friend. A critical friend takes the time to fully understand the context of the work presented and the outcomes that the person or group is working toward. The friend is an advocate for the success of that work.” (Costa, 1993)

The role of the critical friend is therefore a **strategic** one and can be important in assisting improvement. It is essentially a role of support and challenge.

Critical friendship has also been described as less formal than mentoring or coaching and probably best described as “a professional relationship based on mutual regard and the willingness to question and challenge.” (Meeting the Challenge: Growing Tomorrow’s School Leaders, 2005).

3.4.1 Role of critical friend

In the cycle of development of the FAMT&L-project critical friends are involved at the final stage of design. The role of the critical friends is to question and challenge from the perspective of a teacher-trainer as well as teacher in order to support the reflective process and inform the mid cycle self-assessment.

At this stage of the project the critical friends provide challenges on the:

- Design of the training
- Content of the training

Therefore their expertise lies in:

1. Teacher trainer with expertise on curriculum design
2. In service teacher

4. Effective teacher training

4.1 *Powerful professional development*

“ Nothing has promised so much and has been so frustratingly wasteful as the thousands of workshops and conferences that led to no significant change in practice when teachers return to their classroom.” (Fullan & Stiegelbauer, 1991)

Reasons why professional development programs appear to be ineffective has been subject of research in the united States Staten (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). Outcome is that every professional development program should be aimed at raising student achievement.

Powerful professional development deepens teachers' subject-area knowledge. Traditionally, a substantial portion of staff development has provided teachers with generic instructional skills such as cooperative learning separate from specific academic disciplines. Little attention was paid to teachers' knowledge of the subjects they teach and to instructional strategies within particular subject areas (Sparks, 2002).

A number of experts and organizations have suggested that the most promising professional development programs or policies are those that:

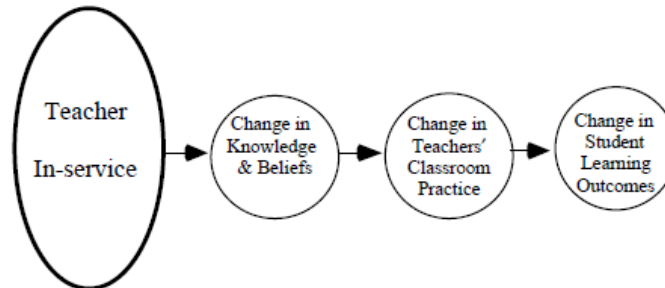
- stimulate and support site-based initiatives. Professional development is likely to have greater impact on practice if it is closely linked to school initiatives to improve practice.
- are grounded in knowledge about teaching. Good professional development should encompass expectations educators hold for students, child-development theory, curriculum content and design, instructional and assessment strategies for instilling higher-order competencies, school culture and shared decision-making.
- model constructivist teaching. Teachers need opportunities to explore, question and debate in order to integrate new ideas into their repertoires and their classroom practice.
- offer intellectual, social and emotional engagement with ideas, materials and colleagues. If teachers are to teach for deep understanding, they must be intellectually engaged in their disciplines and work regularly with others in their field.
- demonstrate respect for teachers as professionals and as adult learners. Professional development should draw on the expertise of teachers and take differing degrees of teacher experience into account .
- provide for sufficient time and follow-up support for teachers to master new content and strategies and to integrate them into their practice.

(Corcoran, 1995)

4.2 Modeling professional change

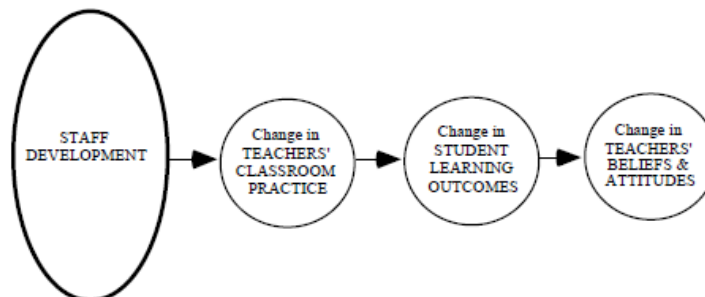
Many programs are based on the idea that changes in belief and attitude will cause a change in classroom behavior. This in its turn would lead to improvement in student learning (figure 1).

figure 1



Gusky (Gusky, Staff development and the process of, 1986) provided an alternative model, in stating that significant changes in belief and attitudes would only arise after changes in student learning outcomes. A teacher tests a change in practice and experience a change in student learning. Then they change their belief and attitude towards the change (figure 2).

figure 2



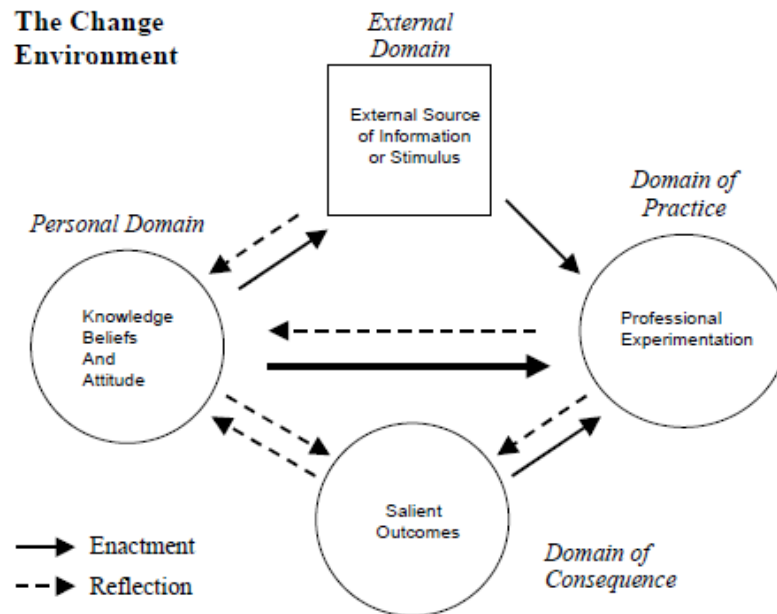
This model can be criticized as being linear. Clarke used the same sequence of elements as Gusky but in a cyclic pattern with multiple entry points (Clarke D. J., 1988). Challenging teachers approaches, thereby creating a *cognitive conflict*, prior to them attempting to change their classroom practice could be a motivator for change (Cobb, Wood, & Yackel, 1990).

A further model of the teacher change process was developed by Clarke and Peter (1993), and later revised by an international research group interested in teacher professional growth as the Interconnected Model of Teacher Professional Growth (Teacher Professional Growth Consortium, 1994).

The Interconnected Model (in Fig. 3) suggests that change occurs through the mediating processes of reflection and enactment, in four distinct domains which encompass the teacher's world:

- Personal domain
- Domain of practice
- Domain of consequence
- External domain

figure 3



This model recognizes the complexity of professional growth through the identification of multiple growth pathways between the domains. Its non-linear nature, and the fact that it recognizes professional growth as an inevitable and continuing process of learning, distinguishes this model from others identified in the research literature. This model also identifies the mediating processes of reflection and enactment as the mechanisms by which change in one domain leads to change in another. Any processes of professional growth represented in the model occur within the constraints and affordances of the enveloping change environment (Hollingsworth, 1999)

4.3 Organizing professional development

4.3.1 First content then concept

The purpose of professional development must guide the way this is organized. Effectiveness of one-day-workshops does not appear to be great if its goal is to change teacher behavior in classroom situations. First focus must be on teacher skills that improve student learning, then a choice must be made for an appropriate way or environment in which this skill can be learned.

4.3.2 Conditions for success

Five principles for a learning environment for teachers have been concluded on a trial-and-error basis. There might be others, not mentioned principles. If one of these principles are missing, there might still be a successful professionalization strategy. However, experience shows the change of success is lower. These principles have only been researched in an environment aimed at raising teacher skills in the use of classroom formative assessment (William, Keeping learning on track: Classroom assessment and the regulation of learning, 2007) :

- Choice:
An individual teacher can best determine which development has the greatest impact on the learning of his or her student. Therefore the teacher must have the choice what to develop.
- Flexibility
There are many techniques in formative assessment. These do not have to be copied but can be changed. Small changes can have great effects. A teacher must have the freedom to change fitting the circumstances. A teacher who has the opportunity to change a technique, is more inclined to use it more often.
- Small steps
Teachers learn on the fly, that means during their everyday teaching. Therefore changes should be made in small steps. It also gives the teacher to practice the technique more often and through repetition integrate in a daily practice.
- Accountability
There are many factors that influence students' achievement. A teacher can only influence one, the learning environment in the classroom. Research shows that the teacher does make the difference. Therefore he or she must be held accountable for the classroom environment. The teacher must improve skills to improve students' achievement and teacher leadership must demand a improvement attitude from teachers.

- Support
Consequently to accountability teacher leadership must support the teacher in time, focus and facilitate. The school and leadership take responsibility in supporting the teacher:
 - 1) Create expectation of continuous professional development
 - 2) Keep focus on learning that improves student achievement
 - 3) Facilitate in time, place and support
 - 4) Encourage risk-taking and defend it

4.3.3 Organization

An effective way to organize professional development satisfies (most of) the conditions mentioned in the previous sections of this chapter. It gives the teacher a choice and a structure to improve. It is vital to learn with professionals and make room for discussion and sharing ideas. This can be done effectively in a *Professional learning community*.

Professional learning community

A professional learning community (PLC) is a method to foster collaborative learning among colleagues within a particular work environment or field. It is often used in schools as a way to organize teachers into working groups of practice-based professional learning.

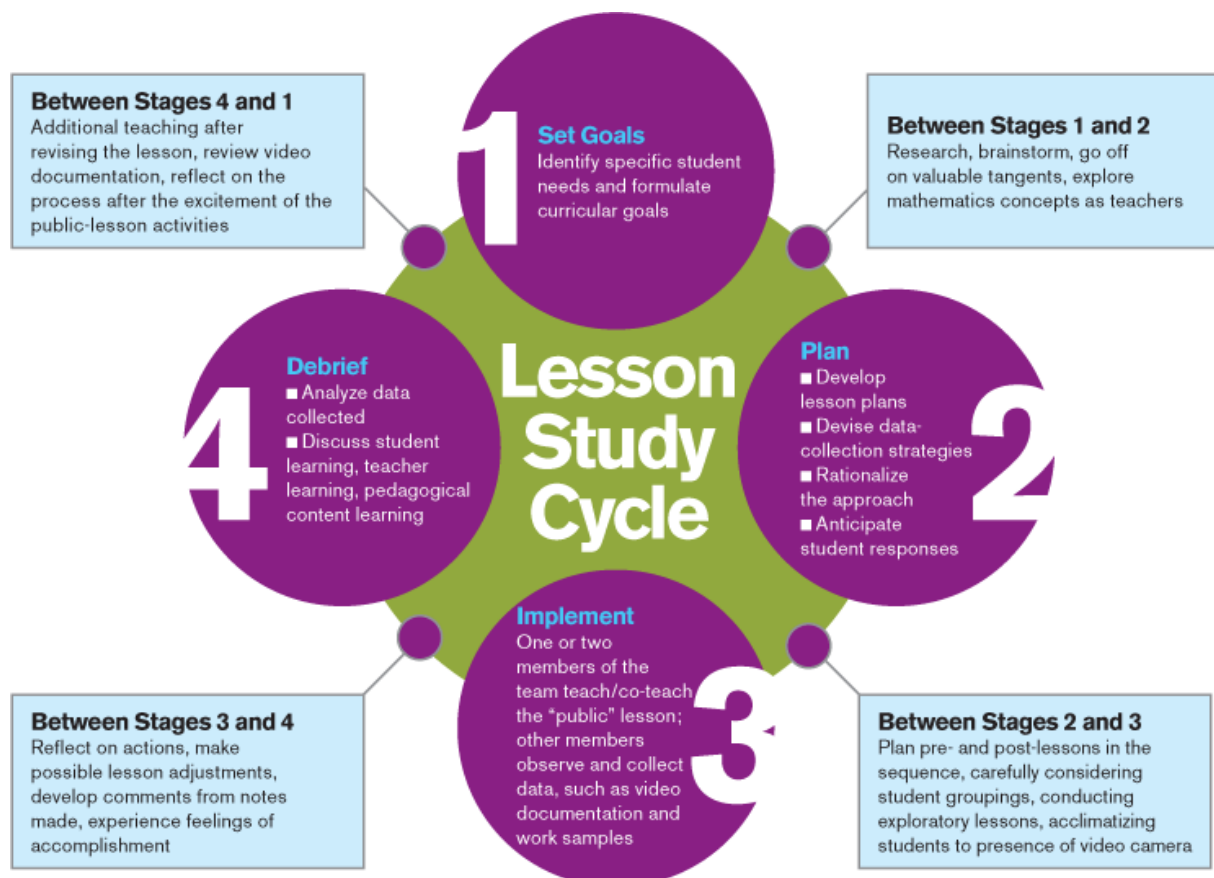
“If schools are to be significantly more effective, they must break from the industrial model upon which they were created and embrace a new model that enables them to function as learning organizations. We prefer characterizing learning organizations as “professional learning communities” for several vital reasons. While the term “organization” suggests a partnership enhanced by efficiency, expediency, and mutual interests, “community” places greater emphasis on relationships, shared ideals, and a strong culture—all factors that are critical to school improvement. The challenge for educators is to create a community of commitment—a professional learning community.”

(Dufour & Eaker, R.E., 1998)

Lesson study

Working in a PLC must be organized as well. *Lesson study* is a professional development process that Japanese teachers engage in to systematically examine their practice, with the goal of becoming more effective. This examination centers on teachers working collaboratively on a small number of "study lessons". Working on these study lessons involves planning, teaching, observing, and critiquing the lessons. To provide focus and direction to this work, the teachers select an overarching goal and related research question that they want to explore. This research question then serves to guide their work on all the study lessons.

While working on a study lesson, teachers jointly draw up a detailed plan for the lesson, which one of the teachers uses to teach the lesson in a real classroom (as other group members observe the lesson). The group then comes together to discuss their observations of the lesson. Often, the group revises the lesson, and another teacher implements it in a second classroom, while group members again look on. The group will come together again to discuss the observed instruction. Finally, the teachers produce a report of what their study lessons have taught them, particularly with respect to their research question.



Microteaching

In the last years the didactic technique of microteaching has gained much credit; actually it is a technique that dates back to the experiences in the '60-'70's by K. Romney and D. Allen at Stanford University. Allen himself defines (Allen, 1967) microteaching as a method which consists mainly in having the trainee teacher to present to a small group of students a short time teaching session, concentrated on a specific subject.

The short session is monitored from trainers which use video-recording as main tool. This will allow the supervisors of the microteaching session to show to the trainees, via the analysis of the teaching sequence, which abilities will help them to solve the problem in their teaching practice and the errors they can do in their activities. Such an analysis can promote and facilitate a reflection on what is done in the class, which contributes to an improvement of the teaching practices.

This attention to the reflexivity as an attitude of the teachers to analyze and think over about their own practices, is essential to get an educational success (Dewey, 1961), and is what allows us to speak of the teachers as reflective practitioners (Schön, 2006), and of a professional knowledge of their own (Innovare la formazione: il ruolo della videoeducazione per lo sviluppo dei nuovi educatori., 2014), and of a professional knowledge of their own

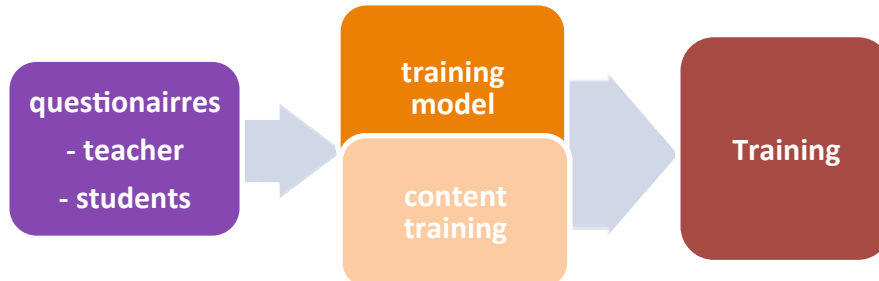
The idea that guided the recording-analysis of the videos was to be able to use the analyzed video-sequences as part of training courses for in service teachers that can acquire specific skills in the use of formative assessment as an element that improves the quality of teaching.

In line with the debate on teacher training, the observation of teaching practices by themselves would allow changes in their behavior and encourage processes of reconsideration on assessment and teaching.

In fact, the pilot course that will be developed will seek to use the video sequences analyzed in order to promote critical thinking of teachers in training. In the cycle of lesson study it can be used in step 3, replacing a public lesson.

5. Evaluation strategy

5.1 Focus of evaluation



The evaluation guidelines is divided into four categories:

1. The training model and how it is derived from the questionnaires
2. The content of the training and how this is derived from the questionnaires
3. The training model from the point of view of the trainer and trainee
 - a. in the design process, before training is done
 - b. after the training
4. The content of the training from the point of view of the trainer and the trainee
 - a. in the design process, before training is done
 - b. after the training

These guidelines focusses on:

- goal of the evaluation
- means of evaluation
- reason of evaluation
- organization
- evaluator

5.1.1 Methodolgy

Step 1: Defining outcomes

Outcomes are defined as learning goals of the training:

I, the trainee, of the training course on formative assessment:

1. know a theoretical framework on formative assessment;
2. can arrange a classroom situation in which formative assessment is fully integrated;
3. can analyse a classroom situation with predetermined indicators;
4. can explain why formative assessment is an educational intervention with a high rate of effectiveness

In the designed evaluation instruments, which will be used in the training itself, these learning goals are made more explicit.

Step 2: Evaluation instruments

For the porpoise of evaluation of the training course there are two questionnaires:

- questionnaire to be used during the training
- questionnaire to be used after the training

Since there is a long and a short training designed there will be two questionnaires to be used either during a long or during a short training.

Bot evaluation instruments are related to all four levels of evaluation.

Step 3: Collecting data and drawing conclusions

From the data collected conclusions will be stated. These statements are the basis of step 4, the interview of the trainer and some trainees.

Step 4: Interview

The porpoises of both interviews are:

- to validate the stated conclusions;
- to obtain advice on how to improve the training model and content
- to get other feedback that could not be concluded from the questionnaires

5.1.2 Elucidation on focus points

By means of evaluation it is defined what instruments are used. There will be a choice of the following means:

- interview
- questionnaire and interview

The following reasons are named for the evaluation:

- process evaluation
- product evaluation
- Outcome-based evaluation:
 - o Program evaluation
 - o Effectiveness evaluation

These instruments have been chosen because they give the most amount of information in the most efficient way.

For each category of evaluation possible evaluators are defined. For each possible stakeholder it is defined if they are:

- external: a stakeholder is in no way affiliated with the FAMT&L project or any of its participating universities or schools
- internal: a stakeholder can be affiliated with a participating university or school, but not with the project itself

Stakeholder involvement

		Evaluators/Stakeholder				
		experts on formative assessment (external)	teacher trainers	teachers	trainees	trainer
A	From questionnaires to training model	x				
B	From questionnaires to content training	x	x			
C	Training model		x	x		
D	Content training		x	x	x	x
E	Training				x	x

A: from questionnaires to training model

Goal: To obtain feedback and recommendations on the proposed training model focused on objectives and basis on which the model is designed.

Means: - interview

Reason: process evaluation

product evaluation

Organization: provide evaluator with for study before interview:

- Questionnaires and results*
- analyses of questionnaires*
- short substantiation of model describing and elucidation of choices made in designing model*
- training model*
- list of indicators on which the model is asked to be evaluated*

interview evaluator

Stakeholder: researcher on formative assessment (external)

designer of teacher program's (external)

B: from questionnaires to content model

Goal: To obtain feedback and recommendations on the proposed content of training model focused on outcomes of questionnaires

Means: - interview

Reason: process evaluation

product evaluation

Organization: *provide evaluator with for study before interview:*

- *questionnaires and results*
- *analyses of questionnaires*
- *training model*
- *learning goals derived from the questionnaires*
- *list of indicators on which the content is asked to be evaluated*

interview evaluator

Stakeholder: *researcher on formative assessment (external)*
designer of teacher program's (external)
teacher trainer (external/internal)

C: training model

Goal: *To obtain feedback on the training model from perspective of a teacher trainer and a teacher.*

Means: *- questionnaire*
- interview

Reason: *process evaluation*
product evaluation

Organization: *provide evaluator with*

- *training model*
- *short substantiation of model describing and elucidation of choices made in designing model*
- *training model*
- *list of indicators on which the model is asked to be evaluated*
- *questionnaire*

interview evaluator

Stakeholder: *teacher trainer (external/internal)*
Teacher (external/internal)

D: content training

Goal: To obtain feedback and recommendations on the proposed content of training model.

Means: - questionnaire

- interview

Reason product evaluation

outcome-based evaluation:

program evaluation

Organization: provide evaluator with for study before interview:

- training model*
- learning goals*
- list of indicators on which the content is asked to be evaluated*
- questionnaire*

interview evaluator

Stakeholder: teacher trainer (external/internal)

Teacher (external/internal)

E: training

Goal: To obtain feedback and recommendations on the training

Means: - questionnaires

- interviews

Reason: product evaluation

outcome-based evaluation:

program evaluation

effectiveness evaluation

Organization: provide evaluators with for study before interview:

- questionnaire

interview evaluators

Stakeholder: trainer

Trainee

Reporting

Each partner has the responsibility to evaluate the five categories and report the outcomes. The report will consist of:

1. outcomes of the evaluation through interview and/or questionnaires.
2. Recommendations made by the evaluator
3. In case of external evaluator:
 - a. Name
 - b. Institution and role
 - c. Expertise
 - d. Declaration of independence
4. In case of internal evaluator:
 - a. Name
 - b. Institution and role
 - c. Expertise

Timeplan

		nov-15	dec-15	jan-16	feb-16	mrt-16	apr-16	mei-16	jun-16	jul-16
A	From questionnaires to training model	A	A	A						
B	From questionnaires to content training	B	B	B	B	B				
C	Training model	C	C	C						
D	Content training	D	D	D	D	D				
E	Training						E	E	E	E

5.2 Approach working with critical friends

The following model is intended to structure the cooperation between the consortium and the critical friends. It offers a structure within which issues can be clarified and actions can be formulated

- Step 1:** critical friends are informed about the
- Approach of the consortium
 - Outcomes to date
 - Design of training
 - Content of training in relation to outcomes of questionnaires
- Step 2:** critical friends are informed about their proposed role and scope of challenges asked by the consortium.
- Step 3:** critical friends question and challenge the consortium in a face-to-face-meeting . Together, the consortium and critical friends analyse the risks, alternatives and consequences of each potential solution.
- Step 4:** Consortium nominates solutions which should be progressed
- Step 5:** Together, the consortium and critical friends list all possible obstacles to achieving the solution.
- Step 6:** Critical friends assists to brainstorm possible strategies to minimise/overcome these obstacles.
- Step 7:** The consortium devise an implementation plan
- Step 8:** Together, the consortium and critical friends review the outcomes of the action plan and continue the process until all relevant issues are worked through/resolved.

Step 1 and step 2 are done in preparation of the meeting in Switzerland, April 2016.

Steps 3 to step 8 are done at meeting in Switzerland, April 2016.

5.2.1 Scope of challenges

In this paragraph the scope of the challenges by both critical friends are directed and questions to guide the critical friend are given.

Product evaluation

Question: Does the approach of the consortium guarantee a

- Effective
- Sustainable
- Transportable

training both for in-service teachers as well as students training to become a teacher?

Outcome-based evaluation

1. Program evaluation

Question: Does the training model guarantee the specified and desired outcomes of the training?

2. Effectiveness evaluation

Question: Does the proposed content of the training guarantee reaching the specified goals and objectives?

3. Impact evaluation

Question: Is the proposed training of added value for in-service teachers as well as students?

Program evaluation

1. Organization performance outcomes

2. Individual performance outcomes

Question: Is the proposed training functional for the purpose it was made, being the possibility to train participants with the use of a database of examples and the possibility of distance-learning?

6. Evaluation on 1st implementation

The meeting in Locarno, April 7-9, focused on working with two critical friends. For each designed training course the following procedure was followed:

- presentation of training course
- questions by critical friends
- questions by partners
- conclusions and suggested improvements
- round-table-check

6.1 *Report from critical friends*

6.1.1 Critical Friends

Marga Baalbergen: In service teacher of mathematics, implementing strategies of formative assessment in mathematics education.

Focus on effectiveness of training model and content from perspective of in-service teacher, trainee

Paulien M. Langedijk, MA: Teacher-trainer at the university of applied science Hogeschool of Amsterdam, faculty of Educational Sciences, specialist in assessment and trainer of assessment professional programmes.

Focus on effectiveness of training model and content from perspective of trainer and assessment

6.1.2 Introduction

First of all we like to thank you for the invitation. We were honoured to be invited as a critical friend and play a role in supporting the reflective process and inform the mid cycle self-assessment.

6.1.3 How we worked

Before the face to face meeting at the SUPSI in Locarno we received information about the project and the role of the critical friend. Our focus was in the first place on the design of the training and the content of the training. We looked at those two points from the perspective of an in service teacher and a teacher trainer.

A week before the meeting we received the outlines of the pilot course from four countries. This gave us the opportunity to get acquainted with the designs of the course and to formulate questions.

At April 7th en 8th 2016 in Locarno, all the countries presented the highlights of the training models. We did our best to understand the context of the work and the outcomes that this project is working toward. During the meeting we were given the opportunity to ask questions and share our findings with the participants.

For each country we recognized strong points and points of improvement. Because of the fact that the time was limited we might failed to recognize all positive of negative developments of each individual country. We ask for understanding here.

Besides the written advice for each individual country we like to add some general advice for all the countries

6.1.4 General advice

Content of the training

Professional development is essential for teachers to progress as teaching practitioners. But there are many challenges in integrating professional development into regular practice. How to get the most from the training?

Teach what you preach. Consider the importance of teaching in a formative way in the pilot course. Put more elements of FA into the course. Walk the talk. What is the heart of assessment for learning?

- Self-regulation: One of the skills teachers and students should develop is reflection on learning ore self-assessment. Trying to take in new ideas and embed them into your practice is not easy. What helps is reflection. Focus on successes, beware of pitfalls.
- Self-regulation and self-directed: “Because adult learners are self-directed and pragmatic learners, their primary concern is the anticipation of and testing the usefulness of what they learn to improve practice rather than preoccupation with the background theory and general information. This makes them selective, yet, focused on what and how they would like to learn, thus, exercising more control over their learning.” Elliot en Campbell (2013).
- The face to face time is very valuable. Use it effectively by “flipping the classroom”. This means for example that the participants watch the video or read the theory at home. So there is more time to apply the knowledge in the face to face meetings with others. And there is more time for collaborative learning and interactive dialogue.
- Let the participants practice. They will learn FA by doing, by constantly having new experiences and attempting to integrate those experiences.

Design of the training

Make the teaching (and the model of the training) and learning activities as well as the formative assessments task aligned to the outcomes, in order that the participants are helped to achieve those outcomes more effectively. This is called designing constructively aligned outcome-based teaching and learning. (J. Biggs, C. Tang, Teaching for quality learning at University, 2011).

Assessment, also formative assessment is criteria referenced or based. How well a participant (teacher) performance compares to the criteria in the outcome statement. Pay attention to describe the learning goals in a way that tells us how we would recognize if or how well participants have learned what is intended they should learn or be able to do so. Make it as explicit as you can and share the learning goals with the participants.

6.1.5 Conclusions

It was noted by the partner from Cyprus there are many differences between the five designed training courses. The consortium first worked along the line that there should be a common training in every country. The end-result should be a validated training course, based on the principles of formative assessment, cooperative learning with peers.

Each partner took their individual circumstances into account and designed the training course. All courses were based on the design made by the Swiss partner. Therefore each partner did do just to the basic principles as formulated at the beginning of the project.

After the session with the critical friends the consortium in cooperation with the critical friends formulated a common core for each training:

Micro-simulation

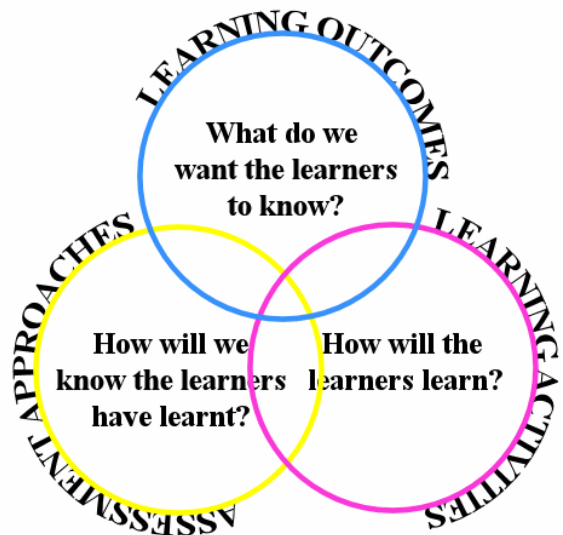
Introduced by the partners from Cyprus and Switzerland, in each training there will be a practical component called *Micro-simulation*. Micro-simulation was defined:

Simulating a lesson practice before a group of peers, where a designed implementation is used with the purpose of experimentation, feedback and improvement

It is important to have a practical component in the training. Ultimate goal is to change the professional behaviour and the skill of implementing formative assessment should be practiced. Doing this with micro-simulation this also has the advantage of collaborative learning, peer- and self-assessment.

Use of formative assessment

Walk the talk. Since the outcome of the training should be a more competent teacher in the use of formative assessment, the training itself should be based on the same principles. This also contributes to the element of a Life Long Learning, a teacher able to define one's own learning-need and the ability to assess the progress one's own learning and a way to improve one's own learning.



Use of questionnaire

An almost direct result of the choice to use formative assessment in the training is the questionnaire at the beginning of and at the end of the training. In this way the trainer builds an image of the present knowledge from where to start the training. The trainee sets one's own learning goals and defines success criteria. These are then made visible at the end.

The starting point in each country is very different. It was therefore concluded there should not be a completely common questionnaire.

Use of video

The learning through video is a new and uncharted territory. First results in research show this an effective way in teaching skills such as professional teacher behaviour. This was also one of the basic principles on which the project is based. In every training there is made significant use of videos showing practices of formative assessment. These videos will be analysed by the grid as defined during the project. The same grid is used to analyse the design of formative assessment by the trainee.

6.1.6 Dilemma's

Privacy concerns using videos

There remains the problem of privacy and consequent problems with the use of self-made videos and placing them in the web repository. This in some participating countries creates a bigger problem than others. Especially in the Netherlands the situation is that there are no videos available made during the project for use in the training. This was discussed with the critical friends. The solution defined is the use of videos available on the internet, mostly from English speaking countries. This resolves the problem of the lack of videos. Problem that is not solved is the building of the web repository. Unfortunately, the sensitivity of using videos in the public domain in the Netherlands, could not be solved during this project. The devised solution was shared within the consortium and with the critical friends and seen as appropriate.

Teacher resistance

Teachers almost all have a traditional, conservative reaction towards everything considered new. It is difficult to change (professional) behaviour, let alone the behaviour of the teacher. Traditionally, teacher training is done from a push-strategy. A universal message is at the centre of the training. These kinds of trainings show almost now lasting, sustainable effect. A pull strategy, where the trainee is placed at the centre of one's own learning, and is aimed at the individual need of the trainee, leads to less resistance and a more positive effect.

6.2 Feedback for each partner

6.2.1 Feedback Critical friend for Cyprus

Dilemma:

Question: Does the approach of the consortium guarantee a

- Effective
- Sustainable
- Transportable

Training both for in-service teachers as well as students training to become a teacher?

Positives:

Effective because it is:

- + Learning by doing through micro teaching.
- + elements of collaborative learning
- + Use of peer feedback! An important skill

Negatives:

Adult learners are pragmatic learners. They want to learn to improve practice rather than preoccupation with the background theory and general information.

Focus on what and how they would like to learn. For example: at the end of the meeting the trainers pose specific questions. Why not let the participants formulate their own learning- questions.

Try to build in the concept of FA by implementing FA in step 2 & 3.

Advice from critical friend

There are elements of FA (AFL) already in the design of the course. Make them more explicit. An important element of teaching teachers is being a role model. That's one thing. But research has learned that not all students recognize these elements. That's why you have to make it explicit. Explain what you do, why you do it and explain on which research or theory you act is built on.

Try to build in more elements of self-directed learning. For example after the participants know the concept of FA let them think about their initial situation (check what they already do/know) so they can formulated their own learning goals. Keep them active during the course.

6.2.2 Feedback Critical friend for France

Dilemma:

Question: Does the approach of the consortium guarantee a

- Effective
- Sustainable
- Transportable

Training both for in-service teachers as well as students training to become a teacher?

Positives:

- + The attention for the complex technical organization and the technics. This can be very time consuming
- + The concern of making the students familiar with e-space.
- + Step 5: presentation of the context of the video so you know where you're looking at.

Negatives:

- Does de MOOC support the professional development of teachers enough?
- Is it active enough? How does it support collaborative learning?
- A lot focus on knowledge. Less focus on skills and applying the knowledge in practice.
- Step 5: before the debate there is a presentation of the analysis. Is it possible to let the participants play a role in this?

Advice from critical friend

We advise to organize the debates in small permanent groups.

Stresses the value of collaborating with peers. Both at their own place of work and online. Learn from each other.

You can make the course stronger to put elements of self-directed learning in it. The focus seems to be on sending information, debate about information and knowledge. Try to make it more active.

Concern: how to monitor the activities of a big number of participants

6.2.3 Feedback Critical friend for Italy

Dilemma:

Question: Does the approach of the consortium guarantee a

- Effective
- Sustainable
- Transportable

training both for in-service teachers as well as students training to become a teacher?

Positives:

+ Plenty of time!

+ Between the lessons there is homework. That makes the face to face meetings more effective. Unfortunately not during the pilot training

Negatives:

- But in a short period.

- The participants can apply their skills after the course not during the course.

- Skills need practice

Advice from critical friend

Make the criteria of assessment clear

Not all teachers will be willing to change. Keep it simple start with small steps!

6.2.4 Feedback Critical friend for Netherlands

Dilemma:

Question: Does the approach of the consortium guarantee a

- Effective
- Sustainable
- Transportable

training both for in-service teachers as well as students training to become a teacher?

Positives:

Effective because it is:

+ based on a mix of methods: especially "Lesson Study's" which are proven to be effective.

+ Elements of Learning by doing

+ elements of collaborative learning

+ Use of peer feedback! An important skill

Negatives:

- the learning outcomes are not very explicit formulated.

- learning by doing can be very effective.

Advice from critical friend

Try to build in more elements of self-directed learning. For example after the participants know the concept of FA let them think about their initial situation (check what they already do/know) so they can formulate their own learning goals. Keep them active during the course.

Pay attention to describe the learning goals in a way that tells us how we would recognize if or how well participants have learned what is intended they should learn or be able to do so. Make it as explicit as you can and share the learning goals with the participants.

6.2.5 Feedback Critical friend for Switzerland

Dilemma:

Question: Does the approach of the consortium guarantee a

- Effective
- Sustainable
- Transportable

Training both for in-service teachers as well as students training to become a teacher?

Positives:

+ **Short** Initial and final questionnaire/interview.

+ The face to face meeting is very valuable

We heard in the presentation that you use also simulation/micro-teaching. This is very valuable

+ step 2

+ To focus attention you use the video by the presentation (of new knowledge) of the theory and also in an authentic situation!

+ Discussion about beliefs and practice. Maybe this can be enriched by other tools from active learning/ FA. Explain to a colleague....

+ step 3

To give the context of the video and let the participants use the grid while watching the video. This makes it more active and give the participants focus.

In this step the teacher/trainee is applying indicators in the observation of video.

Negatives:

- Are the results of the interview valid / reliable and transportable?

- Is the focus on the conceptions about formative assessment or at its practice? How do you measure practice with a questionnaire?

Step 2

- Why face to face the presentation of the European project? (Flipping the classroom).

We know now that you gave a "workshop" and that is was not a course.

Small amount of time to make big changes.

-step 3

- Gives the impression that the focus is on knowledge and recognizing. This are low order learning goals. But with active practicing you reach higher learning goals.

- How can you develop professional skills and critical evaluation skills in two workshops?

Advice from critical friend

We see elements of FA in the course but the time is very limited. Maybe you can give them homework so the face to face meeting will be more effective.

Maybe the participants can have access to the web-repository any time they want.

6.3 *Implemented changes after feedback critical friends*

The feedback received and commitment by the critical friends was well received and appreciated by all partners in the consortium. They found the feedback constructive. Both the partners as the critical friends mentioned the discussion took place in an open and trusted atmosphere and with a lot of respect for each other.

All partners received a resume of the feedback given and the results from the discussion. Possible solutions or changes were discussed and ideas exchanged.

Each partner could then decide how to improve on the designed training course. An overview is shown in a table:

Column 1: Item

Column 2: Feedback critical friends

Column 3: advice or proposed solution as discussed in meeting

These columns were written on the basis of the feedback of the critical friends

Column 4: Implemented solution

This column was written by each partner individually