



FAMT&L

FORMATIVE ASSESSMENT IN MATHEMATICS FOR TEACHING AND LEARNING

Work Package 7 - Dissemination

Deliverable D7.4– Publications

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| Description | | | |
| This document will outline the academic publications for promoting the actions and the results of the project. | | | |

Deliverable fact sheet

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| Deliverable type: | Academic articles and papers |
| Work package: | WP7 |
| Responsible partner: | University of Cyprus |
| Primary contributor: | University of Cyprus |
| Deliverable reviewers: | |

Executive summary

This document will outline the academic publications for promoting the actions and the results of the project. Some of these publications were peer-reviewed in national and international journals. Most of the publications are included in the project's website in freely downloadable pdf documents.

The FAMT&L (Formative Assessment in Mathematics for Teaching and Learning) project has been funded under the Lifelong Learning program. This publication reflects the views only of the author(s), and the Commission cannot be held responsible for any use that may be made of the information contained therein.

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About the document

All the partners worked in publishing academic articles in national and international journals and conference proceedings, but also books and chapters in books. Publications are found in different languages (English, Greek, Italian, French), thus are accessible to a broader audience.

1. Purpose of the publications

The publications aim to give information about the project, for instance, about its objectives, stages, etc. In addition, a lot of the publications describe the results or products of the project. More specifically, they promote the results of the questionnaires, the analysis of the grid and the results of the pilot courses in each country. The main goal of all the publications is to achieve a scientific dissemination of the processes and the results of the project.

2. Publications in each country

The following table presents the list of publications by each partner.

2.1 SUPSI

| TYPE | FULL REFERENCE | DATE |
|--|--|------|
| Chapter | Bolondi, G., Ferretti, F., Franchini, E., Lovece, S., Salvisberg, M., Sbaragli, S. & Vannini, I. (2015). La valutazione formativa nella didattica della matematica. Primi risultati del progetto internazionale FAMT&L. In: D'Amore, B. & Sbaragli S. (2015). La didattica della matematica, disciplina per l'apprendimento. Bologna: Pitagora. 3-8. | 2015 |
| Paper / International Referee Journals | Dozio, E., Franchini, E., Salvisberg, M., & Sbaragli, S. (2015). Le convinzioni di docenti e studenti sulla valutazione formativa in matematica. Scuola ticinese. 3, 27-30. | 2015 |
| Paper / International Referee Conferences | Laurent, J., Salvisberg, M., Vannini, I., Sbaragli, S. Méthodologies et outils pour l'analyse vidéo de pratiques d'évaluation formative en classe. Un projet de recherche internationale, ADMEE, 2016, Lisbonne. | 2016 |
| Book | "Guidelines for mathematical teacher training on the promotion and proper use of formative assessment in mathematics" | 2016 |

2.2 UNIBO

| TYPE | FULL REFERENCE | DATE |
|---|---|------|
| Paper / International Referee Journals | -Federica Ferretti, Stefania Lovece <u>La valutazione formativa per la didattica della matematica nell'ambito del progetto FAMT&L. Le concezioni degli studenti di scuola media nei confronti degli strumenti di verifica utilizzati in classe,</u> in Ricerche di Pedagogia e didattica, Vol 10/2015 | 2015 |

| | | |
|--|--|------|
| | No. 2, pp.39-68 | |
| Paper / International Referee Conferences | - Laurent Jeannin, Iuliana Rossi, Athanasios Gagatsis, Paraskevi Michael, Ira Vannini, Giorgio Bolondi, Federica Ferretti, Laura Tartufoli, Silvia Sbaragli, Miriam Salvisberg, Rob Velder Quelle évaluation formative en mathématique au sein de ces 5 pays : Italie, Chypre, Suisse, Hollande et France : Projet Européen FAMT&L. ADMEE, 2015 | 2015 |
| Paper / International Referee Conferences | - Paraskevi Michael – Chrysanthou, Stefania Lovece & Ira Vannini Exploring teachers' beliefs on formative assessment in mathematics teaching and learning in Cyprus and Italy Conference – EAPRL 2015 | 2015 |
| Paper / International Referee Conferences | - Stefania Lovece, Ira Vannini & Paraskevi Michael-Chrysanthou Methodologies and tools for the video analysis of formative assessment practices in classroom (with students aged from 11 to 16) Conference – EAPRL 2015 | 2015 |
| Paper / International Referee Conferences | - Giorgio Bolondi, Federica Ferretti, Stefania Lovece and Ira Vannini (University of Bologna), Elena Franchini, Miriam Salvisberg and Silvia Sbaragli (DFA-SUPSI of Locarno) The formative assessment in mathematics education. First results of an international project National Conference “Encounters with Mathematics n. 29”, Castel San Pietro Terme, Bologna (6-7-8 November 2015) | 2015 |
| Chapter | - Giorgio Bolondi, Federica Ferretti, Alessandro Gimigliano, Stefania Lovece, Ira Vannini The use of videos in the training of Math teachers: formative assessment in Math teaching and learning Chapter in progress for book: "Integrating Video into Pre-Service and In-Service Teacher Training" (to be published by IGI Global) | |
| Paper / International Referee Conferences | - Stefania Lovece The use of video in a teacher training course to promote the correct use of formative assessment for improving Mathematics teaching and learning | 2016 |

| | | |
|--|---------------------|--|
| | Conference ATEE2016 | |
|--|---------------------|--|

2.3 UCY

| TYPE | FULL REFERENCE | DATE |
|--|---|------|
| Book | Gagatsis, A., Michael – Chrysanthou, P., Christodoulou, T., & Elia, I. (2016). Formative Assessment in The Teaching And Learning of Mathematics in Cyprus. Nicosia: University of Cyprus. | 2016 |
| Paper International Referee Journals | / Michael-Chrysanthou, P., Christodoulou, T., Elia, I., & Gagatsis, A. (2016). Multiple semiotic means in the use of formative assessment in secondary school mathematics. <i>La matematica e la sua didattica</i> . 24(1-2), 125-144. | 2016 |
| Paper International Referee Journals | / Michael – Chrysanthou, P., Gagatsis, A. & Vannini, I. (2014). Formative assessment in mathematics: a theoretical model. <i>Acta Didactica Universitatis Comenianae – Mathematics</i> , 14, 43-70. | 2014 |
| Paper International Referee Conferences | / Christodoulou, T., Michael – Chrysanthou, P., & Gagatsis, A. (2016). Teachers' Training about Formative Assessment in The Teaching And Learning of Mathematics (pp). Chania: Greek Mathematical Society (In Greek). | 2016 |
| Paper International Referee Conferences | / Gagatsis, A., Christodoulou, T., Michael – Chrysanthou, P., & Elia, E. (2016). Multiple semiotic means in the use of formative assessment in secondary school mathematics. International Conference. October 8, 2016, Department of Mathematics: University of Bologna, p. 257-268 | 2016 |
| Paper International Referee Conferences | / Michael-Chrysanthou, P., Lovece, S., Vannini, I. & Gagatsis, A. (2016). Exploring teachers' beliefs on formative assessment in mathematics teaching and learning in Cyprus and Italy. <i>EAPRIL Conference Proceedings 2015</i> , Issue 2 (pp. 511-523). ISSN 2406-4653. | 2016 |
| Paper International Referee Conferences | / Lovece, S., Vannini, I., Michael-Chrysanthou, P. & Gagatsis, A (2016). Methodologies and tools for the video analysis of formative assessment practices in classroom (with students aged from 11 to 16). <i>EAPRIL Conference Proceedings 2015</i> , Issue 2 (pp. 203-213). ISSN 2406-4653. | 2016 |
| Paper International | / Michael-Chrysanthou, P & Gagatsis, A. (2015). Students' beliefs for formative assessment in | 2015 |

LLP Comenius FAMT&L: 538971-LLP-1-2013-1-IT-COMENIUS-CMP Deliverable 7.4

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|--|--|------|
| Referee Conferences | mathematics teaching and learning. <i>EAPRIL Conference Proceedings 2014</i> , Issue 1 (pp. 178-193). ISSN 2406-4653. | |
| Symposium/ International Referee Conferences | Gagatsis, A., Michael–Chrysanthou, P. & Christodoulou, T. (2016). Formative Assessment in The Teaching And Learning of Mathematics. Proceedings of the 18 th Cyprus Conference on Mathematics Education and Science (pp.). Nicosia: Cyprus Mathematical Society (In Greek). | 2016 |
| Paper International Referee Conferences | / Michael–Chrysanthou, P., Christodoulou, T. & Gagatsis, A. (2016). Examining the math teachers' beliefs about the source of students' mathematical errors. <i>Proceedings of the 18th Cyprus Conference on Mathematics Education and Science</i> (pp.). Nicosia: Cyprus Mathematical Society (In Greek). | 2016 |
| Paper International Referee Conferences | / Michael–Chrysanthou, P. (2014). Formative assessment in teaching and learning mathematics. <i>Proceedings of the 14th Conference of the Cyprus Pedagogical Society</i> (pp. 672 – 681). Nicosia: Cyprus Pedagogical Society (In Greek). | 2014 |

2.4 INHOLLAND

| TYPE (paper, chapter, book etc.) | FULL REFERENCE | DATE |
|--|-------------------------|---------------|
| Velon, scientific magazine for teacher educators | Still in editors review | Not yet known |
| Euclides, magazine Dutch society of Mathematics Teachers | Still in editors review | Not yet known |

2.5 UCP

| TYPE (paper, chapter, book etc.) | FULL REFERENCE | DATE |
|----------------------------------|---|-----------------------------|
| ADMEE | 27ème colloque de l'Admee Europe Quelle évaluation formative en mathématique au sein de ces 5 pays : Italie, Chypre, Suisse, Hollande France : Projet Européen FAMT&L. | Liège 28 29 30 Janvier 2015 |

| | | |
|-------|---|--------------|
| Paper | Formation des enseignants, pistes et approches par la recherche | October 2016 |
|-------|---|--------------|

3. Final Publication of the FAMT&L Project

The FAMT&L Staff has decided to publish a book after the end of the Project, in order to disseminate the project results to the whole European scientific community. Within the Scientific Staff we have shared: the book organization, content and authors.

An Italian publisher, international, has been identified as suitable for open access publishing Franco Angeli Publisher – Milano: www.francoangeli.it)

The preview of the cover page, index and presentation are attached below.

Fig. 1: The preview of the cover page, index and presentation

Giorgio Bolondi and Ira Vannini, Athanasios Gagatsis, Laurent Jeannin, Silvia Sbaragli, Rob Velder

FAMT&L Project

A European research of formative assessment for teaching and learning in mathematics



Handbook presents the research process and the results of the international FAMT&L project (Formative Assessment in Mathematics for Teaching and Learning).

The European Project (LLP Comenius) is a 3 years project aimed to promote the correct use of FA in the classroom, specifically in teaching mathematics, with students aged from 11 to 16 years old. This project "FAMT&L" involved five European Universities as member partners: the Alma Mater Studiorum University of Bologna in Italy, the University of Applied Sciences and Arts of Southern Switzerland, the University of Cergy-Pontoise in France, the University of Cyprus, and the Netherlands' Hogeschool Inholland.

The research started with observational studies and surveys in order to understand analytically Maths teachers' (Michael Chrysanthou, Gagatsis & Vannini, 2014) and students' beliefs and practices (Michael Chrysanthou & Gagatsis, 2015). In this way it has been possible to detect training needs to design specific courses aimed at promoting a correct use of methodologies and tools to conduct correct formative assessment activities.

During the first explorative phase of the work, with the administration of questionnaires about beliefs and practices on assessment, we conducted also some case studies, with the help of video recording, to develop and try out an observational tool (a structured grid) to analyse assessment practices in the classroom.

In the second phase, we have carried out a systematic observation study on a larger sample of video sequences of teachers in the five Partner countries involved with the use of a specific tool. The tool was defined by using indications from international literature and experiences of in-service training and it is useful to gather many different indicators on good and bad practices for the formative assessment of Mathematics teachers (e.g. their habits about gathering information on the students' learning process, correcting errors and using feedback to support learning). With the videos collected about formative assessment situations, researchers have created a web-repository and designed a teacher training program based on the use of such repository. In this activity we will focus on the process of video analysis made in class, and then on the creation of a repository that can be used in training courses aimed to promote FA in the practices of in-service Math teachers.

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Preface

Introduction - FAMT&L: a Teacher Professional Development Research"

Giorgio Bolondi and Ira Vannini (University of Bologna), Athanasios Gagatsis (University of Cyprus), Laurent Jeannin (University of Cergy-Pontoise), Silvia Sbaragli (University SUPSI), Rob Velder (University InHolland)

Why formative assessment in Mathematics?

Giorgio Bolondi and Ira Vannini (University of Bologna)

The LLP – Comenius FAMT&L Project

Federica Ferretti (University of Bologna) and Athanasios Gagatsis (University of Cyprus)

Assessment in classroom: Beliefs and misconceptions of Teachers and Students

Paraskevi Michael-Chrysanthou (University of Cyprus), Federica Ferretti and Stefania Lovece (University of Bologna)

From beliefs to practices: the video-analysis methodologies to observe the FA in classroom

Stefania Lovece and Ira Vannini (University of Bologna)

A web-repository to analyse the FA in Mathematics in five European countries

Stefania Lovece (University of Bologna)

Formative Assessment practices of FAMT&L Mathematics' Teachers

Laurent Jeannin and Fathia Lograda (University of Cergy-Pontoise)

Teacher training through the video-analysis: a model for five pilot courses. Mathematics Teachers Change in FA: monitoring of the pilot courses

Giorgio Bolondi, Federica Ferretti, Stefania Lovece and Ira Vannini (University of Bologna)

The voice of the teachers: their experience in FAMT&L

Strengths and weaknesses: quality of the project and possibilities for improvement, Seerp de Blauw and Rob Velder (University InHolland)

Exploitation of FAMT&L: national agencies involved and continuity of the project

Alessandro Gimigliano (University of Bologna)

Conclusions and further directions

Giorgio Bolondi and Ira Vannini (University of Bologna), Athanasios Gagatsis (University of Cyprus), Laurent Jeannin (University of Cergy-Pontoise), Silvia Sbaragli (University SUPSI), Rob Velder (University InHolland)

Appendix. The voice of students. Presentation of product of the School

Paraskevi Michael-Chrysanthou and Theodora Christodoulou (University of Cyprus)