



Le-MATH

**Learning Mathematics through new communication
factors**

Work Package 4:

Pilot Testing and Evaluation

Methods and Competitions

REPORT

Index:

1. SECTION 1 - Objectives	
Description of the work package	page 4
2. Deliverable of WP 4.....	page 5
3. Synopsis of the procedure – analogue to the proposal	page 7
4. Synopsis of additional conditions from project manager	page 13
5. Synopsis of additional suggestions of project leader and partnership	page 15
6. Synopsis of used Methodology	page 17
7. Evaluation of procedure:	
7.1. First draft of guidelines	page 18
7.2. Rules and procedures for participating in the pilot testing procedure	page 21
7.3. Announcement for inviting interested schools to participate.....	page22
7.4. Participants use the on-line platform	page 29
7.5. Participants are asked to provide feedback on the application of the methodology	page 31
7.6. On-line assessment by the partnership	page 32
7.7. Selection of finalists	page 37
7.8. Feedback by pupils participants before the final competition	page 39
7.9. Invitation to the final competition	page 42
7.10. Plan and timetable for the events , MATHeatre, MATHfactor	page 44
7.11. Implementation.....	page 46
7.12. Awarding prizes to the winners	page 52
7.13. Final evaluation	page 12
8. Evaluation of additional conditions from project manager:	
8.1. The event and the pupils’ participation are relevant to project aims/ objectives/workplan.....	page 53
8.2. The participation of non-EU pupils bring added value to the project and the pupils take active part in the event	page 57
8.3. The participants subsequently write a report on the events/workshops/meeting which will be made available to all project partners (and submitted to the Agency at Progress/Final report stage)	page 58
9. Evaluation of additional suggestions of project leader and partnership:	
9.1. Feedback for the methodology as shown in the guidelines	page 58
9.2. Feedback for the use of Manual of Scripts for improving their MATHeatre play and feedback for the use of the published video samples for improving their MATHFactor presentation	page 59
10. Methodology of this Evaluation	page 63
11. Annex:	
11.1. Statistic and graphs regarding use of internet.....	page 67

11.2. Emails to invite teachers and students to pre-evaluation	page 75
11.2. Statistic and graphs regarding pre-evaluation teachers.....	page 76
11.3. Statistic and graphs regarding pre-evaluation students.....	page 88
11.4. Statistics and graphs regarding evaluation of audience.....	page 109
11.5. Statistics and graphs regarding evaluation of assessors.....	page 112
11.5. Statistics and graphs regarding dissemination of competition	page 118
11.4. Protocol of final interviews at competition	page 126

SECTION 1 - Objectives

Description of the work package

This work package will consist of a series of activities aiming at the pilot testing of the MATHeatre methodology. These Guidelines are to be addressed to both the schools and other institutions (final users) that will be interested to participate in applying the new methodology in teaching and learning mathematics through math theatre.

The work package 3 produced a first draft of the guidelines, the work package 7 invited European schools to test them and the work package 6 provided an online platform that allowed the participants to upload videos that were ready for assessment. After the assessment, a short list of six finalist schools was invited to a final competition.

The same procedure took place for the testing of the Math-Factor methodology. The work package 5 produced a first draft of the guidelines, the work package 7 invited schools to apply the guidelines and encouraged pupils, aged 9-18, to develop a math communication video of maximum duration of 3 minutes. The work package 6 provided the online platform for the uploading of the MATHFactor presentations. An assessment was conducted by the partnership and a short list of six pupils was invited to the final MATHFactor competition in late spring 2014. In both cases (MATHFactor and MATHeatre) the participants were divided into two age groups. The language of the participation and testing was in the English language.

The Procedure is summarized below:

- First draft of guidelines
- Rules and procedures for participating in the pilot testing procedure
- Announcement for inviting interested schools to participate
- Participants use the on-line platform
- Participants are asked to provide feedback on the application of the methodology
- On-line assessment by the partnership
- Selection of finalists
- Feedback from participants before the final competition
- Invitation to the final competition
- Plan and timetable for the events, MATHeatre, MATHfactor
- Implementation
- Awarding prizes to the winners
- Final evaluation

Interpretation: We discuss and evaluate the influence of the special Le-Math methodology to the final users (teachers and students) regarding the competition in stage 1 (internet presentation) and stage 2 (presentation at the competition). This evaluation does NOT proof the quality of MATHeatre / MATHFactor methods. This is part of the internal evaluation! The influence to the target group regarding increased motivation to learn mathematics was the main part of this work package.

All results are reported in a short synopsis and then expanded. All results (tables, questionnaires etc.) are added to this report in an annex.

1. Deliverable of WP 4 – Deliverable 7

This is going to be the event of implementing the pilot testing in all the steps as describe in the work package 4. Parts of the event will appear in published programmes and part in video.

The second part of the deliverable will be a report, which will include the feedback from the participant teachers and pupils and the final evaluation, problems recorded for the methodology, for the online platform, language problems, communication problems.

The feedback document request and the evaluation tool will be developed with the help of the external evaluator and the leaders of the work packages 3 and 5.

SECTION 2. Project approach

At the beginning of the project it was necessary to find a “common language” of the terms the partnership used in MATHFactor and MATHeatre. These terms became defined in the Guidebook in the chapters Methodology and Guidelines.

The partnership started to collect good praxis examples immediately after the start of this project. Language problems (examples in different languages) and quality-problems of the examples appeared. All these problems became solved by using methods of analysis (Math Topic, Age group, Knowledge background, Knowledge acquired, Skills acquired). The content of MATHeatre and MATHFactor was discussed and defined between the partnership. WP 4 could start to plan and write the evaluation including the special tools.

Finally, from the feedback of the teachers we learned that some need practice examples, because not all teachers read the theoretical impact. So the partnership decided to continue a very successful script writing competition and added examples of scripts created by the partnership.

Phases 1 and 2 of the competition were done as planned. We could run the evaluation of these new methods according to the proposal.

SECTION 3. Project outcomes and results

IMPLEMENTATION TO THE WORKPLAN:

TIMELINE CORRECTION-WP4

	2012					2013					2014														
	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	
First draft of guidelines evaluation								x	x	x	x	x													
Rules and procedures for participating in the pilot testing procedure								x	x	x	x	x													
Announcement for inviting interested schools to participate													x	x	x	x	x	x							
Participants use the on-line platform																x	x	x							
Participants provide feedback on the application of the methodology																x	x								
On-line assessment by the partnership																x	x								
Selection of finalists																x	x								
Feedback by pupils participants before the final competition																x	x								
Invitation to the final competition																	x								
Plan and timetable for the events , MATHeatre, MATHfactor																x	x								
Implementation																	x	x	x	x	x	x	x	x	
Awarding prizes to the winners																	x								
Final evaluation																	x	x	x	x	x	x	x	x	

This timeline shows the main activities in WP4.

After the definition of the content of MATHFactor and MATHeatre we started to discuss the evaluation methods. The consortium agreed these terms:

The participant's view took place in five different questionnaires by using mainly survey monkey (internet questionnaire):

- 1. Pre evaluation- teachers:** included 21 questions that were sent to all teachers after sending a submission in MATHFactor or MATHeatre. The invitation was sent in the context of WP1 – we used an internet questionnaire.
- 2. Pre evaluation- students:** included 20 questions that were sent to all students involved in MATHFactor or MATHeatre. The invitation was sent in the context of WP1 – we used an internet questionnaire.
- 3. Evaluation of dissemination methods of partnership** - questionnaire in paper form given at Meeting 5
- 4. Evaluation of assessment (assessors of 1st phase)** - We sent an internet questionnaire (11 questions) after the assessment and got detailed feedback.
- 5. Evaluation of auditorium - audience (during final competition)** – A questionnaire, in paper form, was given to the auditorium in the final presentation of MATHeatre and MATHFactor. It included 7 questions.

6. Final Interviews: Under the WP1 all final participants of MATHFactor and MATHeatre were invited to a structured interview. It was conducted by the Partnership and in the context of WP 4, by using pre-defined questions.

2. Synopsis of the results – analogue to the proposal

a. First draft of guidelines

The Guidebook including guidelines and methodology became developed in an early stage of the project. The first draft occurred in October 2013. This version was published immediately after editing on website. They became adapted and re-edited during the project; the final English version was published in early July 2014.

Evaluation result:

1. Teacher responded it was hard to understand terms “Guidelines”, “Guidebook” and “Methodology”. This has led to some lack of usability and consequently lack of accurate information. The partnership decided to highlight and explain the different terms. The project uses now a clear presentation and provides descriptions.
2. Some schools started to work in their contribution in a very early stage, without waiting for the announcement of the Guidebook including methodology, project’s guidelines and rules. Finally many of them did not read the guidelines and rules, which made them make mistakes.

b. Rules and procedures for participating in the pilot testing procedure.

The first draft of the rules became edited and published on Website in September 2013. The partnership worked hard to cover all problems in registering for the events, regarding copyrights, parent information, evaluation criteria etc.

Evaluation result

1. We only received positive results regarding the rules and the procedure for participating in the pilot test.
2. Everyone liked the distinction of the presentation in two phases: first in a video and second live in front of the auditorium. Nearly everyone reported that they preferred the recorded video presentation more than the live presentation. Everyone agreed that the participation in both phases give a lot of experience.
3. Some participants of the age group 2 of MATHFactor found the time constraints restrictive. This was mentioned in the interviews. About 15% of the teachers and the students suggested more than 3 minutes for the performance. Teachers proposed to allow audio-visual aids, to make the presentations easier to understand (most of the listeners do not speak English fluently!) – Teachers can adapt their own creativity to the methodology suggested by Le-Math and develop their own method that could be more accepted by their students. The suggestions made through the evaluation for introducing additional approaches are made available to the focus group and they are going to be examined in the future.
4. Some submitting groups did not follow strictly the rules - especially in phase 1 (the video). They said in the interviews that they edited the film by cutting/editing- this is against the rules, but it was impossible for the jury to notice this in the videos. Also, the rule that adults should not be actors in stage was broken by one finalist. The focus group has to discuss these rules for future competitions.

c. **Announcement for inviting interested schools to participate**

The partnership announced MATHeatre and MathFactor in their countries in schools and invited partner in whole Europe and in non-EU countries. The dissemination report shows the activities. We proofed the traffic in internet (reported by WP 6) and got feedback from pre-evaluation, evaluation of audience during the presentations and in the final interviews.

Evaluation results for teachers (shown in pre-evaluation, interviews and auditorium)

1. The high number of emails sent to schools (more than 30.000) brought positive results. 6% (this is about 2.000 teachers) report that email was their source of information.
2. The website was an important dissemination factor. The website needs an Impressum (including name of the institution, the president of CMS, the address, the telephone and fax number and the email contact.
3. A group of teachers got individual invitation to the project by eTwinning, in congresses, in presentations of the partner organizations, from head teachers, from friends etc. The invitation from “mouth to ear” was the most effective!

Evaluation result for students (shown in pre-evaluation, interviews and auditorium).

The most important source of information for the students was the teacher. The teacher normally asked the class who was interested, he presented different mathematical topics to the students and they selected a topic and wrote their presentation. Only a few used a presentation written by their teachers or used scripts out from a book.

The majority of teachers and students worked on the presentation in their free time!

d. **Participants use the on-line platform**

For the participants it was important to use the online platform, especially for downloading and/or for visiting examples of theatre or presentations. This platform started from the beginning of the project and was used during the whole duration of the project. The continuous dissemination of the competition is evident in the partnership questionnaire.

Evaluation result

1. Facebook was favoured by students (by both genders). Teachers used it to watch examples and present them to their students. This platform was a very important tool for all participating schools, because the expected activity became clear to all!
2. The Facebook was not a primary source of information for Le-MATH project in the beginning (10% of teachers but only 0,8 % for students!) . After the beginning of the project the online platform became very important for all participants. By the 15th of October 2014 we have got 817 likes.
3. The partnership disseminated the Le-MATH conference from the beginning of the project

on different levels and used all possible dissemination methods.

e. Participants are asked to provide feedback on the application of the methodology.

The methodology was developed from beginning. We have seen that it was not easy to find a “common language” because the adoption of competitions is definitely very different in Europe.

Evaluation result:

1. The guidelines were written without taking into account that some mathematics teachers do not have good knowledge of the English language. The pre-evaluation and the final interviews reported this problem. The partnership will solve this problem by editing a short synopsis at the beginning of the guidelines. In addition the guidebooks were translated and they will be available in 10 European languages by the end of the project.

It was not possible to translate it in an earlier stage, because the guidelines were not in final form and needed an update after the pilot testing procedure.

2. The problem that some teachers do not like to read long texts of methodology is well known in Europe. They need very practical and simple examples – like a “cooking book”. The partnership recognized this problem very early and started a “Theatre Play writing competition on the theme of Mathematics” and published the examples on website and in a book. In addition the partners decided to write additional examples and to publish them. The feedback in the interviews was positive!

2. The pre-evaluation (teacher and students) indicates that the Le-MATH methods are innovative, attractive to all, make mathematics more fun and thus motivates students to learn mathematics.

f. On-line assessment by the partnership

By the 17th of March 2014 we received

31 submissions for MATHeatre (14 for age 9-13 and 17 for age 14-18)

27 submissions for MATHFactor (3 for age 9-13 and 24 for age 14-18)

18 examiners from the partnership assessed the videos. We sent after the assessment a questionnaire and got detailed feedback.

Evaluation result (short summary – more results below):

1. Regarding the assessment criteria, everything seems fine for MATHFactor method. Regarding the MATHeatre some minor problems were reported. Especially the “theatrical aspect” was not easy to assess. In the training courses the partnership needs to emphasize and focus on the understanding of the theatrical aspect. One needs to gain experience by watching and practicing examples! This is reflected in the schedule of the course.

2. The coherence in the assessments was homogeneous – we could not find too many differences in the markings. Only in three cases the difference in marking varied considerably. A third evaluator was employed to balance the result.

3. The jury recommends the use of these criteria in schools.

g. Selection of finalists

For the final competition, after the online assessment, the following number of participants became invited to present their presentation/play:

MathFactor: Age group 9-13 – 3 presentations

MathFactor: Age group 14-18– 7 presentations

MATHeatre: Age group 9-13 – 6 presentations

MATHeatre: Age group 14-18 – 8 presentations

Evaluation result (interviews and the questionnaires out of the audience) :

1. Nearly all participants expected to be selected because of the quality of their presentations. A big number of participants act with a strong self-confidence.
2. The selection in phase 1 was accepted by the applicants. In the open questions we got from non-successful applicants we provided feedback why they were not selected. This should be reflected in the Le-MATH Focus group, because students feel that they have the right to hear why they were not selected so they can improve their skills for the next competition. In a class environment, this can be done easily, but usually in an open competition, explanations for low marks are not given as the jury provides positive or less positive comments.

h. Feedback by pupil’s participants before the final competition.

We sent a pre-evaluation questionnaire to all participants and got feedback from 34 teacher and 134 students. This feedback was important for the progress of the project, as it is shown in the evaluation report. These results are crucial for the project:

Evaluation result

1. Preparing the presentations had a positive influence to the attitude towards mathematics.
2. Learning maths is easier for all students (even for “underachievers”) by using these methods (MATHeatre and MATHfactor).
3. In the interviews we learned, that about 50% of the participants get better marks/points in maths after using Le-Math tools. This feedback was confirmed by the teachers!
4. Le-Math brings fun and fun is important for learning maths.

i. Invitation to the final competition.

The selected participants got a written invitation to the final competition in Cyprus. This letter has got a very clear structure on the rights and duties of participants. A letter including all details was signed by the parents.

Evaluation result - the interviews

1. The invitation letter to the final competition was done in a clear structure and in an understandable form for students and parents. Only a minority translated the parents’ letter in their national language. Most of them used all information in English.
2. The invitation increased stress to all participants. They all became nervous because of the presentation in front of a big audience, but after the final presentation they all stated that they liked the experience.
3. In addition, students learned a lot social tools that can apply in their daily life, like team

work, to cooperate with others, presentation skills, collecting sponsor money for the flights, booking of a journey, disciplined behaviour etc.

j. Plan and timetable for the events: MATHeatre, MATHfactor.

All the participants of the LE-MATH competition got a clear timetable. The competition was integrated in the EuroMath Student Conference 2014 in Nicosia. It was included in the Program of the conference and also covered some special topics, like the presentation of the LE-MATH method for the teacher. The MATHeatre and MathFactor presentation took place on Saturday evening and Sunday morning. The presenters (students and teachers) got a schedule for the final interviews – all were on time.

Evaluation result (interviews and feedback of audience)

1. To integrate Le-MATH in the conference helped to share resources and made it possible to run the competition in a modest budget frame, supporting more student's participation.
2. Not all participants were able to distinguish between EuroMath and Le-MATH. All Le-MATH activities were highlighted in a different colour in the program, but this was not observed by the participants. We received in the feedback of audience-questionnaire curious answers that illustrated that not every attendant checked in which event she/he participated.

The same happened in the LE-Math presentation hold by Dr Makrides. The audience was mainly made up students, but the presentation was for teachers!

The Focus group has to discuss these problems.

The press conference was best organized, but the press feedback of newspapers was hesitant – The National TV of Cyprus took an interview of Dr. Makrides.

k. Implementation

The implementation worked perfectly. All participants did very good presentations. The organization was very good and without any delays. The competition finished after the EuroMath conference. A moderator helped the attendants with the programme.

The members of the jury did not include project partners who were involved with her/his institution in a presentation.

During MATHFactor, after each presentation, the moderator asked all jury members for feedback. In MATHeatre there was only one Jury member giving her/his feedback.

Evaluation result (interviews and feedback of audience):

1. Students have the opportunity to gain experience in a multinational competition.
2. Students like to take part in different competitions.
3. In the feedback of the audience we got very positive feedback regarding the presentations (understandable) and the positive feedback for learning mathematics (more than 85% find it more enjoyable, after attending the math competitions!)

The EU-Funding was appreciated by more than 95% as positive and 87% will recommend Le-MATH competitions to others!

4. As mentioned before, some visitors were confused between Le-Math and EuroMath. For some audiences it was not clear, that Le-MATH presents a new methodology for learning

mathematics – they expected brilliant mathematical solutions. This was not the aim. The objective was to show, how pupils can learn mathematics in a new funny way (even underachievers).

I. Awarding prizes to the winner

The winners got prizes as defined in the announcement of the competition.

Evaluation result (interviews)

1. Teachers can use the assessment criteria of the Le-MATH competition to run similar competitions in their classroom or in their school.
2. The interviews show, that all finalists liked the prizes. But some of the participating students did not even know that there were prizes. All of them reported that their motivation was not the prize; it was the possibility to have fun in mathematics in a different and unusual way.
3. The students noted that the possibility to take part in the finals in Nicosia was the best prize for them. They felt that the fact they were selected as finalists was very nice, but the chance to meet other students, to present their findings and to be able to show what they acquired in a team was the most important fact.

m. Final evaluation

It was submitted on time – it was finished before the final meeting, so that all project leaders could make contributions or suggestions.

The first draft (including only the synopsis) was sent to the partnership 2014 May 15th.

3. Synopsis of additional conditions from project manager

a. The event and the pupil's participation (non-EU countries) are relevant to project aims/objectives/work plan

The rules and procedures for participating in the pilot testing procedure defined the rules of participating. It was clearly defined, that the consortium expected participation from outside of Europe in order to gain new ideas regarding Le-Math methods.

Evaluation result (interviews, questionnaires):

The feedback was positive. Students and teachers liked the idea of inviting non-EU countries, because of these reasons:

The **teachers** stated that after taking part to a lot of European projects they know the thinking and acting of European teachers. They are cross-linked together and exchanged ideas in new methods and didactics. With Le-Math, they had the opportunity to gain new and fresh ideas from non-Europeans!

The **students** enjoyed meeting colleagues from non-EU countries and to gain insights about their problems, ideas, life situation etc. For them it was a part of a peace project (special to meet handicapped, colleagues from Africa and Asia, Muslims ...). They became friends with pupils they never would have the chance to meet before this EU competition!

b. The participation of non-EU pupils brought added value to the project and the pupils take active part in the event.

The invitation of "Al-Hadi Institution for deaf, blind and learning disabilities" was a milestone in the project. Additionally, we assumed that underachievers would get more interest in maths.

Evaluation result (interviews, questionnaires)

1. There was no European school dealing with underachievers in the project. All of them wanted to win and selected mostly their best students.

An additional problem was (special for European students) the language – English, because underachievers have sometimes more than mathematical problems). It was an advantage for International schools (most of them have got a more or less private character) but not for regular schools with regular English lessons.

2. "Al-Hadi" showed that it is possible to teach mathematical topics understandable by using MATHeatre with handicapped pupils. They demonstrated very impressively, that mathematics can be fun for everybody!

3. In the future we can expect that more schools with pupils with learning difficulties will take part in Le-Math competitions.

Czech Republic with the presentation "Prime Kingdom" did the first step in Europe: the theatre was prepared by all the children of the class. This shows that it is not necessary to do it only with the best students.

- c. The participants subsequently write a report on the events/workshops/meeting which will be made available to all project partners (and submitted to the Agency at Progress/Final report stage)**

We got written feedback in the interviews, the pre-evaluation and the questionnaires of the audience regarding the non-EU participants.

Evaluation result (interviews, questionnaires):

This is part of this Evaluation, all results are added in the Appendix. Each Partner gets it before the final meeting.

4. Synopsis of additional suggestions of project leader and partnership

The partnership discussed the evaluation in meeting 3 and 4. Finally, they wanted feedback especially in some questions. These were answered in a more general analysis. Now we have to make it more convenient for the consortium.

a. Feedback for the methodology as shown in the guidelines

The methodology was published in the guidelines from the beginning of the project. It was a complex file and included a lot of very interesting and detailed information. To reflect on the quality of this methodology is not part of this competition-evaluation. It has to be done by the internal evaluation.

Evaluation result (interviews, questionnaires)

1. The most important problem was the scope of the file. Teachers of mathematics are not very fluent in English to be able to read such a big file.
We need to write synopsis in a short and easy English, so teachers from the WHOLE Europe (not only the partner-countries, because the guidebooks became translated at the end of the project) will be able to read and to understand them! That means that the translation in 10 languages of the partner countries solves half of the problem.
2. We need a clear wording. If we speak about methodology, it should be in the index of the guidelines/guidebooks. This was another problem for teachers. Clear wording helps to understand.
3. In the pre-evaluation we did not get very positive feedback regarding methodology. The interviews showed that a big number of participants started to work on their project before the first version of the guidelines were published. They didn't read them before or afterwards, so their feedback was not positive. This problem is expected to be solved, because by the end of the project the final version of the guidelines will be published.
4. Some teachers ask for a web link of the Methodology in the application form. It could be like this "I confirm that I have read the guidelines in the web-site (and then the link)"

b. Feedback for the use of Manual of Scripts for improving their MATHeatre play

The project decided to develop a manual of scripts for improving the MATHeatre. This Manual was published and is available in digital and printed version. All participants (teachers and students) got it at the competition.

A theatre play writing competition on Mathematics took place in October 2013. Teachers who took part in this competition knew about the manual.

Evaluation result (interviews, questionnaires)

1. The majority answered, that they have seen it first time in the conference. They did not know that it existed – we have not sent the paper form to the attendees because it's more or less a tool for the Le-Math courses. The teachers who had the possibility to read it gave positive feedback.

2. Teacher misses an analysis including detail information like Mathematical Area, Methodology & Analysis, Keywords, Age group – this could save time. This is done by the consortium and should be published in the web-version too. It has to be available in the Webpage under MATHeatre examples!
3. Some did not read it because they did not want to be influenced. After finishing, some read it - others not.

Feedback for the use of the published video samples for improving their MATHFactor presentation

On Website video samples for MATHFactor are published.

Evaluation result (interviews, questionnaires):

1. In general we got the same answer from teachers like above. Some didn't show the examples to their students at the beginning and presented them in the final stage of preparation. Others didn't show it at all.
2. Students watched the videos because they wanted to improve their presentation/play and to avoid errors.
3. Teachers and students who have seen the videos answered positive and accepted that it was a good tool for them.

c. Feedback on whether the approach suggested was appropriate for the age group.

The consortium decided to have two age groups in the competition (9-13 and 14-18). This decision was part of the evaluation and the interviews.

Evaluation result (interviews, questionnaires):

1. Depending on the school system in the countries of the participants this decision was perfect for them or they dislike it if the system does not fit to their individual school type. Especially on the border from 13-14 appeared to be a problem for some participants. Most of the finalists like it better to have 2 age groups than one.
2. Nearly half of the participants asked for a change in to three age groups: Age group one from 9-13, Age group two from 14-16 and three from 17-18. But in parallel they expressed that maybe the third age group will not get enough participants because of the final exams in school.
3. A small minority asked for theme-centred groups. This is at the end was hard to realize. The consortium had to decide, what they preferred and in general, the splitting into two age groups was accepted by the participants.

5. Synopsis of used Methodology

Purpose:

The overall purpose of this evaluation was to investigate the participants views and expectations in the project (competition stage 1 and 2), concerning the information and the help, received before the conference (in stage 1), the information they got out of the website of Le-Math, the competition and finally the success of these new methods.

Methodology:

The participants' views were illustrated through five different questionnaires, by using mainly survey monkey (internet questionnaire):

1. Pre evaluation - teachers: 34 answered the questionnaire we sent a pre-evaluation questionnaire to all participants and got feedback from 34 teachers.

21 questions

We got 31 submissions for MATHeatre (14 for age 9-13 and 17 for age 14-18)

27 submissions for MATHFactor (3 for age 9-13 and 24 for age 14-18)

2. Pre evaluation - students: 134 sent an answer throughout our survey tool.

20 questions

3. Evaluation of dissemination methods of partnership - questionnaire in paper form:

10 answers, 6 questions

4. Evaluation of assessment (assessors of 1st step) - 13 sent an answer throughout our survey tool. 18 examiners from the partnership assessed the videos. We sent after the assessment a questionnaire and got detailed feedback.

11 questions

5. Evaluation of auditorium - audience (during final competition) questionnaire in paper form to visitors in MATHeatre and MATHFactor. 7 questions – 73 answers

6. Final Interviews: We invited all final participants to an interview – so we interviewed 130 persons in groups and wrote a protocol based on their answers. This protocol became analysed. You will find the summary in the appendix.

The questionnaires were structured in Yes/No questions and statements by using the survey monkey tool: analysis of test data. The three questionnaires provided the space for open ended questions where the participants expressed their own view.

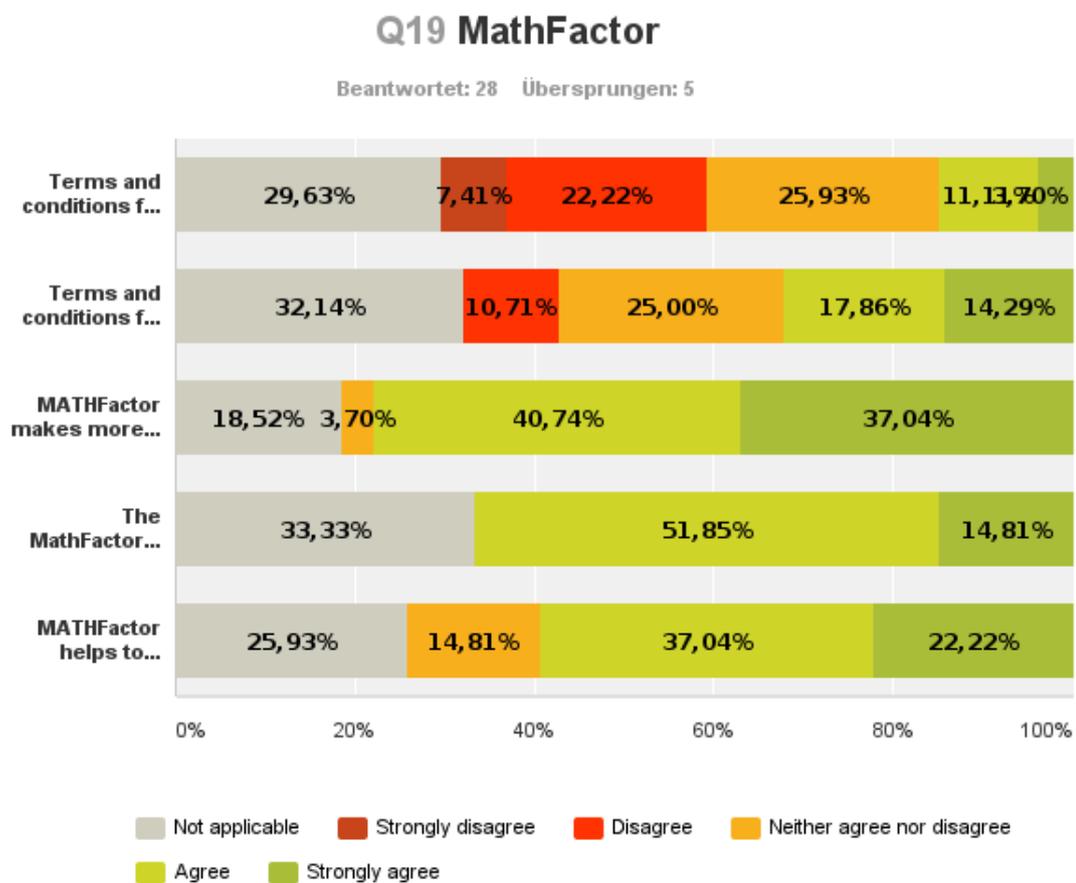
The final interviews became analysed – the most important answers are highlighted in the appendix.

6. Evaluation of procedure:

6.1. First draft of guidelines

The guidelines developed in the early stages of the project. The first draft was prepared in August 2013. This version was published immediately after editing on the website of the project. They became adapted and re-edited during the project; the second version was published in April 2014 and the last version in June 2014.

Feedback regarding MATHFactor by April 2014:



Terms and conditions for MATHFactor are complex.

Conclusion: At the beginning (in pre-evaluation stage) terms and conditions were not clear for all. This changed – in the interviews all said that the terms and conditions are well defined and clear!

Terms and conditions for MATHFactor are easy to fulfil.

Conclusion: At the beginning (in pre evaluation stage) teachers could not imagine, that terms and conditions could be easily fulfilled. In the interviews at the conference all reported, that finally terms and conditions are easy to fulfil. Theoretically it sounded hard for them, but in practice it was not!

MATHFactor makes maths more fun.

Conclusion: All teachers agree in the pre-evaluation and in the interviews, that MATHFactor is more fun than traditional lessons.

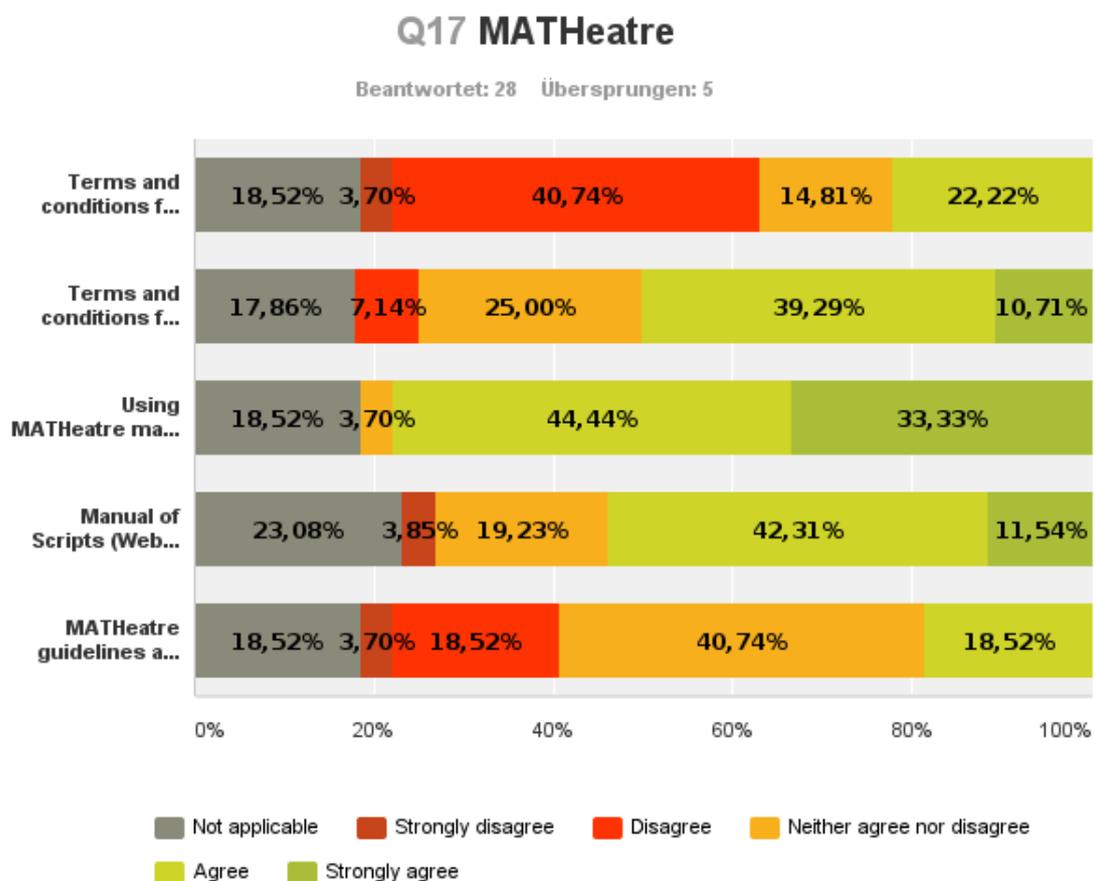
The MathFactor examples and the collection of scripts (website or book) are good for additional ideas to improve our presentation.

Conclusion: At the beginning teachers could not see this because it was not available on the internet. The good practice examples did not have a clear structure at that time, so it was hard for teacher to use it. The consortium added an analysis to each example. This analysis is helpful for the teacher. They can now find special topics very easily.

MATHFactor helps to understand mathematical problems more easily

Conclusion: At the beginning (in pre evaluation) terms and conditions were not clear to all. This changed.

Feedback regarding MATHeatre



Terms and conditions for MATHeatre are complex.

Conclusion: At the beginning (in pre evaluation) terms and conditions were not clear to all. MATHeatre was a completely new idea. Teachers had to experiment with this tool and had to gain experience. After that – we see this in the final interviews – they were able to work with this tool.

Terms and conditions for MATHeatre are easy to fulfil.

Conclusion: Same with MATHFactor – see above!

Using MATHeatre makes maths more fun!

Conclusion: Same with MATHFactor – see above!

Manual of Scripts (website or book) are good for additional ideas and to improve our MATHeatre Play.

Conclusion: At the beginning, teachers could not see this because it was not available on internet. The good practice examples did not have a clear structure at that time, so it was hard for teachers to use it. Most of them received the manual of scripts at the conference. We now have feedback that these examples are very helpful.

MATHeatre guidelines are complex.

Conclusion: At the beginning (in pre evaluation stage) guidelines were not clear for all. This changed – in the interviews all say, that the guidelines are well defined and clear!

Examples of written feedback:

“It’s too much information in English so I would like a Swedish guide to contact with my Questions“. 24.02.2014 12:06

“The aim of it is obvious, and it made me think in completely different way” 12.02.2014 22:32

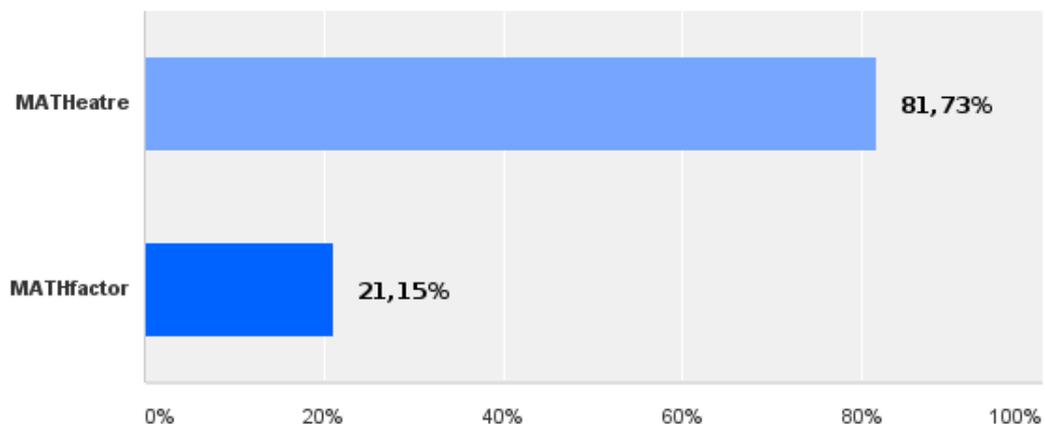
Conclusion:

The guidelines need to be in a short and easy to read version. The translation will not include all European languages, so it is important to update and improve the English in the existing form. The project caused a change in the teaching process applied by those teachers; they started to work on Le-Math.

Student’s feedback regarding both competitions:

Q4 My personal favourite is?

Beantwortet: 104 Übersprungen: 12



Conclusion:

Students’ favourite is MATHeatre. The reason why was defined in the interviews. MATHeatre is more fun because it is using teamwork. To create scripts together, solve problems in

teamwork, as a group it makes students feel more secure on stage. This is the main reason why they prefer it!

Evaluation results

1. There was a mix of terms – sometimes it appears as “Guidelines”, sometimes “Guidebook” and sometimes “Written methodology”. This caused some misunderstandings. This problem is solved with the finalization of the project output. The project uses a clear wording. The Guidebook contains the Guidelines and Tools and the Guidelines contain the methodology.
2. Some schools started contributing in a very early stage, because they received the information before the first version of the “Guidelines” was published. Finally they did not read the guidelines because of this fact.

7.2. Rules and procedures for participating in the pilot testing procedure.

The first draft of the rules was edited in August 2013. The partnership worked hard to cover all problems in registering for the events, regarding copyrights, parents information, evaluation criteria’s etc.

The statistics and the conclusions you will find under 7.1.

In the interviews of the competition-winner’s answered:

➤ **What’s your feeling now?**

Very excited. We are waiting for our show because it was a pleasure to work together. We made new friends.

➤ **What’s your feeling now?**

Happiness, excitement. Just want to go on the stage and play! Very beautiful here. A little bit scared!

Regarding the rules and procedures this feedback is to discuss:

➤ **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**

Time was a problem because I need more time to present my problem. You need to explain it slowly because it is difficult. Teacher added- Allowing some audio-visual and 5 minutes. The students need some time to settle down and then could make a great presentation.

Evaluation results

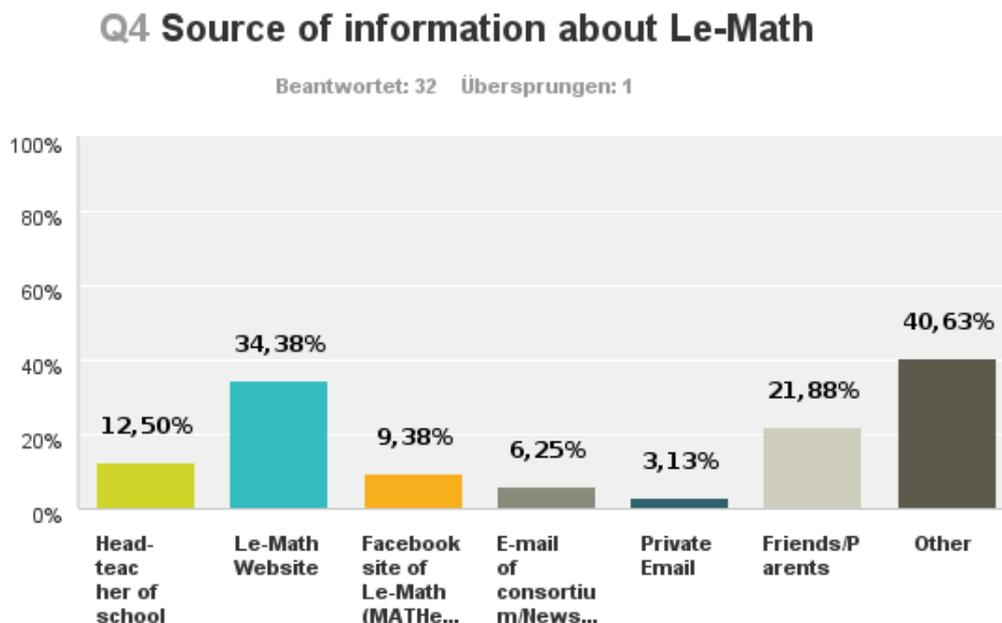
1. In the final interviews we only got positive results regarding the rules and procedure for participating in the pilot test.
2. All enjoyed the fact that the presentation was in two steps: first in video and second in front of the audience. Nearly all reported that they preferred the video more than the presentation in front of the auditorium, but they agree that through both steps they gained a lot of experience.
3. Special for MATHFactor time for age group 2 (14-18 years) was a problem. This was mentioned in the interviews. Teacher and Students ask for more time – a suggestion could be 5 minutes instead of 3 minutes. Teachers proposed to allow audio-visual to make the presentations more easy to be understand by the audience (most of the listener do not speak English very good!)

4. Some did not follow the rules strictly - especially in step 1 (the video) - they edited the video – something that is against the rules, but it was not easy to figure out by the jury. The rule that adults should not be actors on stage was slightly broken by one finalist. The partnership has to discuss these rules for future competitions.

7.3. Announcement for inviting interested schools to participate

The partnership announced MATHeatre and MathFactor in their countries in schools and invited participants in the whole of Europe and in non-EU countries. The dissemination report shows the activities. The traffic on internet is a good evidence (reported by WP 6) and received feedback from pre-evaluation, evaluation of audience during the presentations and in the final interviews.

Teacher:



Open answers for other:

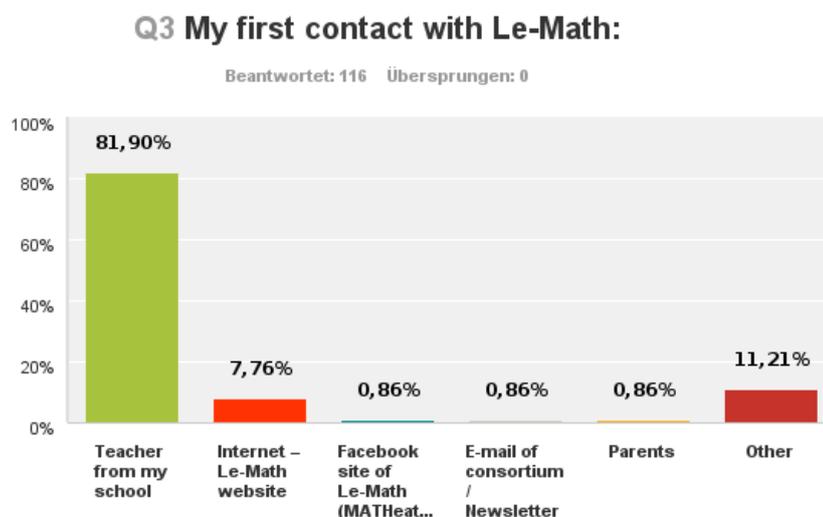
Other (please specify) Datum

- 1 E-mail from national education 27.02.2014 16:38
- 2 Cyprus mathematical society 26.02.2014 21:52
- 3 Cyprus Mathematical Society 25.02.2014 13:49
- 4 Mrs Katell Tréguer, math teacher in our school 25.02.2014 13:11
- 5 Cyprus Mathematical Society 25.02.2014 10:59
- 6 Mrs Katell Tréguer 25.02.2014 10:54
- 7 Presentation of Péter Körtesi in Cluj Napoca 14.02.2014 09:59
- 8 the training course MATHEU, Identification, Motivation and Support of Mathematical Talents in European Schools 13.02.2014 11:10
- 9 Mathematics teacher Jasna Kos 13.02.2014 11:10
- 10 Teacher from Facultad de Educación Zaragoza (Spain) 13.02.2014 10:58
- 11 eTwinning 12.02.2014 22:08
- 12 Participation on the previous Conference in Gothenburgh, 2013 12.02.2014 21:52
- 13 eTwinning 12.02.2014 17:10
- 14 project partner 12.02.2014 16:26

We see that the main source of initial information for teacher was the direct information. Direct mailing out from our info account was less reliable for teacher. If they did not know the email address they deleted the information before reading. Head teachers know the sender better and trust the information – the information went to the teachers.

The website was an important information factor. One problem was reported by a partner: A mother checked the website and could not find a contact address or a contact telephone number. She tried to get information on CMS, but was not successful. The telephone contact she used did not work – so she mentioned this is not serious, informed the other parents and at the end the school did not decide to allow the students to participate. The coordinator was informed so he added more contact details on the website.

Students:



Source of all information was the teacher in school; sometimes not the mathematics teacher, but in general a teacher.

In the feedback in the interviews

- **How did you learn about the possibility to take part in this competition?**
*We participated in the **last 3 conferences**. From the conference the year before.*
- **How did you learn about the possibility to take part in this competition?**
*The **teacher talked with the other teachers of the school**. The presentations was prepared **outside the school** but with the collaboration of the students. The teacher liked the idea that*

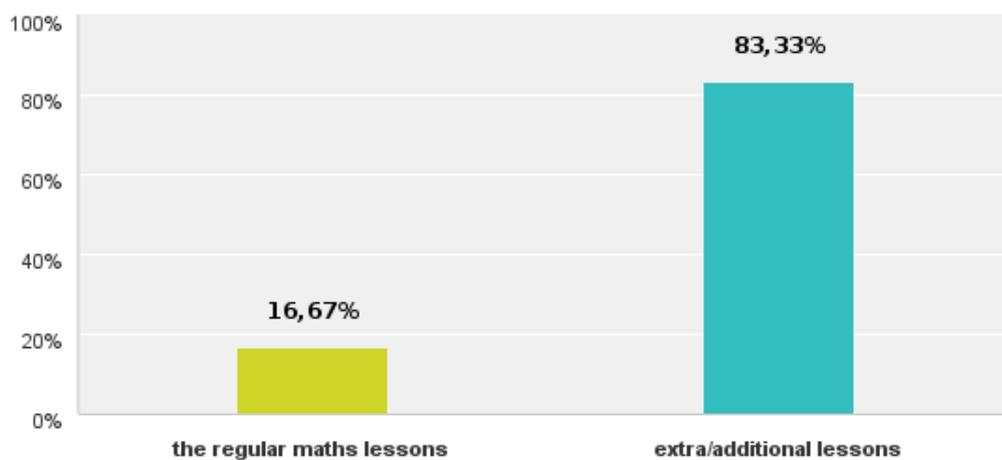
maths is part of every day's life and we should not restrict maths in only what is taught within the school curriculum.

Problem: We have highly motivated teachers! The interviews showed that almost everyone worked on the presentations – especially in the theatre play – in their free time without payment!

They even worked on weekends and they enjoyed it very much! Students used to work during breaks, on their way to school and in their free time.

Q10 The presentation of my pupils was prepared during

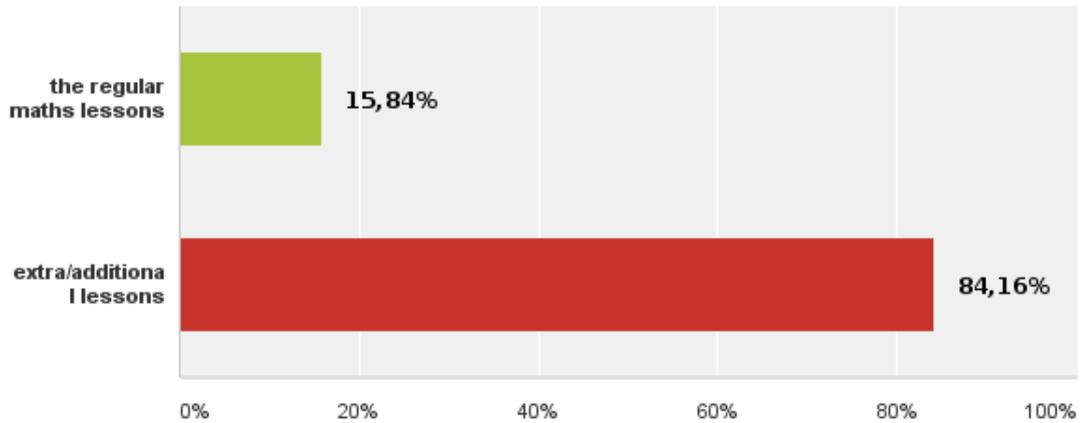
Beantwortet: 30 Übersprungen: 3



Evaluation result for students (shown in pre-evaluation, interviews and auditorium)
The most important source of information for students was the teacher. The teacher normally asked in the class “who is interested?”, she/he presented different mathematical topics to the students; they selected a topic and wrote their presentation. Only a few used presentation written by their teachers or used scripts out from a book.

Q9 My participation in Le-Math related activities is during

Beantwortet: 101 Übersprungen: 15



[The majority of teachers and students worked on the presentation in their free time!](#)

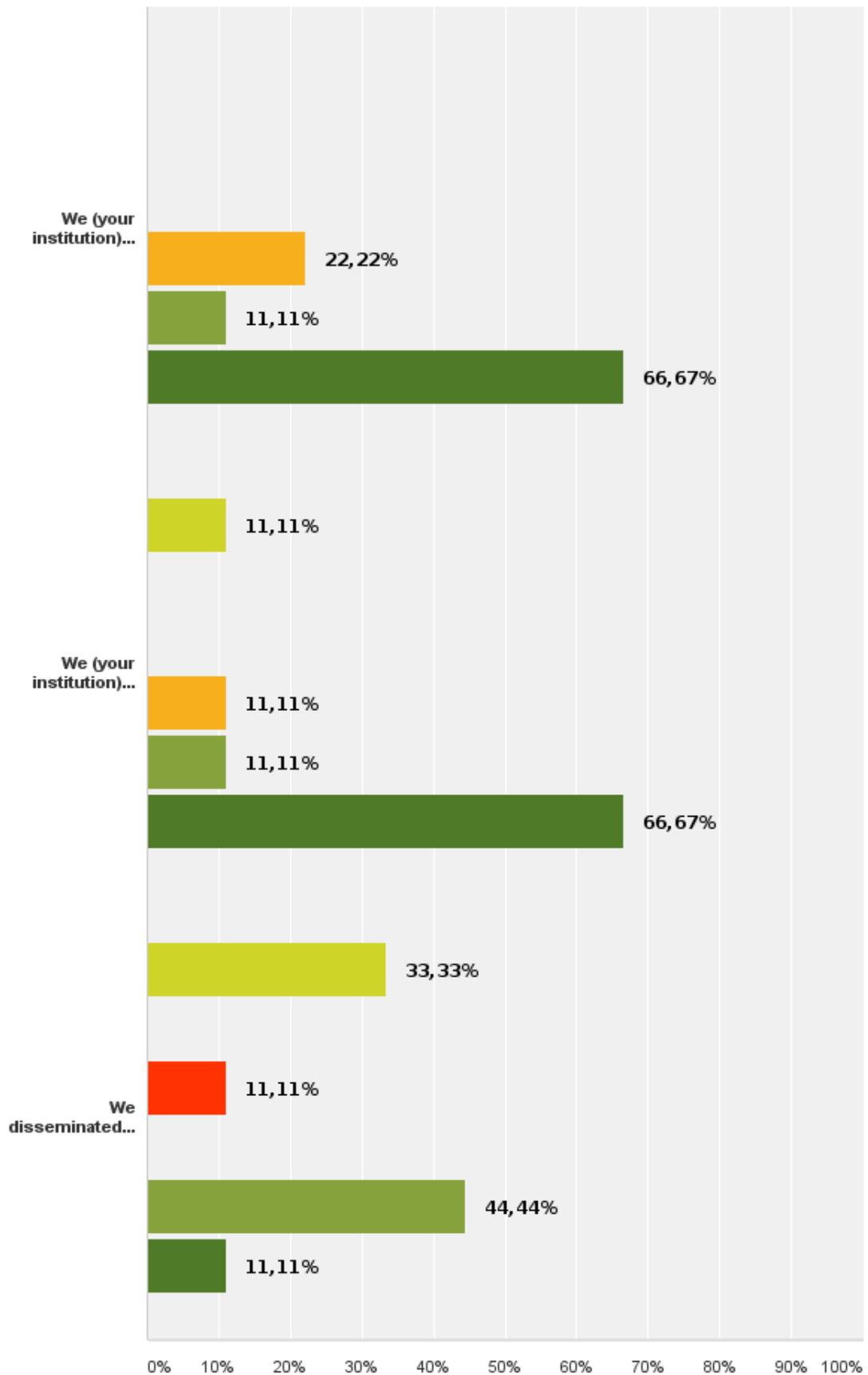
Questionnaire - partnership regarding dissemination of Le-MATH competition

The dissemination of Le-MATH competition was an ongoing process and started very early – some partners disseminated the project at the moment the project started.

This graph shows where the project was disseminated!

Q2 Dissemination

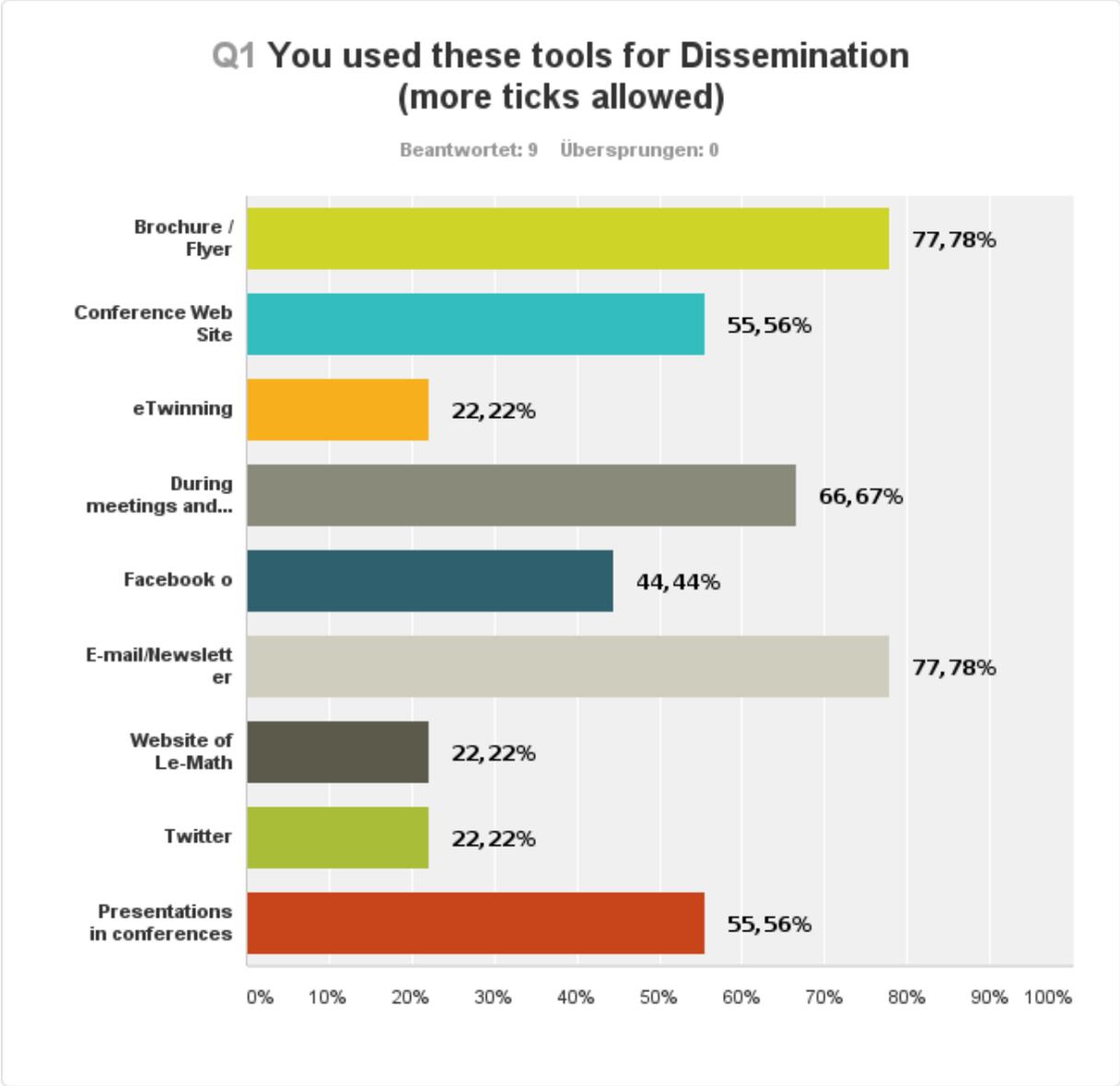
Beantwortet: 9 Übersprungen: 0



Not applicable Strongly disagree Disagree Neither agree nor disagree
Agree Strongly agree

We (your institution) disseminated the LeMath competition national.
We (your institution) disseminated the LeMath competition in some European countries.
We disseminated the Le-Math competition to non-EU countries.

Conclusion: All disseminated the Le-MATH conference on different levels. Only a few didn't disseminate the competition on non-EU level.

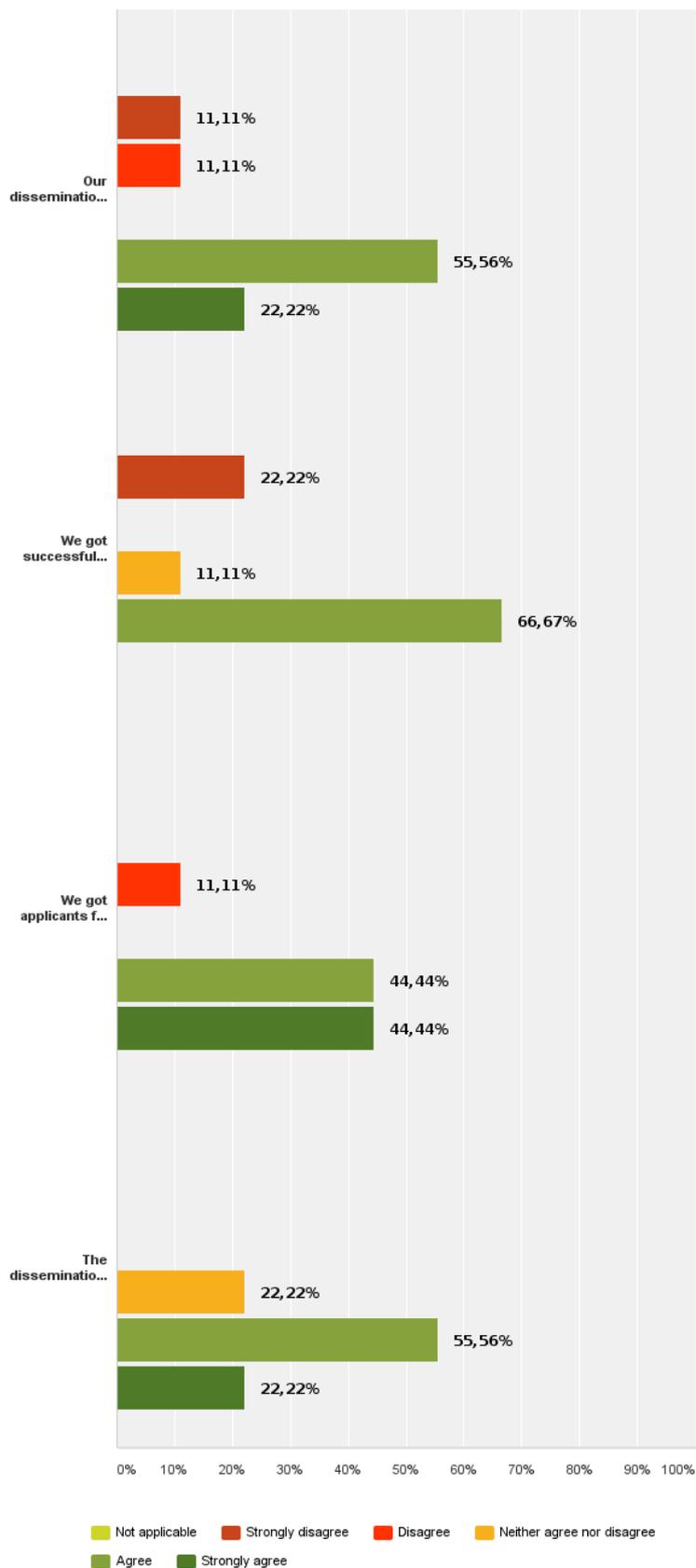


The partnership used different methods to disseminate the competition. We know from the feedback of the teachers, that personal contact was the best option to disseminate the competition. We see that successful presentation was done and all different dissemination possibilities became used by the partnership.

Regarding the success, we got this feedback:

Q4 Dissemination

Beantwortet: 9 Übersprungen: 0



Our dissemination method was successful.
 We got successful feedback from schools.
 We got applicants for LE-MATH competition from our country.
 The dissemination of LE-Math Competition (by the partnership) fulfils our expectations.

In general the partnership feels satisfied with the results of their dissemination activities.

Evaluation results for teachers (shown in pre-evaluation, interviews and auditorium).

1. The high number of emails sent to schools (more than 30.000) brought positive results. 6% (this is about 2.000 teachers) report that email was their primary source of information.
2. The website was an important dissemination factor. The website needs an Impressum (including name of the institution, the president of CMS, the address, the telephone and fax number and the email contact. This is to be added at the homepage and in addition under contact.
3. A group of teachers got individual invitation to the project by eTwinning, in congresses, in presentations of the partner organizations, from head teachers, from friends etc. The invitation from “mouth to ear” was the most effective within presentations at the partner organizations, from head teachers, from friends etc.
4. The partnership disseminated the Le-MATH conference from beginning of the project on different levels and used all possible dissemination methods.

7.4 Participants use the on-line platform

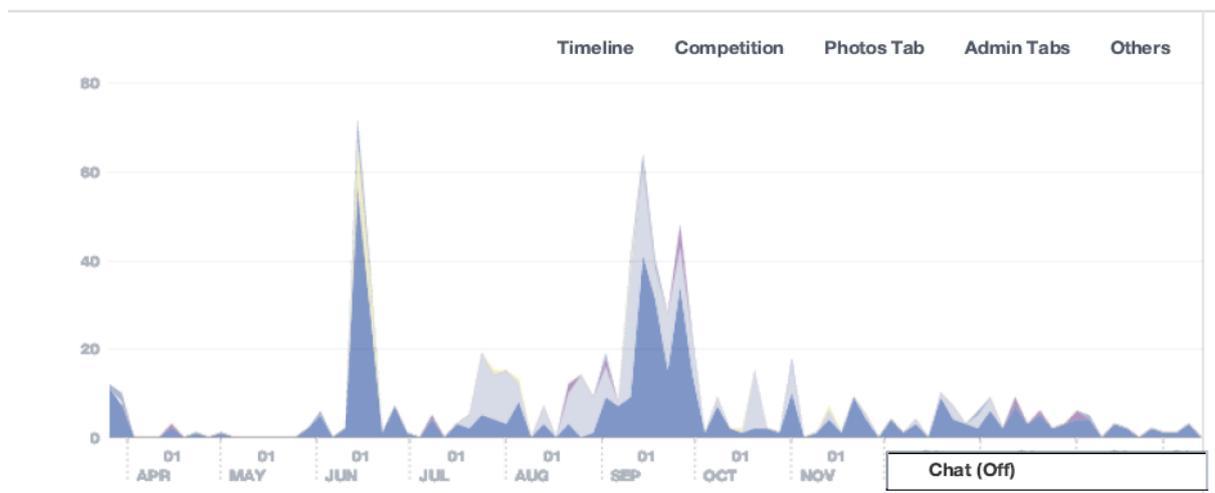
It was important for the participants to use the online platform, especially for download and/or visit examples of theatre or presentations. This platform started from the beginning of the project and became used during the whole reported time of the project.

Feedback from WP6 regarding use of platform:

The traffic on the Website shows the progress of the project: Huge traffic after dissemination was done, with the next peak after starting the dissemination of competition

Page and Tab Visits

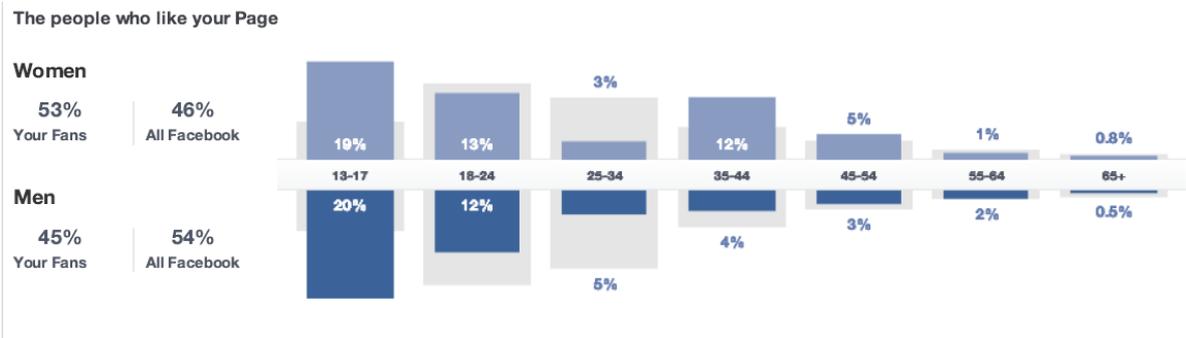
The number of times each of your Page tabs was viewed.



Conclusion: The partnership did a good job. We see in these graphs that after dissemination activities – special for step 2 – the competition – internet traffic increased.

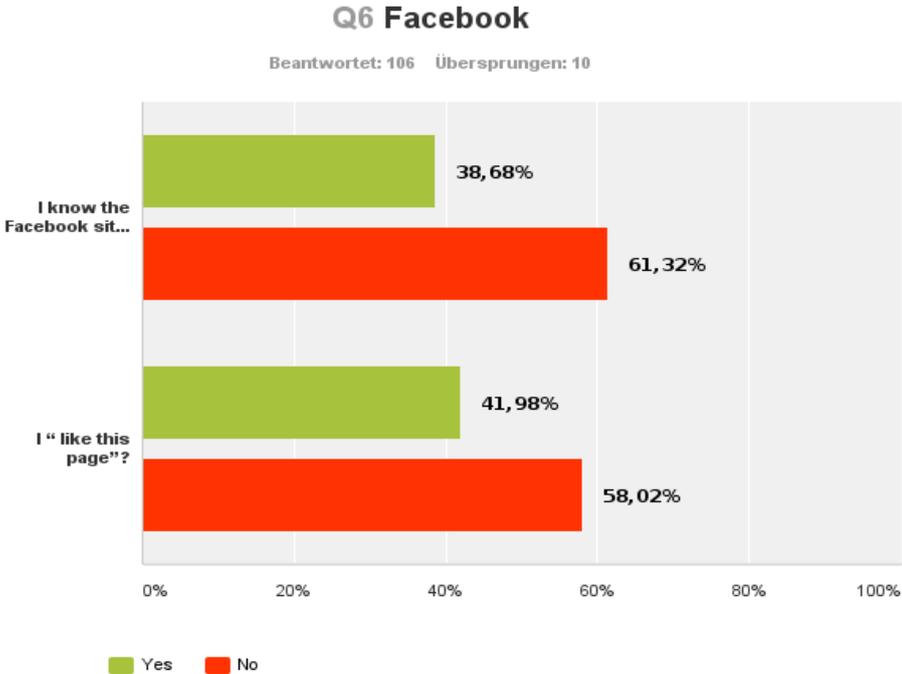
Feedback from WP6 regarding additional social media clearly shows that the majority of users of social media are between the ages of 13 to 17.

Male and female are nearly balanced. In the 35-44 age group the majority are women– we assume that these are teachers.



Conclusion: This result is surprising and shows a gender balanced interest in Le-Math! In the age group 45-54 we have got more women – this may be teachers who used this platform for information and to watch videos etc.

Feedback of students:



After the first steps, students started to look at Facebook. 38% of the students already knew the site and 41% “liked” the project’s page. These conflicting results can be explained if we take into account the language limitations of the students and potential misunderstanding of the question. But we can assume that 50% of the students who took part in phase 1 used the Facebook site.

Evaluation result

Facebook was favoured by students. Teacher used it to watch examples and present them to their students. This platform was a very important tool for all participating schools, because the alignment was from now on clear to all!

The Facebook page was not a source of information. (10% of teachers but only 0,8% for students!) We expected to get more “likes” at the beginning. After the start of the project the online platform became very important for all participants. Up to the August 15th 2014, we received 808 likes.

7.5. Participants are asked to provide feedback on the application of the methodology.

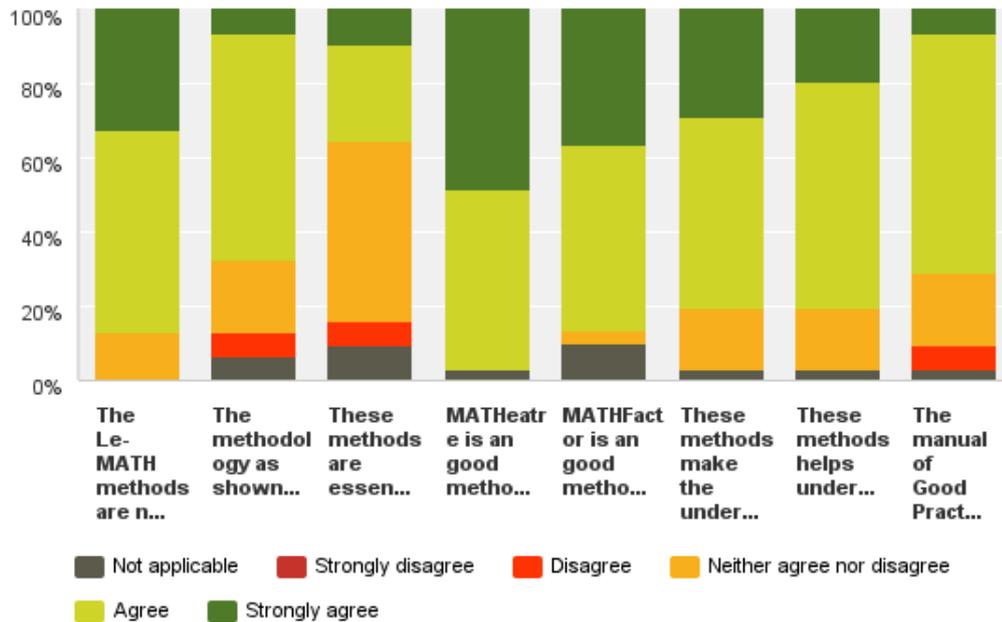
The methodology was developed from the beginning. We have seen that it was not easy to find a “common language” because the individual adoption of competitions is definitely very different in Europe.

The wording was not too clear – we used guidelines, guidebook and methodology in a mix.

Teacher feedback in the pre-evaluation

Q5 The Le-MATH methods

Beantwortet: 31 Übersprungen: 2



The Le-MATH methods are new and innovative for me.

Conclusion: For teachers these new methods bring innovation to the life of the daily school.

The methodology as shown in the guidelines is helpful to prepare the activity.

Conclusion: Immediately after the start of the project only 68% of the teachers find the guidelines helpful. After the start of phase 2 (the competition) teachers who read the guidelines liked them.

These methods are essential for my work as a maths teacher.

Conclusion: At the stage of pre-evaluation there was very little experience to answer this question; nearly 50% where curious if these methods are essential or not. In the interviews we got a high score of acceptance.

MATHeatre is a good method to motivate pupils.

Conclusion: After some experience and time teachers needed to gain experience we got 100% positive feedback. Nearly 90% agree: "This is a good method"

These methods make the understanding of mathematical problems easier.

Conclusion: 80% agree and give feedback that the understanding of math problems became easier. In the interviews we received feedback that a great number of students improved their grades after using Le-Math Methods.

These methods help underachievers to understand mathematical problems better.

Conclusion: Teachers agree with this hypothesis. We could show that underachievers have now more success in mathematics.

The manual of Good Practices helps improve the preparation for these methods

Conclusion: The manual of good practices received positive feedback. The partnership started to improve this manual by adding analysis. This was helpful for teachers as they reported in the interviews.

In the Interviews we found out, that some of the teachers did not read the methodology. They started to work using their own individual methodical thinking. This was partly because they found that the methodology posted on the website was too demanding!

Evaluation result:

1. The guidelines were written without taking into account that some mathematics teachers are not fluent with the English language. The pre-evaluation and the final interviews reported this problem very often. The partnership will solve this problem by editing a short synopsis at the beginning of the guidelines. In addition the guidebooks were translated in the languages of the partnership.

It was not possible to translate it in an earlier stage, because the guidelines are a final product and needed an update after the pilot testing procedure.

2. The problem, that teachers do not like to read “abstracts” of methodology is well known in Europe. They need very practical and simple examples – like a “cooking book”. The partnership recognized this problem very early and started a “Theatre Play writing competition on the theme of Mathematics” and published the examples on website and in a book. In addition the partners decided to write additional examples and to publish them. The appearance of this material was too late for the pilot test, but in the competition all got these books. The feedback in the interviews was positive!

2. The pre evaluation (teacher and students) shows impressively that the Le-math Methods are innovative, attractive for all, makes maths more fun, motivates to learn math.

7.6 On-line assessment by the partnership

Till 17th of March 2014 we got

31 submissions for MATHeatre (14 for age 9-13 and 17 for age 14-18)

27 submissions for MATHFactor (3 for age 9-13 and 24 for age 14-18)

18 examiners from the partnership assessed the videos. We sent after the assessment a questionnaire and got detailed feedback.

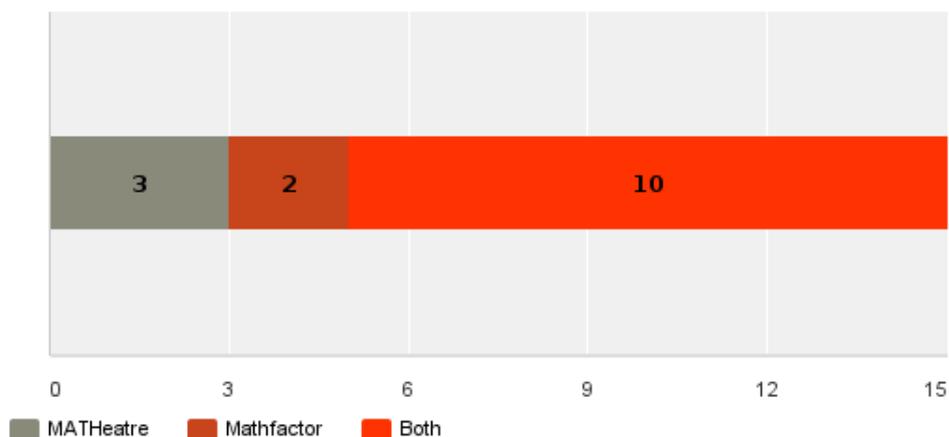
The whole partnership became involved in the online-assessment. The coordinator allow the submission by respecting the nationality of the assessor (they did not get submissions from their own country). The evaluator was excluded from this process.

The coordinator and WP 6 leader (the web manager) had access to all submissions while all other partners had access only the assigned submissions.

We sent a questionnaire to the evaluators and got these results:

Q1 Which part did you assess

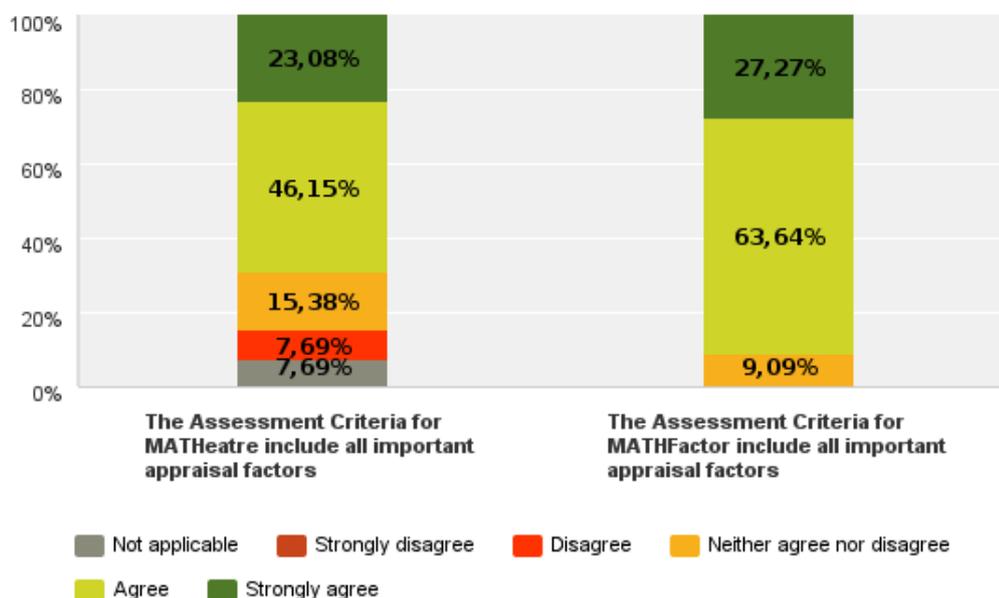
Beantwortet: 13 Übersprungen: 0



Conclusion: The mix of both methods made it reliable. This decision was perfect for getting compatible results.

Q3 Criteria

Beantwortet: 13 Übersprungen: 0



MATHeatre was a new tool even for the partnership. The problem was that the evaluators had a solid background in mathematics, but did not have experience to form an opinion regarding the theatrical aspect. This aspect was defined firstly in September 2013 and then revised in July 2014.

Conclusion: This result shows that it was easy to assess MATHFactor, but hard to work in MATHeatre.

Another hint comes out from the open questions:

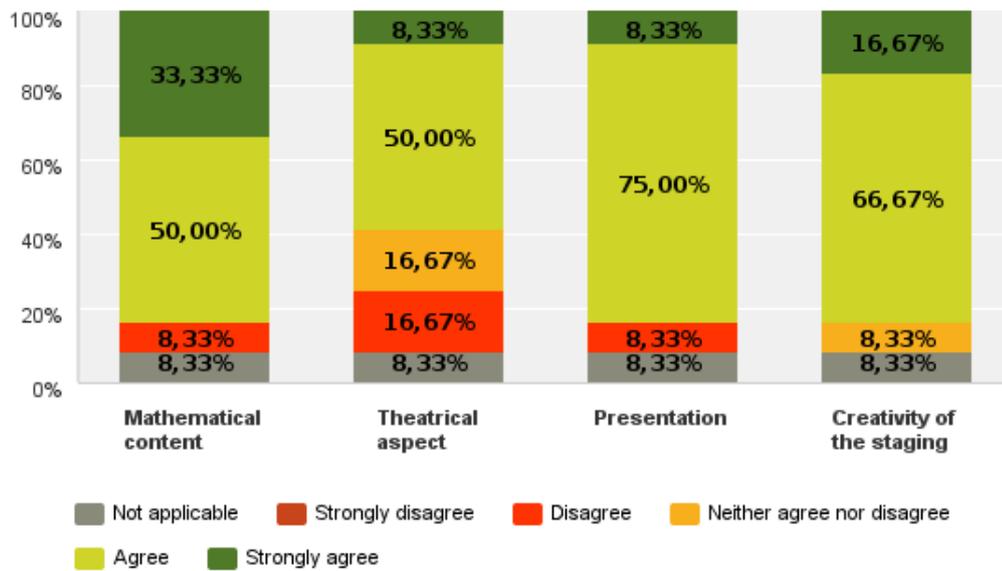
“In the future we might have to give different weight to the various criteria, since in some of the plays the mathematical content was minimal”

This has to be discussed within the Le-MATH focus group.

The following graph intensifies this statement.

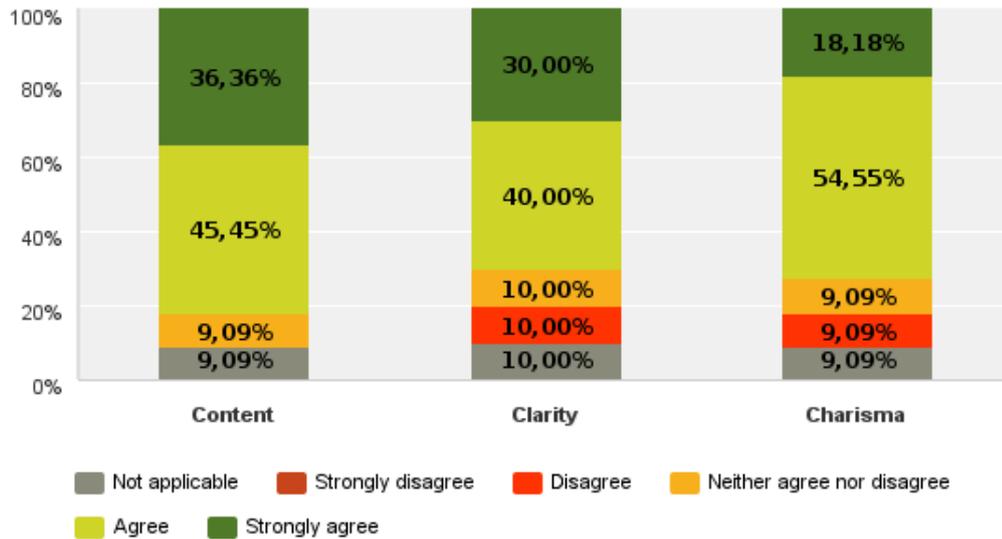
Q8 This criterion was easy to assess in MATHeatre

Beantwortet: 12 Übersprungen: 1



Q9 This criterion was easy to assess in MahFactor

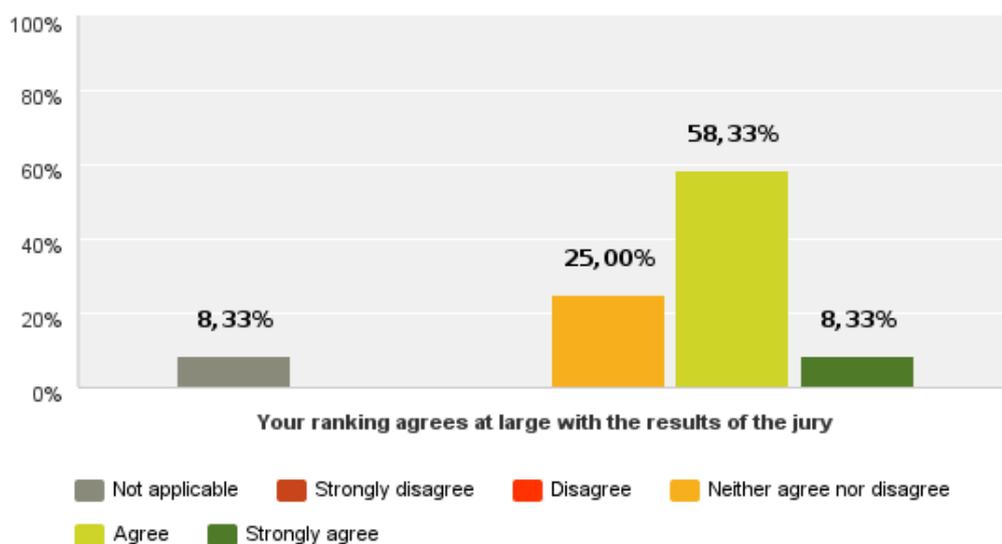
Beantwortet: 11 Übersprungen: 2



For me it was surprising, that the term charisma did not get worse feedback, because in the project meetings there was hard discussion concerning it. This shows that we need good preparation for all participants of LE-Math courses, and then they will be able to work on assessments in their own schools.

Q6 The coherence of your assessment with the jury decision (after getting the results!)

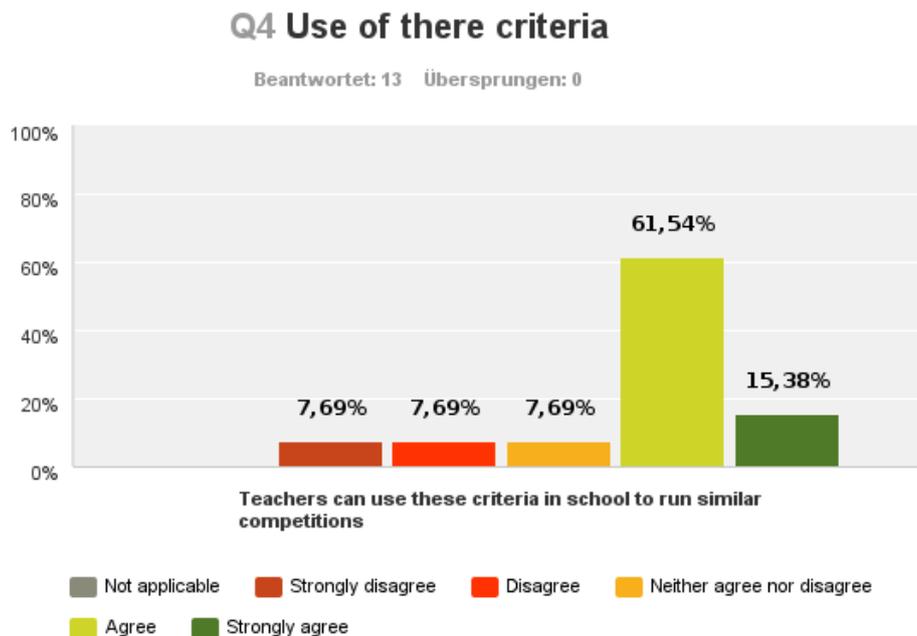
Beantwortet: 12 Übersprungen: 1



We could figure out, that there was a high coherence between the jury quoting in the different criteria of MATHFactor and MATHeatre.

Conclusion: The higher the level of criterion-definition, the higher is the coherence (a homely insight).

Teachers can use these criteria in school to run similar competitions



The majority thinks that teachers can use these criteria in school to run similar competitions. But in the training course they have to gain a lot of experience in using these criteria.

Evaluation result:

1. Regarding the assessment criteria it was fine for MATHFactor, but for MATHeatre there were some difficulties. Especially, the “theatrical aspect” was not easy to assess. In the training courses the partnership has to focus especially on the understanding of the theatrical aspect. This needs to provide experience by doing examples!
2. The coherence in the assessment was homogeneous – we could not find too many differences in the marking.
3. The jury recommends these criteria for use in schools.

7.7.Selection of finalists

For the final competition after the online assessment these number of participants were invited to present their presentation/play:

MathFactor: Age group 9-13 – 3 presentations

MathFactor: Age group 14-18– 7 presentations

MATHeatre: Age group 9-13 – 6 presentations

MATHeatre: Age group 14-18 – 8 presentations

We asked about the selection of finalists in the interviews and got feedback in the questionnaire for the audience - open questions.

The first characteristic for the participants is that we got students with a strong but realistic self-confidence. They all worked hard and were positive about the quality of their presentation.

- **Did you expect to be here in Cyprus when you started working on your presentation?**
With every rehearsal we got more and more confident, but we didn't really expect to be here. I secretly hoped that all our hard work would pay off.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
That was our goal. We did do our best so we expected it. We hoped for it.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
Of course. Our main purpose was to be here. We wanted to come here.

The selection was accepted by the candidates.

The feedback we received from the audience under “recommendations for the future” was wide from very positive to constructive critical:

Some examples:

- Don't change anything
- Everything is wonderful; you don't need to change anything.
- I applied for MATHFactor, but I did not make it to the final! I would appreciate if there was feedback on WHY I did not pass!
- More clear on what is what on the website!
- Use video projection in the background. Illustrations would be more visible.
- The comments between individual competitions could be left out.
- Candidates to be allowed to use power point.
- Include other languages and translators because in many countries only some private schools teach in English.
- Making hole in cookies doesn't help to learn math!
- I like it very much.
- Major Disappointment: Many hours of boring presentations with the exception of MATHeatre which should have been the only ones presented. I hope that in the future the selection of plays and presentations will follow different and more just criteria.

- Keep on organizing the happening!

Conclusion:

1. A statement of interest from the jury for each submission would show respect for the submitters! This is necessary for the students and teachers to improve the quality of their presentations.

The rules for the selection of the jury should be published. Every submittal should know who was the member of jury judging her/his presentation. The quality of some presentations was a problem for some visitors in the audience. They did not know enough on LE-Math. The aims of Le-Math should be explained shortly before the presentation starts!

Evaluation result (interviews and the questionnaires out of the audience)

1. The participants act with a strong self-concept. Nearly all participants expected to become selected because of the quality of their presentations.
2. The selection was accepted by the applicants. In the open questions we got from non-successful applicants they asked for the reason why one was not selected. It is not a matter of selection, it is a competition, everyone is good but some are a little better and this was the difficult job of the jury, so the competition had winners.

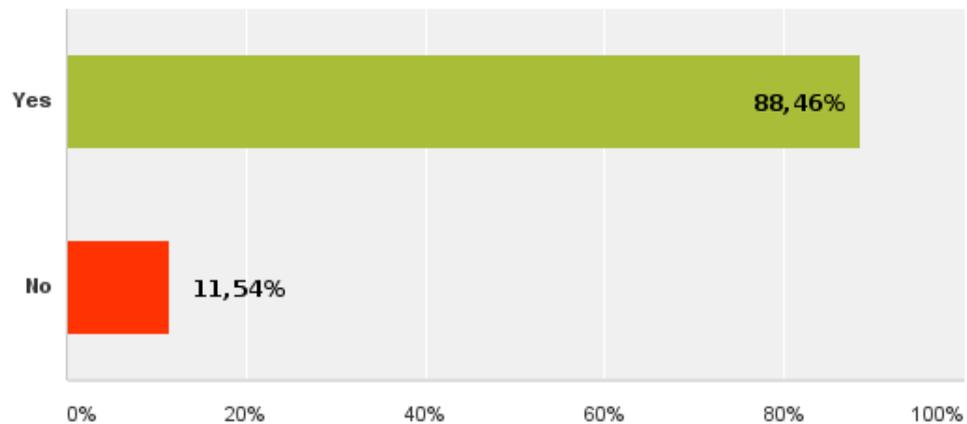
7.8. Feedback by pupil's participants before the final competition.

We sent a pre-evaluation questionnaire to all participants and received feedback from 34 teachers and 134 students. This feedback was important for the progress of the project and will be shown below. These results are crucial for the project:

We were interested on attitude of students:

Q10 Preparing for the Le-Math performance has a positive influence on my attitude to mathematics?

Beantwortet: 104 Übersprungen: 12



Answers in the open question:

- 1 it made me to get fond of them and enjoy more than before 19.03.2014 23:09
- 2 Because it has help me to understand some notions, and I like to share my knowledge to others 10.03.2014 15:04
- 3 It helps me improve my skills on Maths. 05.03.2014 21:57
- 4 because it's easier than a simple math 04.03.2014 15:29
- 5 The preparing for the performance has a positive influence on my attitude to mathematics because I applied my mathematic skills in the art. 27.02.2014 16:28
- 6 Because it helps me to learn new things and to improve my knowledge 26.02.2014 22:56
- 7 It's very nice because we can see them in a new light. 26.02.2014 07:17
- 8 I know now math can do in a positive attitude 25.02.2014 21:36
- 9 I'm more interested in math now when I am preparing for the Le-Math performance. 16.02.2014 11:11
- 10 I've learned something new about an unusual and interesting topic, found fun topics of maths 14.02.2014 22:15
- 11 it help me realize that math can be fun 14.02.2014 21:34
- 12 It made me realize how much we depend on mathematics and why it is important that we study it 14.02.2014 21:24
- 13 Mathematics already has positive influence on me. 14.02.2014 21:09
- 14 It has indeed made me realize that mathematics can be fun 14.02.2014 20:54
- 15 I learnt a lot through fun. 14.02.2014 20:07
- 16 I found the world and history of mathematics really interesting and enchanting. Learning about stories behind famous conjectures and theorems is really interesting! 13.02.2014 19:03
- 17 By trying to find an interesting theme of the performance, I changed the way I see math and realised it is present everywhere around me. 13.02.2014 17:22
- 18 LOVED maths before ! 13.02.2014 15:

Conclusion: Nearly everyone reported positive influence on their attitude towards mathematics. We can conclude that this project reached the aims from the first year during step 1.

After step 1 – in the interviews – this was approved by students and teachers:

➤ **Do they like mathematics more now or the same?**

Yes, they like more maths, and for some their marks became better. Definitely they are better in prime numbers. Anyhow they do many extra activities with their math teacher.

➤ **Do they like mathematics more now or the same?**

One likes maths more, and the other the same but she improved her marks in comparison with last year.

➤ **Do they like mathematics more now or the same?**

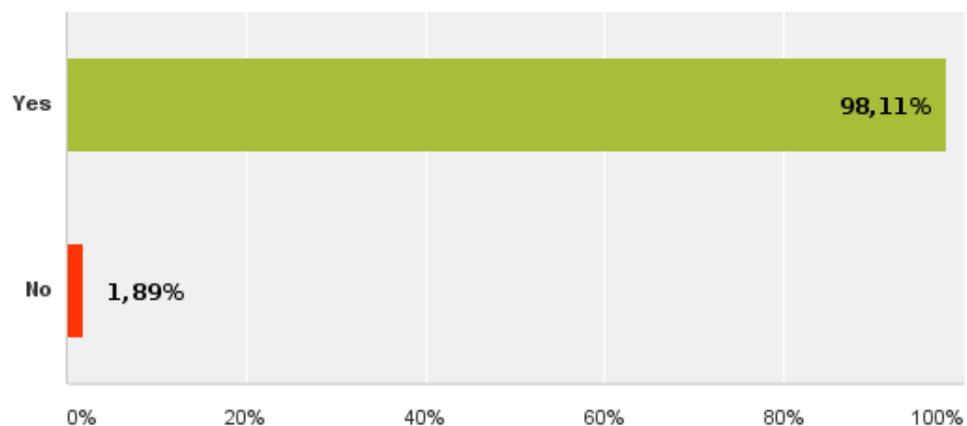
We have created something that most people don't think go together, maths and theatre. It gave us another success of view on mathematics.

Conclusion: Le-math methods make pupils to like maths more than before. In some cases they get better marks/points than the year before!

Hypothesis in the project was that “fun” increases success in mathematics. It is important for leaning maths.

Q8 “Fun” is important for learning Maths.

Beantwortet: 106 Übersprungen: 10

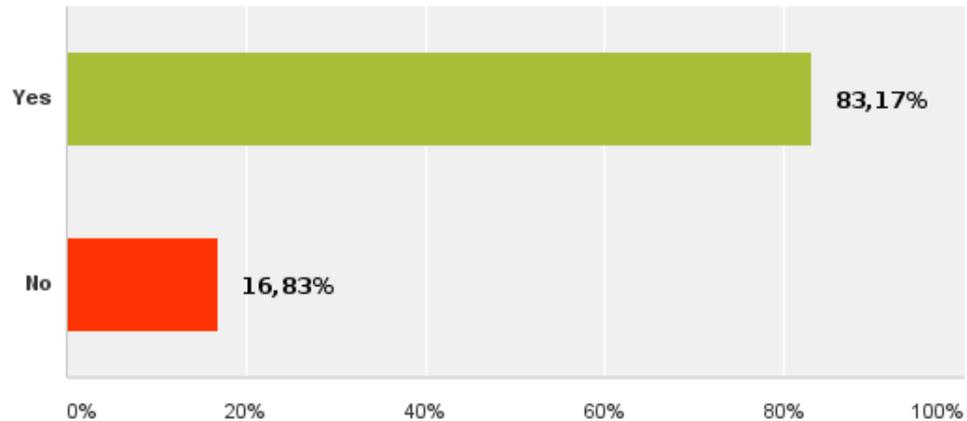


Conclusion: Pupil agrees with nearly 100%. All results show, that fun is an important factor!

Even for underachievers fun helps to learn maths easier.

Q11 Learning Maths is easier by using this method?

Beantwortet: 101 Übersprungen: 15



Students agree that learning maths is easier by using Le-Math methods. They gave feedback why is that:

Although it is not so easy to perform maths in every new subject, it breaks the routine of every day math lesson 19.03.2014 23:09

2 Because it's great to learn mathematics in group. It's more ludic 10.03.2014 15:04

3 I don't know 08.03.2014 18:06

4 Learning Maths is easier by using this method because it's innovative and attractive. 27.02.2014 16:28

5 Because it is very useful 26.02.2014 22:56

6 Yes, because we learn lots of vocabulary, if we work on a mathematician's life, we know his biography and we learn his properties. 26.02.2014 07:17

7 it's more interesting and fun 25.02.2014 21:36

8 That is more funny! 25.02.2014 20:58

9 it's easy to learn math with fun 25.02.2014 18:53

10 it's more fun 25.02.2014 18:07

11 Because it's more interesting to learn math. 16.02.2014 11:11

12 because is more fun 14.02.2014 21:34

13 It is much more interesting to study mathematics this way 14.02.2014 21:24

14 Rather than people talking about it, we actually see the importance of mathematics in our everyday lives 14.02.2014 20:54

15 I think it is better than studying on the old-fashion way. 14.02.2014 20:07

16 I guess me and my friends now know the Goldbach's Conjecture by heart and understand the importance of such discoveries for men like Andrew Wiles etc. 13.02.2014 19:03

17 My performance does not help me with any of the topics of math we have done in school. Yet. 13.02.2014 17:22

18 probably , especially because many pupils don't know how maths can be useful 13.02.2014 15:57

19 doing exercises is still the only way to learn math 12.02.2014 23:40

20 It makes it easier to understand and remember 12.02.2014 21:55

21 Because is more interactive, so we pay attention in the explanations. 12.02.2014 20:21

22 Different approach to maths 12.02.2014 19:37

23 yes it is 12.02.2014 18:14

24 It is certainly more appealing to the students. 12.02.2014 15:04

25 Yes, definitely. My classmates watched the video and they understood it very well, as opposed to when they read about it.

12.02.2014 11:55

26 Visually presented problems are easier to understand. 05.02.2014 20:22

It demonstrates that using these methods makes maths more understandable! The feedback from everybody (students, teachers, audience) is clear – fun makes maths easier!

Evaluation results

1. Preparing the presentations had positive influence to the attitude towards mathematics.
2. Learning maths is easier by using these methods. Even “underachievers” learn easier
3. In the interviews we learned, that more than 50% of the participants get better marks/points in maths after using Le-Math tools. This was confirmed by the teachers!
4. Le-Math brings fun and fun is important for learning maths.

7.9 Invitation to the final competition.

The selected candidates got a written invitation to the final competition in Cyprus. This letter has got a very clear structure on the rights and duties of participants. A letter including all details had to be signed by the parents.

- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
It was enough
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
It was OK but he received an invitation with the wrong name.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
It was ok and helpful for me to come here.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
Yes, it was informative enough and contained everything.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement? Of course, it was excellent. Everything I needed was there.**
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
The invitations were sent to the teacher email. The parents were informed and the invitations were translated to the parents as they had to sign the approval. But the students didn't see the invitations.

This feedback shows that the consortium did a very good job, considering everything in this invitation!

Examples showing that students were afraid to work in front of the audience:

➤ **What's your feeling now?**

We feel **excited and a little bit nervous** because we do not know how the big audience will react. **We are not actors.**

➤ **What's your feeling now?**

Very **happy**, a little bit **stressed!**

At the end, all performances were done professional.

We asked what else you learnt than mathematics:

➤ **What else than mathematic did you learn?**

Experience, and confirm what Einstein said: **when you have knowledge of something you should be able to present it to your grandmother in a way that she can understand it.**

➤ **What else than mathematics did you learn?**

Cooperation, team work, barely knew each other and now became friends, **learn to be patient and learn how to cooperate with others**, learn that when they want something they have to work for it.

➤ **What else than mathematics did you learn?**

How to present a really tricky idea. Make it more clear and make it interesting. Make people laugh. **Make people happy through mathematics.**

➤ **What else than mathematics did you learn?**

Presentation skills. Working as a group. How to work under pressure. Improve our English. Being filmed. Communication.

➤ **What else than mathematics did you learn?**

More confidence in ourselves through practicing for this play. We learned how to express better ourselves with body language for something we are learning in the class.

➤ **What else than mathematics did you learn?**

The fun part of it. How to present mathematics to people who are non mathematicians so they can understand it.

Evaluation results - the interviews

1. The invitation letter to the final competition had a clear structure and was easy to understand by both students and parents. Only a minority translated the letter in their national language, most of them used all information in English.
2. The invitation excited all participants. They all became nervous, because of having to present in front of such a big audience, but after the final presentation everybody felt good.
3. In addition students learned many daily life social skills like team work, to cooperate with others, presentation skills, collecting sponsor money for the flights, booking of a journey, disciplined behaviour etc.

7.10. Plan and timetable for the events: MATHeatre, MATHfactor.

All participants of LE-MATH competitions received a clear timetable. The competition was integrated in the EUROMATH Student Conference 2014 in Nicosia. It was included in the Programme of the conference and had some special activities during the conference,

such as a workshop of the LE-Math method for teachers. The MATHeatre and MATHFactor competition presentations were done on Saturday evening and Sunday morning. The presenters (students and teachers) got a schedule for the final interviews – all participated in time.

Le-MATH was mentioned as collaborator in the conference programme. In the welcome message of the conference Dr. Makrides, the chair of the conference and Le-MATH project coordinator mentioned the integration of Le-MATH in the conference, as part of the project proposal.

In the printed programme all Le-Math connected events became highlighted in dark light blue or yellow. This was the presentation of

“Workshop 6: Le-MATH Dr. Makrides and partners” Saturday 26.4.2014 12:00

Feedback from audience: Dr. Makrides presented the project to teachers. Students were not expected, but since they participated they were allowed to stay. It was not clear in the programme, that this is a workshop for teacher and not a workshop for students. The attendance was low but the purpose to see the difficulties in running a workshop in a short time were evident. This should be considered for future workshops.

“Le-MATH focus group” on Saturday 26.4.2014 12:40 done by Dr. Makrides and the partnership (see internal evaluation).

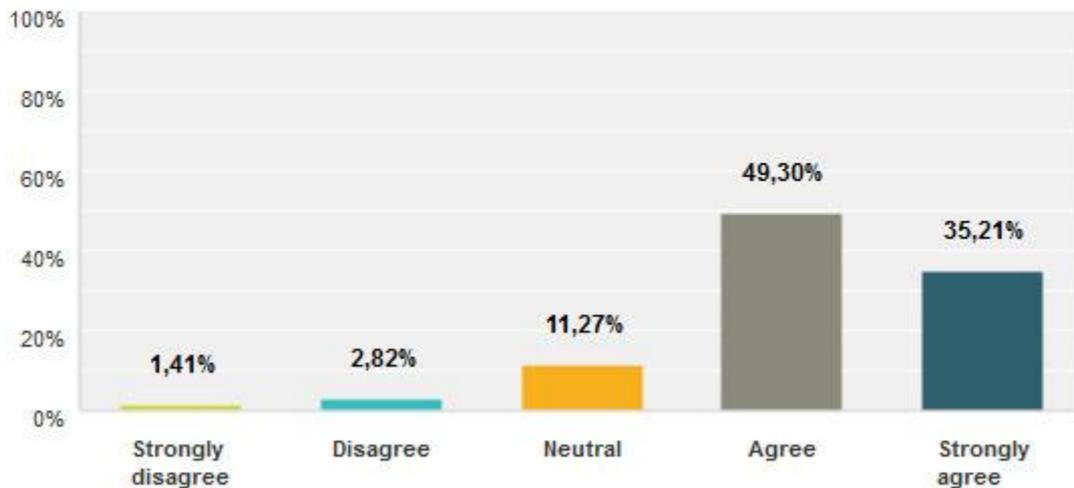
Feedback from audience: We interviewed some participating teacher – they feel well informed and consider becoming member of this focus group.

“Le-Math: Math factor Europe 2014 – Final competition, open to public” on Saturday 26.4.2014 17:15 (see internal evaluation)

Le-Math: MATHeatre Europe 2014 – Final competition, open to public” on Sunday 27.4.2014 9:30 (see internal evaluation)

After attending the Competition, you find mathematics more enjoyable

Beantwortet: 71 Übersprungen: 2



The project reached the aim. Math is more enjoyable for all!

This feedback shows that for some participants it was not clear to see the difference between EUROMATH and Le-MATH.

Some of the open question comments:

1. "The competition should include even more countries"
2. More awareness of the program should be made in other areas of the world like in Africa, Asia, America and Western Europe
3. Please choose more people from Africa
4. Come to Croatia
5. I want to see more people and I want to see a developed Euro-Math
6. Le Math should provide a bigger hall.
7. Jury members to be selected from different participating countries (at least from five countries)
8. More participants from other countries.
9. The Le-Math should have a building for the program - not a rented place!
10. Cyprus is developed but not enough. Also accommodation should be provided by the organizers.
11. More people should be invited from foreign countries. "

Evaluation results (interviews and feedback of audience)

1. To integrate Le-Math within the EUROMATH conference did save a lot of resources and made it possible to run the competition in a modest budget frame.
2. Not all participants were able to distinguish between EUROMATH and Le-MATH. We got in the feedback of audience questionnaire curious answers, only understandable under the assumption that not each attendant did check in which event she/he participated. This may be the reason that the Le-MATH participants were invited by the Le-MATH project in the competition event run within EUROMATH and were not invited

by the EUROMATH organizers.

7.11. Implementation

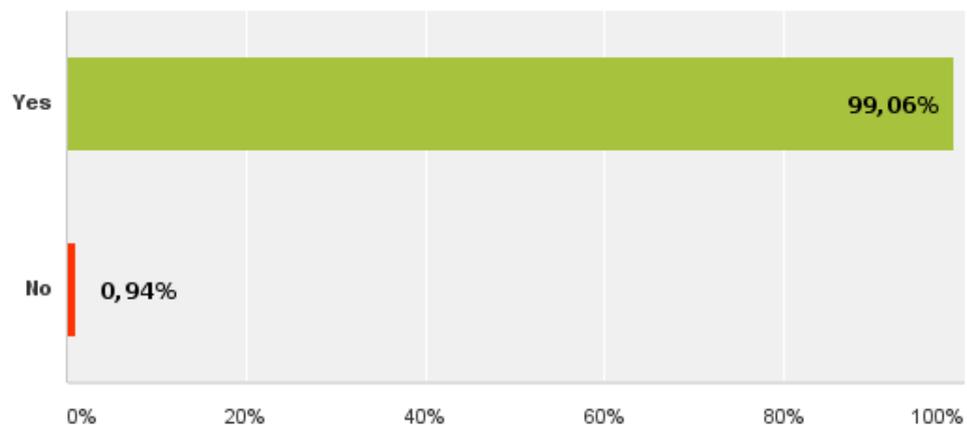
The Implementation worked perfectly. All participants made very good presentations. The organization was very good, the sequence without any delay. The competition was done after the EUROMATH conference presentations. A moderator led through the programme. The jury included no project partner who was involved with her/his institution in a presentation.

In the MATHFactor the moderator asked after each presentation all jury members for feedback. In the MATHeatre there was mainly only one Jury member giving her/his feedback.

Students like to take part in competitions.

Q12 I like to take part in competitions

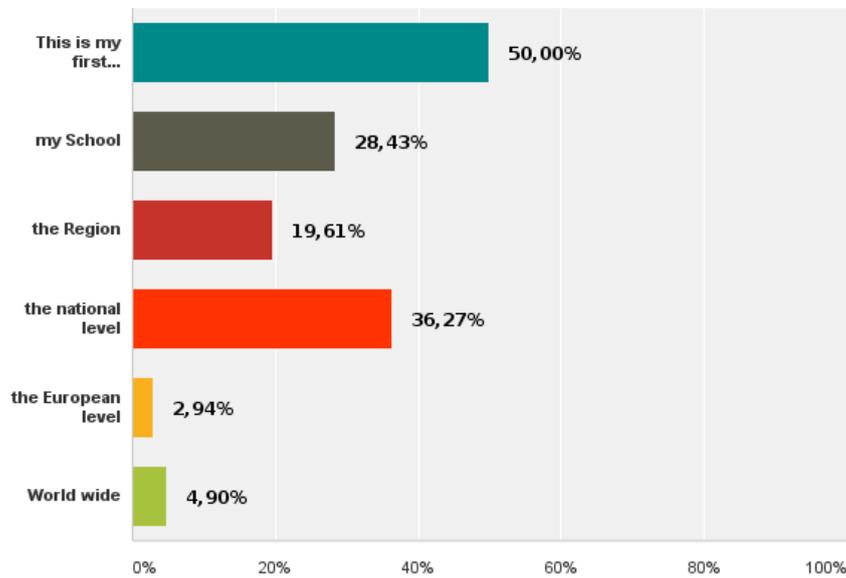
Beantwortet: 106 Übersprungen: 10



They take part in different competitions (we got feedback in the interview). They do sport, music, language, art, dance or theatre competitions.

Q14 On which level of competition I have previously participated in?

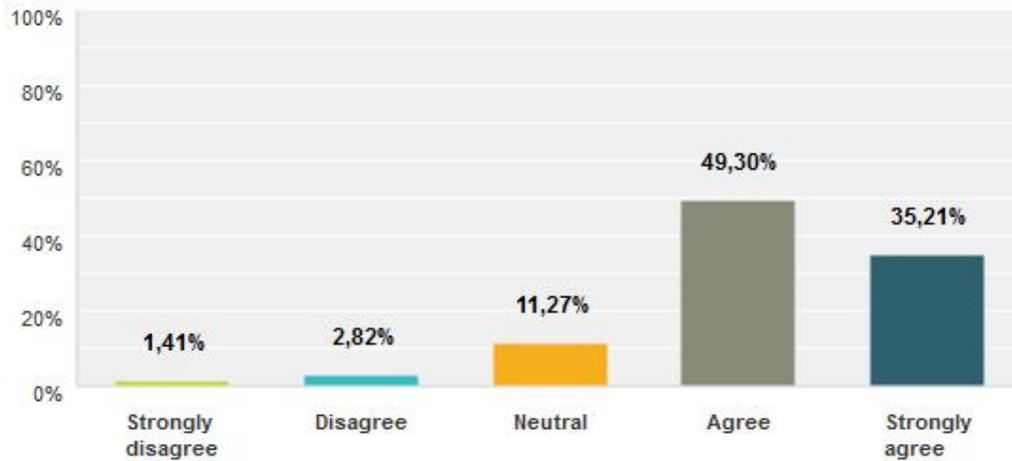
Beantwortet: 102 Übersprungen: 14



The additional gain of this project is that students get the possibility to take part in competitions. For 50% it was their first performance ever. Only 3% and 5% took part in European or international competitions.

After attending the Competition, you find mathematics more enjoyable

Beantwortet: 71 Übersprungen: 2



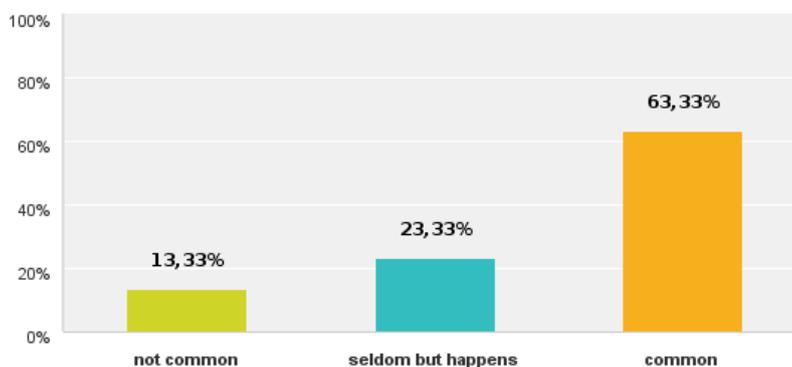
Antwortmöglichkeiten	Beantwortungen
Strongly disagree	1,41% 1
Disagree	2,82% 2
Neutral	11,27% 8
Agree	49,30% 35
Strongly agree	35,21% 25
Gesamt	71

The positive effect of Le-MATH can be observed in the questionnaire of the audience.

Teacher gives feedback, that competitions in European schools are quite common.

Q13 The use of various types of competitions my school is

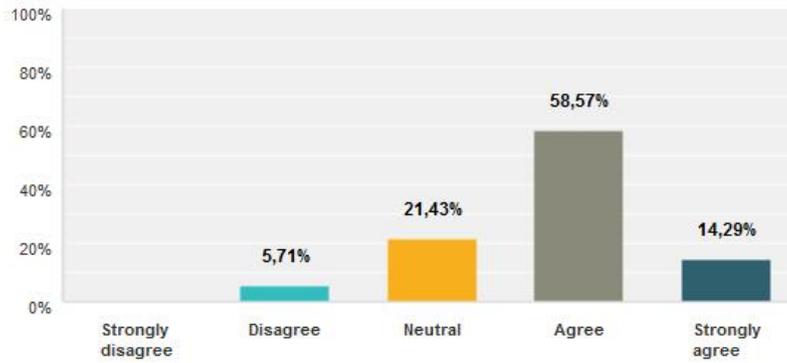
Beantwortet: 30 Übersprungen: 3



The aim to present mathematical problems in an easy and understandable way was succeeded. 85% of the audience members understood the content of the presentations.

You understood the topic and the content of most of the presentations.

Beantwortet: 70 Übersprungen: 3

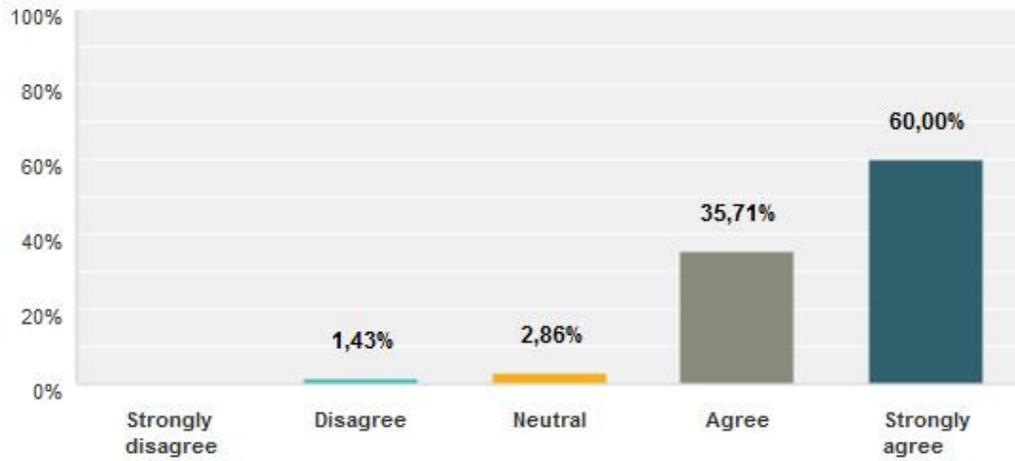


Antwortmöglichkeiten	Beantwortungen	
Strongly disagree	0,00%	0
Disagree	5,71%	4
Neutral	21,43%	15
Agree	58,57%	41
Strongly agree	14,29%	10
Gesamt		70

The audience members appreciate the EU-funding of this competition rather high!

You appreciate that the European Union is funding such activities.

Beantwortet: 70 Übersprungen: 3

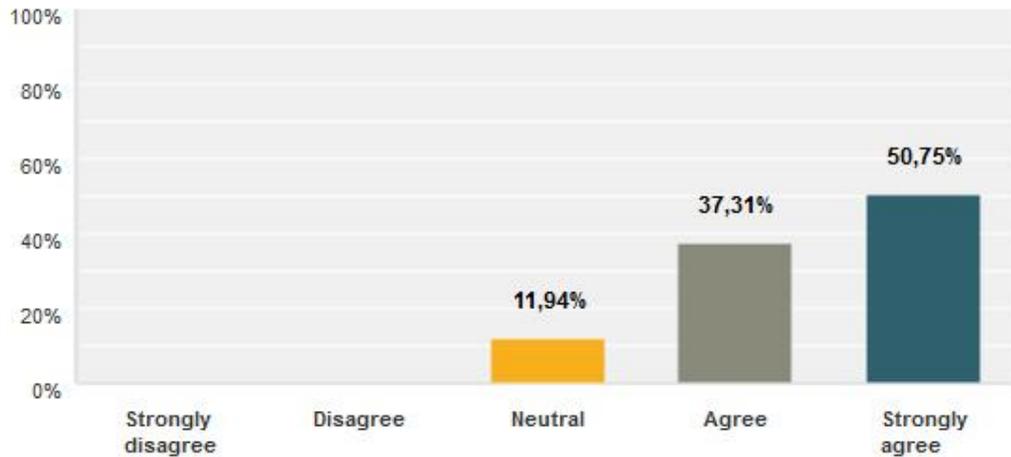


Antwortmöglichkeiten	Beantwortungen
Strongly disagree	0,00% 0
Disagree	1,43% 1
Neutral	2,86% 2
Agree	35,71% 25
Strongly agree	60,00% 42
Gesamt	70

The members of audience would recommend this event to others:

You will recommend the Le-Math Competition to other people.

Beantwortet: 67 Übersprungen: 6



Antwortmöglichkeiten	Beantwortungen
Strongly disagree	0,00% 0
Disagree	0,00% 0
Neutral	11,94% 8
Agree	37,31% 25
Strongly agree	50,75% 34
Gesamt	67

Evaluation (interviews and feedback of audience):

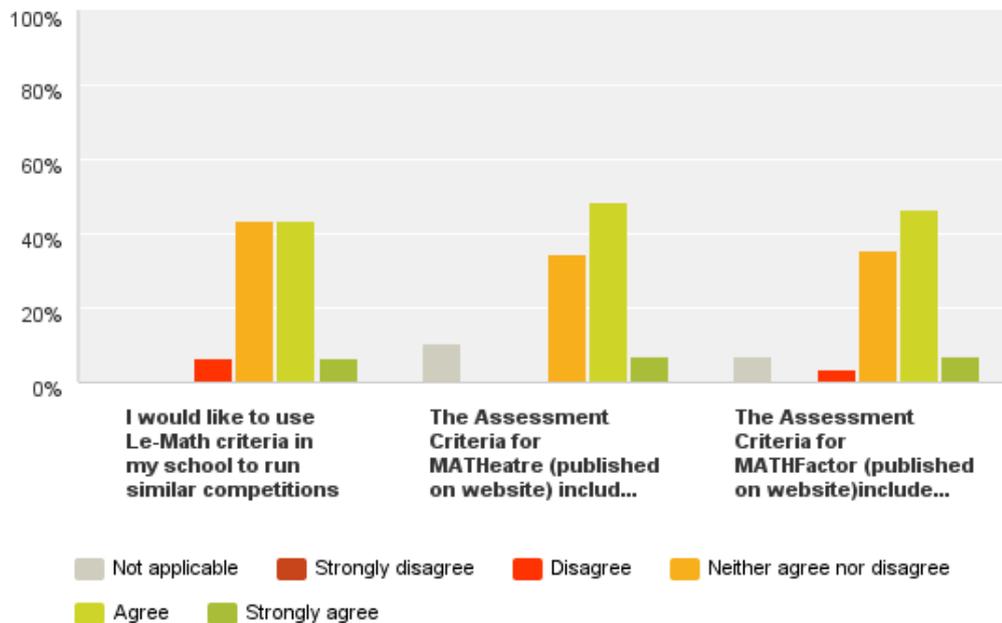
1. Students have the possibility to experience for the first time a multinational competition.
2. Students like to take part in different competitions.
3. In the feedback of the audience we received very positive feedback regarding the presentations (understandable) and the positive feedback for learning mathematics (more than 85%, after attending the maths competition found it more enjoyable!)
The EU-Funding was estimated more than 95% positive, 87% will recommend Le-Math competition to others!
4. As mentioned before, some visitors mixed Le-Math with EUROMATH. For some audience members it was not clear, that Le-Math presents a new methodology for mathematics – they expected brilliant mathematical solutions. This was not the aim. To show, how pupils can learn mathematics in a new and funny way (even for underachievers) was mainly the aim!
5. The members of the audience would recommend this event to others.

7.12. Awarding prizes to the winner

The winners received prizes as defined in the announcement of the competition. The project offers a Training course. The assessment tools and the criteria will be part of this course. Teachers like to use it to run similar competitions.

Q21 Assessment/evaluation tools

Beantwortet: 30 Übersprungen: 3



The prize was based on the selection by the jury.

Feedback in the interviews:

- **Do you find the prize for the winner attractive?**
Yes. *We are not doing it for the prize. We are already winners!*
- **Do you find the prize for the winner attractive?**
The prize is a motivation, but not the main reason to participate. Theodora would participate even without prize, just for the experience.
- **Do you find the prize for the winner attractive?**
- *Very attractive. The whole experience is attractive but **the prize stimulates me.***

Evaluation (interviews)

1. Teachers can use the assessment criteria of Le-MATH competition to run similar competitions.
2. The interviews show, that all finalists like the prizes. But some of the participating

students didn't even know anything about prizes. All of them reported that their motivation was not the prize; it was the possibility to have fun in mathematics in a different and unusual way.

3. The students realized that the possibility to take part in this final competition in Nicosia was the best prize for them. To become selected as finalists was perfect, but the chance to meet other students, to present their findings, to show what they acquired in a team was the most important part.

8. Evaluation of additional conditions from project manager:

8.1. The event and the pupil's participation (non-EU countries) are relevant to project aims/ objectives/workplan

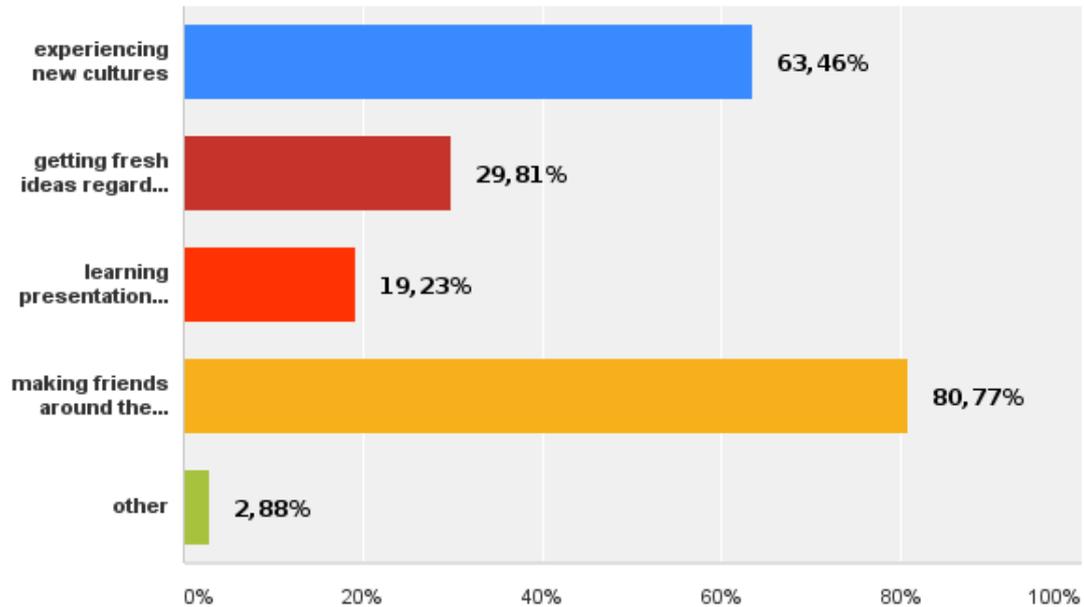
The rules and procedures for participating in the pilot testing procedure defined the rules of participation. It was clearly defined, that the consortium expected participants from outside of Europe, in order to gain new ideas regarding Le-Math methods.

Feedback of students:

The reason why students like to meet others is different to the teachers.

Q15 I like to meet colleagues from EU and non-EU countries because of

Beantwortet: 104 Übersprungen: 12



experiencing new cultures
getting fresh ideas regarding solving of math problems
learning presentation methods
making friends around the world

Under other we can find:

Possible future collaborations 12.02.2014 15:05

I'd like to hear from other people how the education in other countries is, as I'm thinking about studying abroad for a year or so.

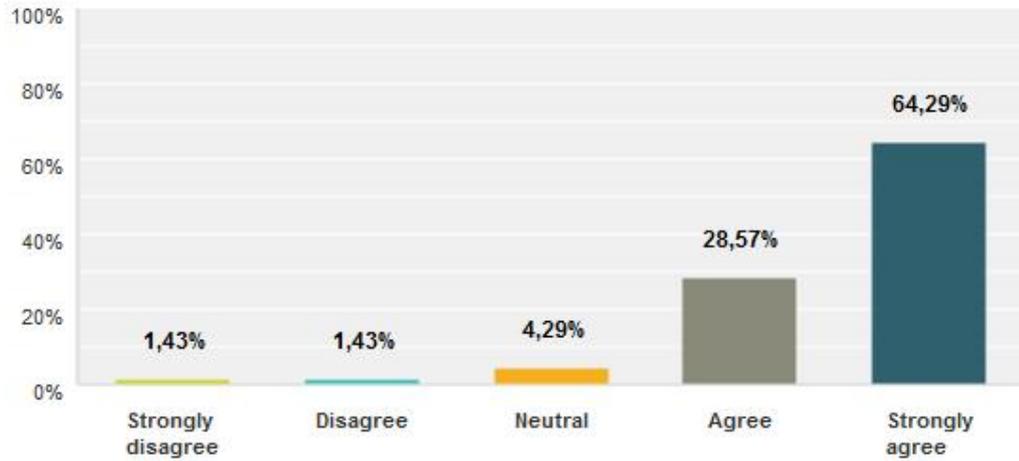
12.02.2014 12:02

Main advantage for students was to meet other cultures and to make friends.

Feedback of audience:

It was important to invite non-EU participants to get different ideas.

Beantwortet: 70 Übersprungen: 3



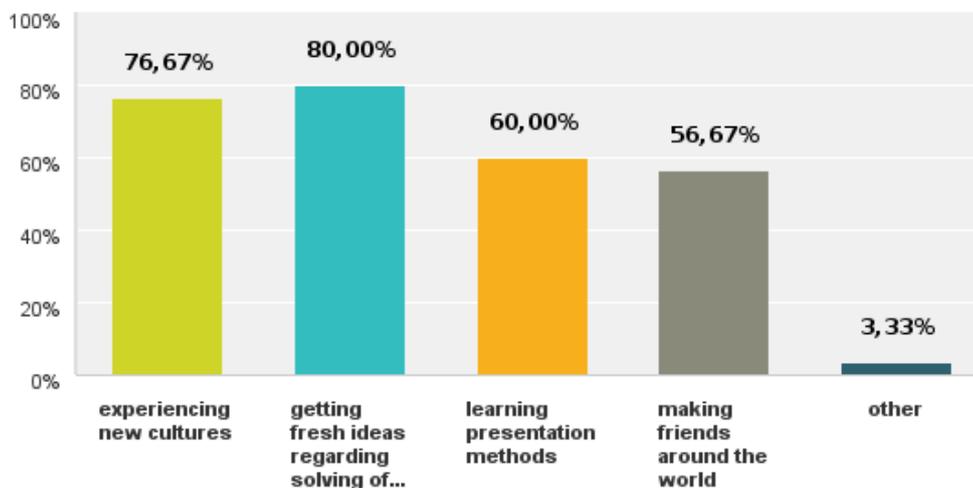
Antwortmöglichkeiten	Beantwortungen	
Strongly disagree	1,43%	1
Disagree	1,43%	1
Neutral	4,29%	3
Agree	28,57%	20
Strongly agree	64,29%	45
Gesamt		70

The majority of the audience (participating LE-MATH competition) agree with the idea to invite non-EU participants.

Feedback of teachers:

Q15 I like to meet colleagues from EU and non-EU countries because of

Beantwortet: 30 Übersprungen: 3



We can see that teachers like to get fresh and new ideas; that they like to meet people with different cultures and that they like to make friends around the world. These aims were achieved.

In the interviews we received this feedback:

- **We have invited students from non-European countries. What do you think?**
It is fair, all students have the right to participate, and it is better to listen to ideas from all over the world.
- **We have invited students from non-European countries. What do you think?**
It is better that is not restricted only to Europeans as it is interesting in see how other people think.
- **We have invited students from non-European countries. What do you think about this?**
- I think it is great. We can learn from each other, it unites people. Bring teenagers together from many other countries.
- **We have invited students from non-European countries. What do you think about this?**
T-It's great. An opportunity to see what they do in Maths in other countries. We know the European countries, so it is great to learn more about other countries. To learn from them.
S- I agree completely. We only benefit from it.
- **We have invited students from non-European countries. What do you think about this?**
T- very good idea. Gives the students opportunity to leave behind some things they are afraid of. Communicate with others. No advantage, no disadvantage. Why not? S- Different cultures. We get to socialize with other cultures. Complete gaps. We don't care if they are European or non-European, we just want a lot of students from other places.

Evaluation result (interviews, questionnaires):

The feedback was positive. Students and teachers liked the idea, to invite non-EU countries, because of these reasons:

Teachers reflect, that after taking part to a lot of European projects they know the thinking and acting of European teachers. They are cross-linked together and exchange more or less ideas in new methods and didactics. They received Le-MATH project new and fresh ideas from non-Europeans!

The **students** wanted to meet fellow students from non-EU countries to know about their problems, ideas, situation etc. For them it was a part of a peace project (especially to meet handicapped, colleagues from Africa and Asia, Muslims ...). They now became friends with pupils they would have never had the chance to meet in an EU-competition before!

8.2. The participation of non-EU pupils bring added value to the project and the pupils take active part in the event

The invitation of “Al-Hadi Institution for deaf, blind and learning disabilities” was a milestone in the project. We assumed in the project that underachievers would get more interest in maths and world rise understanding and radiate joy in maths.

Feedback in the interviews:

- ***We have invited students from non-European countries. What do you think?***
Every project that has people with different cultures, ways of life, backgrounds is very exciting. Everybody is learning something new when interacting with other. Learn new ideas. It is important to include children with special needs.
- ***We have invited students from non-European countries. What do you think?***
A beautiful advantage for transversal communication. Interesting to find out how schools with different technological advantages work, see different methods that are not the same that we use in our system. See with more eyes means that we can see globally in 360°. They are very curious on how to communicate maths without been able to speak.

Evaluation result (interviews, questionnaires)

1. There was no European school dealing with underachievers in the project. All of them wanted to win and selected mostly their best students.

An additional problem was (especially for European students) the language – English, because underachievers have sometimes many difficulties other than the mathematical problems. It was an advantage for International schools (most of them have got a more or less private character) but not for regular schools with regular English lessons.

2. “Al-Hadi” showed that it is possible to teach mathematical topics understandable by using MATHeatre to handicapped pupils. They demonstrated very impressively, that mathematics

can be fun for everybody!

3. In the future we can expect that more schools with pupils with learning difficulties will take part in the Le-Math competitions.

Czech Republic with the presentation “Prime Kingdome” did here the first step in Europe: the theatre was prepared with all children in the class (it was in a half-class in the lesson that class is split into two parts for some lessons. This shows that it is not necessary to do it only with best students.

8.3. The participants subsequently wrote a report on the events/workshops/meeting which will be made available to all project partners (and submitted to the Agency at Progress/Final report stage)

We got written feedback in the interviews, the pre-evaluation (students and teachers) and the questionnaires of the audience regarding the non-EU participants.

Evaluation result (interviews, questionnaires):

This is part of this Evaluation, all results are added in the Annex. Each Partner gets it before the final meeting. The reports are in the archive of the project.

8. Additional suggestions of project leader and partnership

The partnership discussed the evaluation in meeting 3 and 4. Finally they wanted feedback especially in some questions. These were answered in a more general analysis. We had to make it more convenient for the consortium.

9.1. Feedback for the methodology as shown in the guidelines

The methodology was published in the guidelines in the beginning of the project. It was a complex file and included a lot of very interesting and detailed information.

To reflect on the quality of this methodology is not part of this competition-evaluation. It is done by the internal evaluation.

The evaluation report shows the details in different graphs and quotations.

Here is the summary of all findings:

Evaluation result (interviews, questionnaires)

1. The most important problem was the scope of the file. Mathematics teachers are often not fluent enough in English to read such a big file.

We need to write synopsis in a short and easy English, that teachers from the whole Europe (not only the partner-countries, because the guidebooks became translated at the end of the project-live) will be able to read and understand! What we mean is that only the translation in the languages of the partner countries cannot solve this problem.

2. We need a clear wording. If we speak from Methodology it should be in the index of the

guidelines/guidebooks. This was another problem for teachers. Clear wording helps to understand.

3. In the pre-evaluation we did not get too positive feedback for Methodology. The interviews showed that a big number of participants started to work on their project before the guidelines with methodology became published. They didn't read it afterwards too, so their feedback was not positive. This problem is solved because for future, the guidelines are published.

4. Some teachers ask for a web link of the Methodology in the application form. It could be done in the next application form like: "I confirm that I have read the Guidebook in web-site (and now the link)"

9.2 Feedback for the use of Manual of Scripts for improving their MATHeatre play

The project decided to develop a manual of scripts for improving the MATHeatre. This Manual became published and was available in digital and printed version. All participants (teacher and students) got it at the competition.

A theatre Play writing competition on the theme of Mathematics was done in October 2013. Teachers who took part in this competition did know the manual.

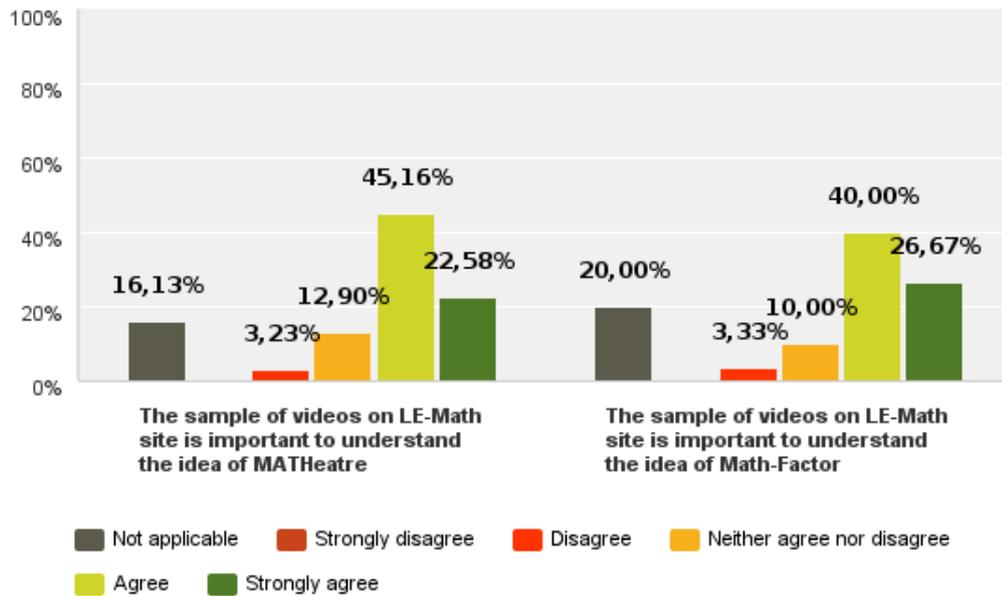
Evaluation result (interviews, questionnaires)

1. The majority answered, that they have seen the manual of scripts for the first time in the conference. They did not know that it existed – we have not sent the paper form to the attendee because it's not foreseen in the proposal and it's more or less a tool for the Le-Math courses. The teachers who had the possibility to read it left a positive feedback.

2. An analysis including detail information like Mathematical Area, Methodology & Analysis, Keywords, Age group – is done by the consortium and is published in the web-version too. Some teachers give feedback that they do not read manuals in general, it is because they do not like to get an influence in their own creativity. After finishing the submission some read the manual - others not.

Q7 Video play samples on website

Beantwortet: 31 Übersprungen: 2



9.3. Feedback for the use of the published video samples for improving their MATHFactor presentation

Video samples for MATHFactor are published on the project website.

Evaluation result (interviews, questionnaires):

1. In general we got the same answer from teachers like above. Some didn't show the examples to their students at the beginning and presented it in the final stage of preparation. Others didn't show it at all.
2. Students watched the videos because they wanted to improve their presentation/play and to avoid errors.
3. Teachers and students who have seen the videos answered positively and accepted that it was a good tool for them.

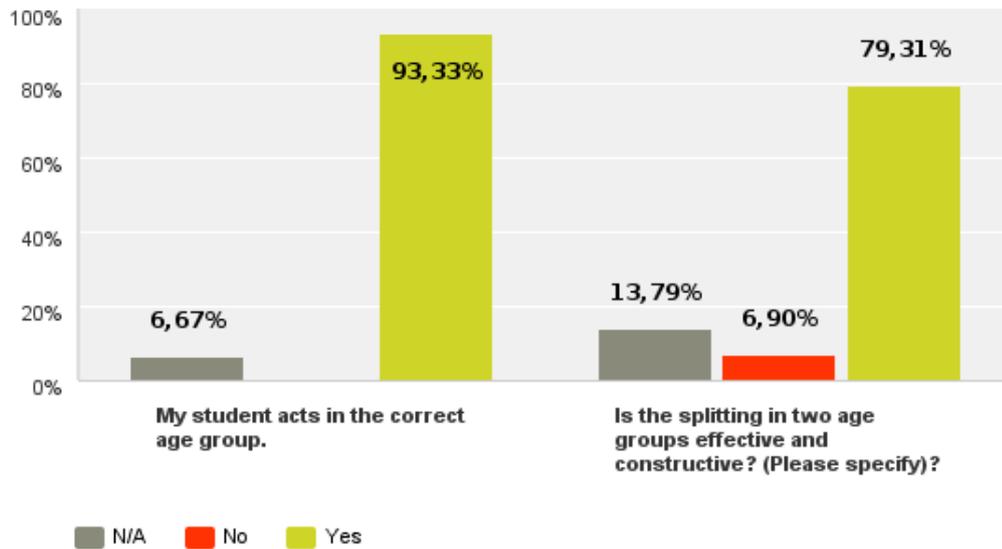
Feedback on whether the approach suggested was appropriate for the age group.

The consortium decided to use two age groups in the competition (9-13 and 14-18). This decision was part of the evaluation and the interviews.

Feedback of teachers:

Q6 Age groups

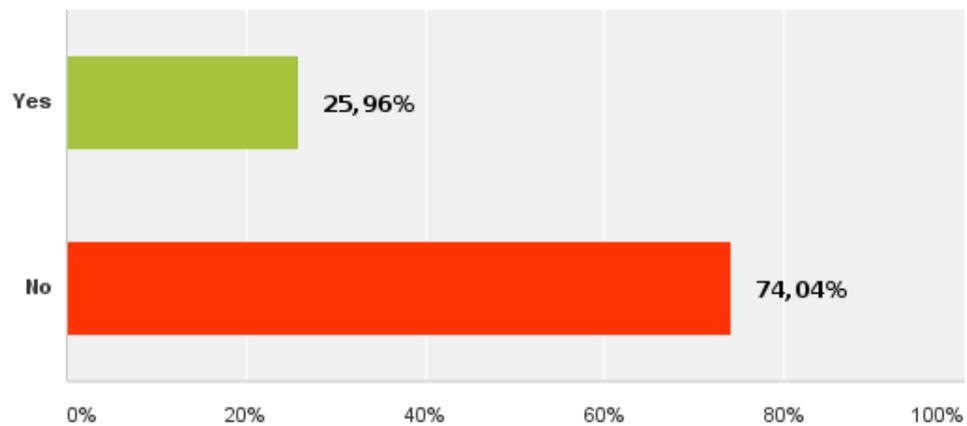
Beantwortet: 30 Übersprungen: 3



Feedback of students:

Q16 I would feel more comfortable in a different age group?

Beantwortet: 104 Übersprungen: 12



Feedback in the interviews:

- **What do you think about dividing participants in 2 age-groups?**
*A bit strict when you are at the age border.
 It could be same level of classes.
 Maybe it would be better to have 3 age groups (9-13/ 14-16 / 17-18).*
- **What do you think about dividing participants in 2 age-groups?**

They find the division **good** because last year Theodora participated in a competition with no division among different age groups and this was difficult.

However, it would be better to have **3 categories**:

Elementary school group

Secondary school group

Upper secondary school group

➤ **What do you think about dividing participants in 2 age-groups?**

It is **very fair**. However, it would be better to have as many age groups categories as possible.

It is unfair for a 14 years old to compete with a 18 years old.

➤ **What do you think about dividing participants in 2 age-groups?**

It is **less fair** for the younger students. The younger do not know all the things that the older students know on maths, and also their language skills in English are not the same as the older students. **They would like to have 3 age groups (elementary, secondary, upper secondary).**

➤ **What do you think about dividing participants in 2 age-groups?**

S- very good, the older groups have different themes (context)

T- the age groups are ok as they are, the higher group is high school in Croatia so **it works for us**

➤ **What do you think about dividing participants in 2 age-groups?**

It's good. **Maybe better to divide in level of Maths being taught, it is not really the age but the level of mathematics which is the problem.**

Evaluation result (interviews, questionnaires):

1. Depending on the school system in the countries of the participants this decision was perfect for them or they dislike it if the system does not fit to their individual school type. Especially, for the students that were on the border of the age groups (13-14) it was difficult. Most of the finalists preferred to have 2 age groups rather than one.

2. Nearly half of the students asked for a change in three age groups:

Age group one from 9-13, Age group two from 14-16 and three from 17-18. But in parallel they expressed that maybe the third age group will not get enough participants, because of the final exams in school.

3. A small minority asked for theme-centred groups. This is at the end hard to realize. The consortium has to decide, what they like.

In general, the splitting in two age groups was accepted by the finalists.

10. Used Methodology

Purpose:

The overall purpose of this evaluation was to investigate the participants views and expectations in the project (competition stage 1 and 2), concerning the information and the help, received before the conference (in stage 1), the information they got out of the website of Le-Math, the competition and finally the success of these new methods.

Methodology:

The participant's views were expressed with five different questionnaires, by using mainly survey monkey (internet questionnaire):

1. Pre evaluation teachers: 34 answered the questionnaire. We have sent a pre-evaluation questionnaire to all participants and got feedback from 34 teachers.

21 questions

We got 31 submissions for MATHeatre (14 for age 9-13 and 17 for age 14-18)

27 submissions for MATHFactor (3 for age 9-13 and 24 for age 14-18)

We got feedback FROM THESE SCHOOLS.

- 1 Petko Rachov Slaveikov Secondary School 16.03.2014 10:49
- 2 Petko Rachov Slaveikov, Kardzhali, Bulgari 10.03.2014 21:07
- 3 Nikolaideio Paphos 07.03.2014 17:11
- 4 Emporiki Scholi Mitsi Lemithou 01.03.2014 17:18
- 5 Lycée Rabelais - Saint-Brieuc 27.02.2014 16:38
- 6 gymnasium Xylotymbou 26.02.2014 21:52
- 7 likeio livadion 26.02.2014 21:24
- 8 The Heritage Private School 25.02.2014 13:49
- 9 Collège Saint Charles 25.02.2014 13:11
- 10 The G C School of Careers 25.02.2014 10:59
- 11 collège Saint Charles 25.02.2014 10:54
- 12 Emporiki Scholi Mitsi Lemithou 25.02.2014 07:41
- 13 Källängens skola 24.02.2014 11:50
- 14 Istituto Comprensivo Maniago 17.02.2014 06:24
- 15 Zanzan Shadid Beheshti Highschool 15.02.2014 20:36
- 16 SimpleX Association 14.02.2014 09:59
- 17 Sofia Math School 13.02.2014 16:04
- 18 HAMELIN INTERNACIONAL LAIE 13.02.2014 14:37
- 19 Gimnazija Bežigrad, Ljubljana 13.02.2014 11:10
- 20 Gimnazija Bežigrad 13.02.2014 11:10
- 21 Hamelin Internacional Laie 13.02.2014 10:58
- 22 SimpleX Association and Sapientia Hungarian University 13.02.2014 05:56
- 23 Colegiul National "Coriolan Brediceanu" Lugoj, Romania 12.02.2014 22:08
- 24 "Isidora Sekulic" 12.02.2014 21:52
- 25 Colegiul National "Coriolan Brediceanu" Lugoj, Romania 12.02.2014 17:10
- 26 ZS Fr. Plaminkove, Praha 7 12.02.2014 16:26
- 27 Anita Conti 12.02.2014 14:58
- 28 Fr. Plamínkové 2, Praha 7 12.02.2014 14:23
- 29 Nagy István Art School and SimpleX Association 12.02.2014 14:14
- 30 Gimnazija "Fran Galović" Koprivnica 12.02.2014 12:07
- 31 Gimnazija "Fran Galović" 12.02.2014 11:35
- 32 MATH SCHOOL, BURGAS, BULGARIA 07.02.2014 08:17
- 33 HELLENIC FRENCH SCHOOL KALAMARI 06.02.2014 21:37

These presentations/plays are recorded in the evaluation:

- 1 The Mantle of Time 16.03.2014 10:49
- 2 The mantle of time 10.03.2014 21:07
- 3 The area of the circle 07.03.2014 17:11
- 4 Who killed Mr X 01.03.2014 17:18
- 5 A journey to a strange ocean - A tough journey - The glass that is never filled - Quadrilaterals 27.02.2014 16:38
- 6 similar triangles 26.02.2014 21:52
- 7 The Magic Of Mathematics 26.02.2014 21:24
- 8 Monty Hall Paradox 25.02.2014 13:49
- 9 Mathochampion Show 25.02.2014 13:11
- 10 The Doors 25.02.2014 10:59
- 11 Falling Bodies 25.02.2014 10:54
- 12 Who killed Mr X 25.02.2014 07:41
- 13 Students will present 1.Rubiks cub 2.Monty Hall-problem 3.Maths and music 24.02.2014 11:50
- 14 Just for one euro 17.02.2014 06:24
- 15 The trigonometric circle and it's functions 15.02.2014 20:36
- 16 Simple(X) Solfege 14.02.2014 09:59
- 17 Total disorder (Ribbons) 13.02.2014 16:04
- 18 PRIMENUMBERS ULAM SPIRAL 13.02.2014 14:37
- 19 INFINITE CHOCOLATE 13.02.2014 11:10
- 20 Saving Private Goldbach 13.02.2014 11:10
- 21 Mathematics and Gaudi 13.02.2014 10:58
- 22 Simple(X) Cappuccino 13.02.2014 05:56
- 23 Shapes 12.02.2014 22:08
- 24 Matheatre - "Space and Time, Somewhere in Between" / Mathfactor - "Sweet Mathematics" 12.02.2014 21:52
- 25 The Legend of Number 10 12.02.2014 17:10
- 26 Prime Kingdom 12.02.2014 16:26
- 27 The Riddle 12.02.2014 14:58
- 28 Banknotes 12.02.2014 14:23
- 29 Simple(X) Cappuccino 12.02.2014 14:14
- 30 Diffie-Hellman Key Exchange 12.02.2014 12:07
- 31 Diffie-Hellman Key Exchange 12.02.2014 11:35
- 32 FRACTALS AND DRAGONS 07.02.2014 08:17
- 33 GLOBAL POSITIONING SYSTEM,DIOFANTOS,THE ALGORITHM OF GOD 06.02.2014 21:37

2.Pre evaluation students: 134 sent an answer throughout our survey tool.

20 questions

Students out from these schools took part in the pre-evaluation:

- 1 Emporiki Scholi Mitsi Lemithou 19.03.2014 22:58
- 2 Gimnazija Bežigrad 19.03.2014 18:55
- 3 collège Saint Charles 17.03.2014 10:26
- 4 Petko Rachov Slaveikov Secondary School 16.03.2014 11:09
- 5 Léonard de Vinci 10.03.2014 14:29
- 6 Kallangen, Lidingo Sweden 08.03.2014 18:04
- 7 Léonard de Vinci 08.03.2014 12:58
- 8 GC School of Careers 05.03.2014 21:54
- 9 The G C School of Careers 05.03.2014 14:42
- 10 st charles 04.03.2014 15:23
- 11 Léonard de Vinci 04.03.2014 15:16
- 12 Breton 03.03.2014 18:16

13 GCS 03.03.2014 16:46
14 Collège Beaufeuillage 03.03.2014 13:11
15 Källängen 03.03.2014 10:06
16 Collège Beaufeuillage 03.03.2014 08:54
17 Lycée Rabelais 02.03.2014 22:43
18 Léonard de Vinci 02.03.2014 09:08
19 collège léonard de vinci 01.03.2014 18:45
20 Lycée Rabelais 01.03.2014 11:25
21 Lycée Rabelais 01.03.2014 09:57
22 St Charles 28.02.2014 17:15
23 Petko Rachov Slaveikov Secondary School 27.02.2014 16:12
24 "Petko Rachov Slaveikov" Secondary School 26.02.2014 22:56
25 Gymnasium Xylotymbou 26.02.2014 22:13
26 likeio livadion 26.02.2014 21:16
27 st Charles 26.02.2014 17:00
28 Collège Saint Charles 26.02.2014 15:20
29 saint charles 26.02.2014 14:01
30 st charles 26.02.2014 08:21
31 The GC School of Careers 25.02.2014 22:31
32 Collège Saint Charles 25.02.2014 22:15
33 College St Charles, guipavas 25.02.2014 21:51
34 college saint charles guipavas 25.02.2014 21:32
35 Saint charles 25.02.2014 21:01
36 St Charles 25.02.2014 20:53
37 collège saint Charles 25.02.2014 20:37
38 St Charles Guipavas 25.02.2014 20:31
39 College saint charles 25.02.2014 20:28
40 Collège Saint-Charles 29490 GUIPAVAS, FRANCE 25.02.2014 19:53
41 Collège St Charles 25.02.2014 18:47
42 College Saint-Charles GUIPAVAS 25.02.2014 18:28
43 St charles 25.02.2014 18:05
44 Collège Saint Charles Guipavas 25.02.2014 18:02
45 college saint charles 25.02.2014 16:48
46 Heritage Private School 25.02.2014 13:38
47 College Saint Charles 25.02.2014 12:18
48 college saint charle 25.02.2014 10:58
49 collège saint charle 25.02.2014 10:58
50 Collège Saint CharlesGuipavas 25.02.2014 10:34
51 Emporiki scholi Mitsi Lemithou 25.02.2014 07:56
52 Petko Rachov Slaveikov Secondary School 23.02.2014 23:18
53 Petko Rachov Slaveikov Secondary School 23.02.2014 23:15
54 Grammar school Isidora Sekulic 16.02.2014 15:13
55 "Isidora Sekulic" grammar school 16.02.2014 10:56
56 Sofia Math School 15.02.2014 20:41
57 Sofia Math School 15.02.2014 18:25
58 C.N.C Brediceanu 15.02.2014 18:19
59 Sofia Math School 15.02.2014 15:48
60 The Heritage Private School 14.02.2014 22:13
61 gimnazija isidora sekulic 14.02.2014 21:27
62 Nagy Imre School and SimpleX Association 14.02.2014 21:20
63 "Isidora Sekulic" Grammar School 14.02.2014 21:19
64 Nagy Imre School and SimpleX Association 14.02.2014 21:12
65 Nagy Imre School and SimpleX Association 14.02.2014 21:08
66 Nagy István Art School and SimpleX Association 14.02.2014 21:05

67 Nagy István Art School and SimpleX Association 14.02.2014 21:03
 68 Nagy István Art School and SimpleX Association 14.02.2014 20:50
 69 Endes József School and SimpleX Association 14.02.2014 20:44
 70 "Isidora Sekulic" Grammar School 14.02.2014 20:42
 71 Sofia Math School 14.02.2014 20:28
 72 'Isidora Sekulic' Grammar school 14.02.2014 19:58
 73 Sofia Math School 14.02.2014 17:34
 74 Nagy István Art School and SimpleX Association 14.02.2014 17:07
 75 Nagy Imre School and SimpleX Association 14.02.2014 16:49
 76 Márton Áron High School and SimpleX Association 14.02.2014 16:05
 77 Petőfi Sándor School and SimpleX Association 14.02.2014 15:24
 78 Sofia Math School 13.02.2014 21:55
 79 C N C Brediceanu 13.02.2014 20:18
 80 "Isidora Sekulic" Grammar School 13.02.2014 19:37
 81 college Anita Conti Lorient France 13.02.2014 19:03
 82 Gimnazija Bežigrad 13.02.2014 18:57
 83 Gimnazija Bežigrad 13.02.2014 17:04
 84 Gimnazija Bežigrad 13.02.2014 15:43
 85 Hamelin Internacional Laie 13.02.2014 14:34
 86 Echange 13.02.2014 13:39
 87 Moraitis School, Greece 13.02.2014 12:27
 88 anita conti lorient france 13.02.2014 10:55
 89 Cvitanič 12.02.2014 23:37
 90 Gimnazija Bežigrad 12.02.2014 21:48
 91 ,v,v 12.02.2014 21:36
 92 Colegiul National Coriolan Brediceanu Lugoj 12.02.2014 21:01
 93 Hamelin Internacional Laie 12.02.2014 20:13
 94 C.N.,C.Brediceanu" 12.02.2014 20:09
 95 Moraitis School 12.02.2014 20:00
 96 Moraitis School 12.02.2014 19:54
 97 Moraitis School 12.02.2014 19:44
 98 MORAITIS SCHOOL 12.02.2014 19:39
 99 Moraitis School 12.02.2014 19:34
 100 Colegiul National Coriolan Brediceanu Lugoj 12.02.2014 19:30
 101 C.N.'C.BREDICEANU 12.02.2014 19:21
 102 ZS Fr. PLaminkove, Praha 7 12.02.2014 18:32
 103 C.N.C Brediceanu 12.02.2014 18:11
 104 C.N "C. Brediceanu" 12.02.2014 18:10
 105 C.N. "C. Brediceanu" 12.02.2014 17:59
 106 aaa 12.02.2014 17:36
 107 Gimnazija Bežigrad, Gimnazija 12.02.2014 16:27
 108 Moraitis School, Athens, Greece 12.02.2014 15:01
 109 ZS Fr. Plaminkove, Praha & 12.02.2014 14:29
 110 Zanjan Shahid Beheshti Highschool 12.02.2014 12:26
 111 sssss 12.02.2014 12:11
 112 Gimnazija "Fran Galović" Koprivnica 12.02.2014 11:38
 113 Kalamari 06.02.2014 12:26
 114 Hellenic French School Kalamari 06.02.2014 12:15
 115 HELLENIC FRENCH SCHOOL KALAMARI 05.02.2014 20:23
 116 HIGH SCHOOL OF MATHEMATICS AND NATURAL SCIENCES "Acad. Nikola Obreshkov"
 05.02.2014 20:11

2 Saving private Goldbach 19.03.2014 18:55

3 Falling bodies 17.03.2014 10:26
 4 The mantle of time 16.03.2014 11:09
 5 Mathematical ocean 10.03.2014 14:29
 6 Poster: Graham's number 08.03.2014 18:04
 7 A journey to a strange ocean 08.03.2014 12:58
 8 The Doors 05.03.2014 21:54
 9 The Doors 05.03.2014 14:42
 10 the best european mathematician 04.03.2014 15:23
 11 A journey to the ocean of partial differential equations and Quadrilaterals 04.03.2014 15:16
 12 Mathochampion show 03.03.2014 18:16
 13 The doors 03.03.2014 16:46
 14 The glass that is never filled 03.03.2014 13:11
 15 No presentation 03.03.2014 10:06
 16 The glass that is never filled 03.03.2014 08:54
 17 A tough journey 02.03.2014 22:43
 18 A journey to a strange ocean - Quadrilaterals 02.03.2014 09:08
 19 maths ocean 01.03.2014 18:45
 20 A tough journey 01.03.2014 11:25
 21 A tough journey 01.03.2014 09:57
 22 The Best European Mathematician 28.02.2014 17:15
 23 Napoleon's triangles and Torricelli point (Presentation) 27.02.2014 16:12
 24 Symmedians in triangle (Presentation) 26.02.2014 22:56
 25 similar triangles 26.02.2014 22:13
 26 The magic of mathematics 26.02.2014 21:16
 27 sean PI 26.02.2014 17:00
 28 Falling Bodies 26.02.2014 15:20
 29 Stuck in a video game 26.02.2014 14:01
 30 the best european 26.02.2014 08:21
 31 THE DOORS 25.02.2014 22:31
 32 Toch 25.02.2014 22:15
 33 Toch 25.02.2014 21:51
 34 game winner 25.02.2014 21:32
 35 Toch 25.02.2014 21:01
 36 Toch 25.02.2014 20:53
 37 game winner 25.02.2014 20:37
 38 Number War 25.02.2014 20:31
 39 Falling Bodies 25.02.2014 20:28
 40 Falling Bodies 25.02.2014 19:53
 41 The best european mathematician 25.02.2014 18:47
 42 The Best European Mathematician Show 25.02.2014 18:28
 43 Sean Pi's interview 25.02.2014 18:05
 44 Falling Bodies 25.02.2014 18:02
 45 Mathochampion Show 25.02.2014 16:48
 46 Monty Hall Paradox 25.02.2014 13:38
 47 Mathochampion Show 25.02.2014 12:18
 48 Mathochampion show 25.02.2014 10:58
 49 Mathochampion show 25.02.2014 10:58
 50 Falling bodies 25.02.2014 10:34
 51 who killed Mr X 25.02.2014 07:56
 52 Generating Functions - Making Bubbles out of Plain Water (MATHFactor presentation)
 23.02.2014 23:18
 53 The Mantle of Time (Theatre play) 23.02.2014 23:15
 54 Space & time, somewhere in between 16.02.2014 15:13
 55 Space and time somewhere in between 16.02.2014 10:56

56 Total disorder (Ribbons) 15.02.2014 20:41
57 Total disorder (Ribbons) 15.02.2014 18:25
58 The legend of the Number 10 15.02.2014 18:19
59 Total disorder (Ribbons) 15.02.2014 15:48
60 Pigeonhole Principle 14.02.2014 22:13
61 space and time, somewhere in between 14.02.2014 21:27
62 Simple(X) Cappuccino 14.02.2014 21:20
63 Space & time, somewhere in between 14.02.2014 21:19
64 Simple(X) Cappuccino 14.02.2014 21:12
65 Simple(X) Cappuccino 14.02.2014 21:08
66 Simple(X) Cappuccino 14.02.2014 21:05
67 Simple(X) Cappuccino 14.02.2014 21:03
68 Simple(X) Cappuccino 14.02.2014 20:50
69 Simple(X) Cappuccino 14.02.2014 20:44
70 Space & time, somewhere in between/Sweet mathematics 14.02.2014 20:42
71 Total disorder (Ribbons) 14.02.2014 20:28
72 Space and time, somewhere in between 14.02.2014 19:58
73 Total disorder (Ribbons) 14.02.2014 17:34
74 Simple(X) Cappuccino 14.02.2014 17:07
75 Simple(X) Cappuccino 14.02.2014 16:49
76 Simple(X) Solfege 14.02.2014 16:05
77 Simple(X) Cappuccino 14.02.2014 15:24
78 Total disorder (Ribbons) 13.02.2014 21:55
79 The Legend of Number 10 13.02.2014 20:18
80 Space and Time, somewhere in between 13.02.2014 19:37
81 The Riddle 13.02.2014 19:03
82 Saving Private Goldbach 13.02.2014 18:57
83 Infinite Chocolate 13.02.2014 17:04
84 Saving Private Goldbach 13.02.2014 15:43
85 prime numbers ulams spiral 13.02.2014 14:34
86 The mathematician 13.02.2014 13:39
87 Five pirates and 100 gold coins 13.02.2014 12:27
88 The Riddle 13.02.2014 10:55
89 Saving Private Goldbach 12.02.2014 23:37
90 Saving Private Goldbach 12.02.2014 21:48
91 vmm, 12.02.2014 21:36
92 Shapes 12.02.2014 21:01
93 Mathematics and Gaudi 12.02.2014 20:13
94 The Legend of Number 10 12.02.2014 20:09
95 Five pirates and 100 gold coins 12.02.2014 20:00
96 Five pirates and 100 gold coins 12.02.2014 19:54
97 Five pirates and 100 gold coins 12.02.2014 19:44
98 Five pirates and 100 gold coins 12.02.2014 19:39
99 Five pirates and 100 gold coins, This presentation has no title 12.02.2014 19:34
100 Shapes 12.02.2014 19:30
101 Shapes 12.02.2014 19:21
102 The Prime Kingdom 12.02.2014 18:32
103 The Legend of Number 10 12.02.2014 18:11
104 "The Legend of Number 10" 12.02.2014 18:10
105 The Legend of Number 10 12.02.2014 17:59
106 Shapes 12.02.2014 17:36
107 Saving Private Goldbach 12.02.2014 16:27
108 Five pirates and a 100 gold coins 12.02.2014 15:01
109 MATHFactor 12.02.2014 14:29

110 The trigonometric circle and it's functions 12.02.2014 12:26
111 1111 12.02.2014 12:11
112 Diffie-Hellman Key Exchange 12.02.2014 11:38
113 The algorithm of God 06.02.2014 12:26
114 Diophantous 06.02.2014 12:15
115 GLOBAL POSITIONING SYSTEM 05.02.2014 20:23
116 Fractals and Dragons 05.02.2014 20:11

3. Evaluation of dissemination methods of partnership - questionnaire in paper form:
10 answers, 6 questions

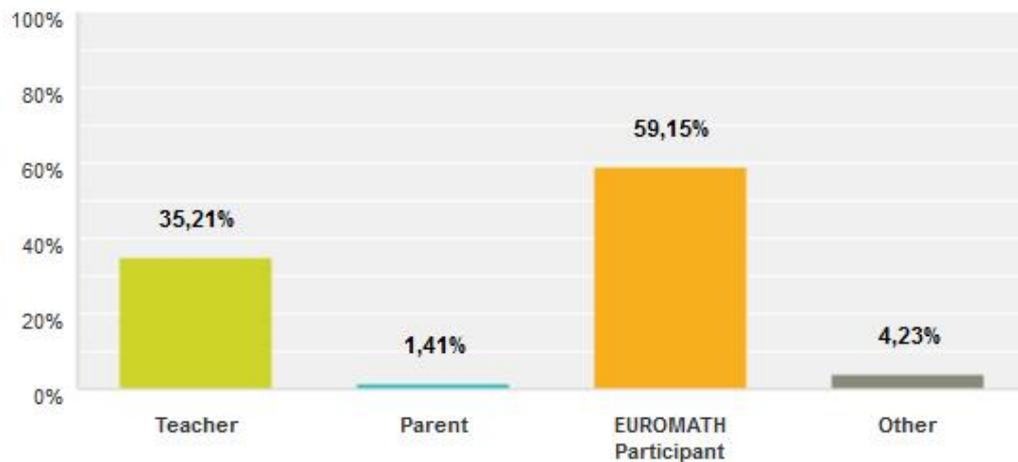
All partner-institutions are represented in this feedback.

4. Evaluation of assessment (assessors of 1st step) - 13 sent an answer throughout our survey tool. 18 examiners from the partnership assessed the videos. We sent after the assessment a questionnaire and got detailed feedback.
11 questions

5. Evaluation of auditorium - audience (during final competition) questionnaire in paper form to visitors in MATHeatre and MATHFactor. 7 questions – 73 answers

You take part at this final presentation of Le-Math Competition as (more options allowed).

Beantwortet: 71 Übersprungen: 2



Antwortmöglichkeiten	Beantwortungen	
▼ Teacher	35,21%	25
▼ Parent	1,41%	1
▼ EUROMATH Participant	59,15%	42
▼ Other	4,23%	3
Befragte gesamt: 71		

We have got a balanced sample from the audience. Only parents from Cyprus could take part.

6. Final Interviews: We invited all final participants to an interview – so we interviewed 130 persons in groups and wrote a protocol on their answers. This protocol was analysed. The summary can be found in the annex.

The questionnaires were structured in Yes-No questions and statements by using the survey monkey tool: analysis of test data. The three questionnaires provided the space for open ended questions where the participants expressed their own view.

The final interviews were analysed – the most important answers are highlighted in the annex.

SECTION 4: Partnership

Following the proposal these Partners were involved in WP 4:

P4	Au- Austria	Loidl-Art	20				20	Leader Coordination
P1	Cy- Cyprus	CMS	5	5			10	Contributing to the deliverable 7 Contacting participating schools and requesting feedback
P2	Cy- Cyprus	Thales		10			10	Contributing to the deliverable 7 Contacting participating schools and requesting feedback
P6	RO- Romania	CALISTRAT HOGAS		20			20	Contributing to the deliverable 7 Helping in the feedback questions
P7	SE- Sweden	Lyckeskolan Sec School		5			5	Contributing to the deliverable 7 Testing the platform for problems

P8	ES-Spain	LEOLAB		5	10		15	Contributing to the deliverable 7 Helping in the analysis of the feedback
P9	HU-Hungary	Junior Math Soc Miskolc		5			5	Contributing to the deliverable 7 Helping in the analysis of the feedback

We got a lot of additional help from Partner 10: European Office of Cyprus, Brussels (Rosemarie Strevinioti) and Partner 7 by running the interviews during the final competition.

Special activity during meeting 4 where the partners worked on completing the first draft of the questionnaires and the structure of the interviews.

Special advantage: The feedback in the pre-evaluations (teachers and students) and the results of the interviews gave the WP leaders from WP 3 and WP5 hints how to adapt the content of the guidebooks and the rules of participating in the competition to be viable for teachers and students.

11. Annex:

11.1. Statistics and graphs regarding use of internet

3/17/2014 Le-Math

Home George

Le-Math Ads Manager Download

Overview Likes Reach Visits Posts

When Your Fans Are Online Post Types Top Posts from Pages to Watch

Data shown for a recent 1-week period. Times of day are shown in your computer's local timezone.

Data for When Your Fans Are Online is not available.

All Posts Published
December 18, 2013 to March 17, 2014

Reach: Organic / Paid Post Clicks Likes, Comments & Shares

Published	Post	Type	Targeting	Reach	Engagement	Promote
01/14/2014 12:30 am	Le-MATH Partnership Meeting 4			5	14 1	Boost Post
01/14/2014 12:30 am	Le-MATH Partnership Meeting 4			0	14 0	Boost Post
01/14/2014 12:30 am	Le-MATH Partnership Meeting 4			03	35 0	Boost Post

Chat (Off)

<https://www.facebook.com/pages/Le-Math/304176316366089?se=insights§ion=na#posts>

1/2

3/17/2014

Le-Math

01/11/2014 3:53 pm	Le-MATH Partnership Meeting 4	289	505 7	
01/10/2014 3:53 pm	Le-MATH Partnership Meeting 4	807	1.1K 20	
01/10/2014 10:48 am	Le-Math's cover photo	49	0 0	
01/04/2014 5:28 pm	Attention students of ages 9-18!! Become a youth mathematics communication idol 2014 and win a	250	41 11	
12/30/2013 4:37 pm	Le-Math shared their photo.	100	23 3	
12/23/2013 1:35 pm	Le-Math's cover photo	18	0 0	

[About](#) [Create Ad](#) [Create Page](#) [Developers](#) [Careers](#) [Privacy](#) [Cookies](#) [Terms](#) [Help](#)

Facebook © 2014 · English (US)

https://www.facebook.com/pages/Le-Math/204176316366089?sk=insights§ion=navPosts

2/2



[Ads Manager](#) [Ex](#)

[Overview](#)

[Likes](#)

[Reach](#)

[Visits](#)

[Posts](#)

Your Fans | [People Reached](#) | [People Engaged](#)

The people who like your Page

Women

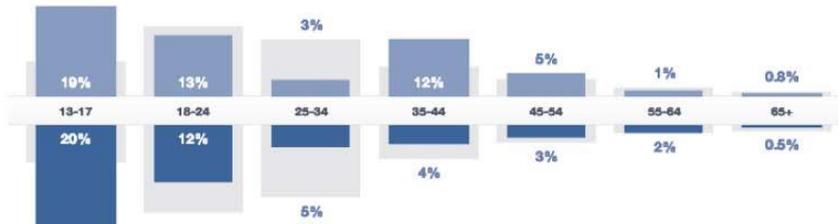
53% Your Fans

48% All Facebook

Men

45% Your Fans

54% All Facebook



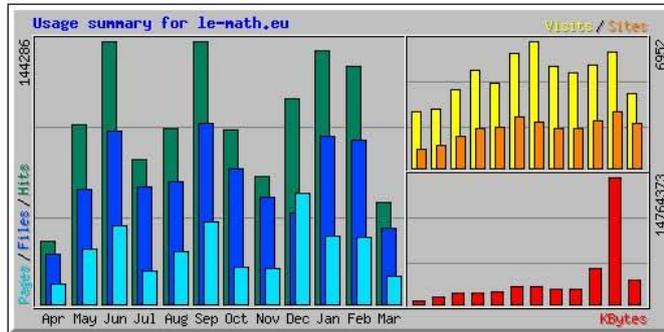
[Chat \(Off\)](#)

Country	Your Fans	City	Your Fans	Language	Your Fans
Macedonia	185	Skopje, Karpos, Macedo...	50	English (US)	155
Romania	105	Baku, Baki, Azerbaijan	47	Macedonian	81
Azerbaijan	63	Nicosia, Cyprus	25	English (UK)	72
Bulgaria	62	Sofia, Grad Sofiya, Bulgaria	24	Romanian	64
Cyprus	49	Bucharest, Bucuresti, Ro...	22	Turkish	49
Sweden	45	Zaragoza, Aragon, Spain	20	French (France)	47
Greece	42	Athens, Attiki, Greece	15	Greek	45
France	37	Zagreb, Grad Zagreb, Cr...	12	Bulgarian	41
Spain	29	Tetovë, Tetovo, Macedonia	12	Albanian	41
Turkey	28	Kumanovo, Macedonia	11	Swedish	39

[See More](#)

Usage Statistics for le-math.eu

Summary by Month
Generated 16-Mar-2014 14:22 EET



Summary by Month										
Month	Daily Avg					Monthly Totals				
	Hits	Files	Pages	Visits	Sites	KBytes	Visits	Pages	Files	Hits
Mar 2014	3484	2617	974	256	2419	2813427	4106	15585	41881	55757
Feb 2014	4669	3200	1316	226	3099	14764373	6343	36869	89623	130745
Jan 2014	4491	2963	1200	181	2620	4208240	5641	37215	91869	139235
Dec 2013	3635	1617	1971	167	2176	1735586	5200	61118	50152	112685
Nov 2013	2334	1949	641	186	2141	1755519	5588	19231	58470	70042
Oct 2013	3081	2391	664	224	2495	2020830	6952	20592	74136	95519
Sep 2013	4809	3315	1511	208	2784	2005114	6267	45340	99471	144286
Aug 2013	3101	2173	932	150	2209	1446977	4678	28905	67372	96155
Jul 2013	2549	2079	577	172	2198	1300094	5361	17894	64474	79019

<https://6.9.9.5.2083/cpsess9357124727/impfemath/webalizer/index.html>

Jun 2013	4802	3161	1440	142	1751	1353389	4272	43222	94856	144087
May 2013	3177	2033	979	105	1220	835095	3261	30372	63045	98494
Apr 2013	1151	919	368	102	1036	335443	3076	11046	27583	34544
Totals						34574087	60745	367389	822932	1200568

Generated by [Webalizer Version 2.23](#)

11.2. Emails to invite teachers and students to pre-evaluation

Internal Evaluation of Le-MATH competitions: questionnaire for students.

The coordinator, Dr. Gregory Makrides, sent an email message to you already, informing you that you will receive a questionnaire regarding your submission to Le-MATH competitions.

We send the students questionnaire to your email account. Please forward this email to your student/students.

We kindly ask you to answer this questionnaire as soon as possible (within 4 days from the date received).

Your students answer by clicking this link: https://de.surveymonkey.com/s/LE-Math_students

Thank you for supporting the Le-MATH internal evaluation.

If there are any problems please do not hesitate to ask the evaluator Mr Helmut Loidl for help: office@loidl-art.com. He will reply to your inquiry the soonest possible.

Best regards

Internal Evaluation of Le-MATH competitions: questionnaire for teacher.

The coordinator Dr. Gregory Makrides sent an email message to you already, informing you that you will receive a questionnaire regarding your submission to Le-MATH competitions.

We kindly ask you to answer this questionnaire as soon as possible (within 4 days from the date received).

Please answer by clicking this link: https://de.surveymonkey.com/s/LE-Math_teacher

Thank you for supporting the Le-MATH internal evaluation.

If there are any problems please do not hesitate to ask the evaluator Mr Helmut Loidl for help: office@loidl-art.com. He will reply to your inquiry the soonest possible.

Best regards

11.2. Statistic and graphs regarding pre-evaluation teachers

Pre-evaluation Le-MATH competitions - Teacher

Q3 School type(Primary/Secondary, Comprehensive/Middle School High School/Grammar School) and any areas of specialisation at the school (for example maths, languages, technical ...)

Beantwortet: 33 Übersprungen: 0

#	Beantwortungen	Datum
1	Secondary	16.03.2014 10:49
2	Secondary School	10.03.2014 21:07
3	Secondary	07.03.2014 17:11
4	Secondary Public School	01.03.2014 17:18
5	Secondary school	27.02.2014 16:38
6	Secondary	26.02.2014 21:52
7	high school	26.02.2014 21:24
8	Secondary	25.02.2014 13:49
9	Secondary school	25.02.2014 13:11
10	Secondary private school	25.02.2014 10:59
11	Secondary school	25.02.2014 10:54
12	Secondary School	25.02.2014 07:41
13	I teach maths and physics to pupils studie year 8 in swedish groundschool (15years old).	24.02.2014 11:50
14	Comprehensive Middle School	17.02.2014 06:24
15	High School	15.02.2014 20:36
16	The SimpleX Association is a professional association of mathematics teachers involved in teaching mathematics through both traditional and non traditional methods. The members of the association are teaching in different lower or upper secondary schools or in Universities in Romania.	14.02.2014 09:59
17	Secondary	13.02.2014 16:04
18	SECONDARY SCHOOL MATHEMATICS	13.02.2014 14:37
19	Grammar School	13.02.2014 11:10
20	Grammar School	13.02.2014 11:10
21	Secondary School specialized in International Baccalaureate	13.02.2014 10:58
22	Members of SimpleX Association are all math teachers. For the past 20 years members of the Association were all being engaged in math talent cultivation in middle and high schools, in towns like Miercurea-Cluc, Odorheiu Seculesc, Targu Mures, Cluj-Napoca.	13.02.2014 05:56
23	Middle School & High School. In high school we have 3 specializations: computers, science and English Language. But my students are in middle school	12.02.2014 22:08
24	Grammar School - there are two courses in the school: 1. science and mathematics; 2. social sciences and language	12.02.2014 21:52
25	Middle & High School. High school classes are specialized in computers, science and English language field	12.02.2014 17:10
26	primary and lower secondary	12.02.2014 16:26
27	lower secondary school ; CLIL classes ; dance and music classes	12.02.2014 14:58
28	primary and lower secondary,	12.02.2014 14:23

1 / 2

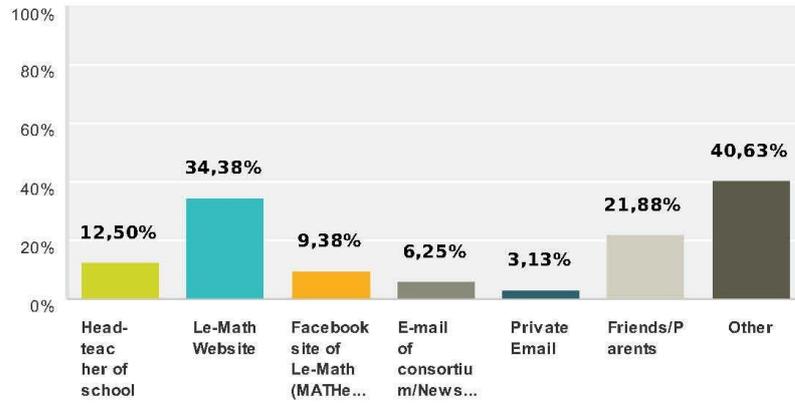
Pre-evaluation Le-MATH competitions - Teacher

29	Nagy István Art School has primary, secondary and high school sections too. The school is specialized in arts and music. SimpleX Association (on which behalf we entered the competition) is an association of mathematics teachers. We organize among many other things pro bono camps, extracurricular math activities and competitions for children in primary, secondary and high school all round Transylvania (Romania).	12.02.2014 14:14
30	High school	12.02.2014 12:07
31	High school	12.02.2014 11:35
32	High School of Mathematics and Natural Sciences "Acad.Nikola Obreshkov", Burgas, Bulgaria	07.02.2014 08:17
33	HIGH SCHOOL	06.02.2014 21:37

Pre-evaluation Le-MATH competitions - Teacher

Q4 Source of information about Le-Math

Beantwortet: 32 Übersprungen: 1

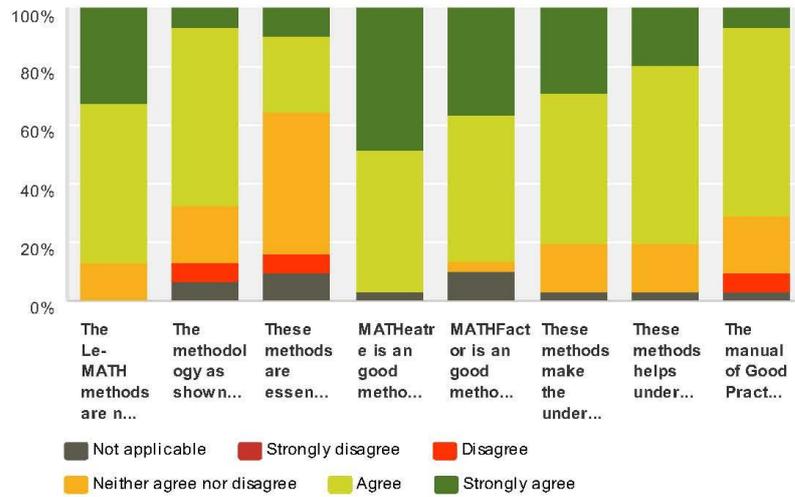


Antwortmöglichkeiten	Beantwortungen	
Head-teacher of school	12,50%	4
Le-Math Website	34,38%	11
Facebook site of Le-Math (MATHeatre or MATHfactor)	9,38%	3
E-mail of consortium/News Letter	6,25%	2
Private Email	3,13%	1
Friends/Parents	21,88%	7
Other	40,63%	13
Befragte gesamt: 32		

Pre-evaluation Le-MATH competitions - Teacher

Q5 The Le-MATH methods

Beantwortet: 31 Übersprungen: 2



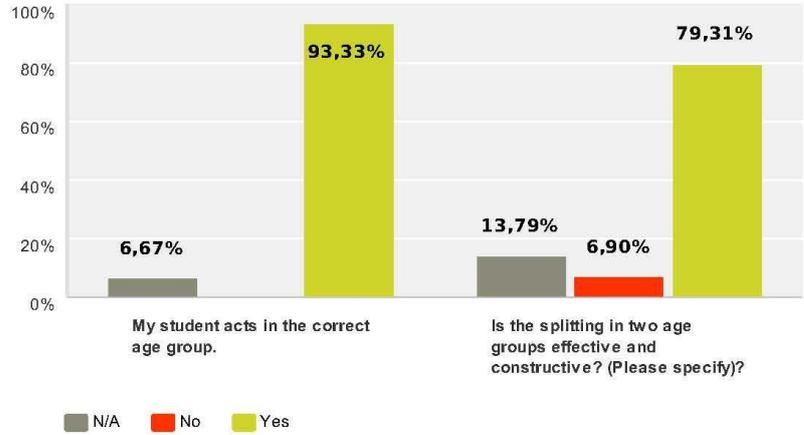
	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Gesamt
The Le-MATH methods are new and innovative for me.	0% 0	0% 0	0% 0	12,90% 4	54,84% 17	32,26% 10	31
The methodology as shown in the guidelines is helpful to prepare the activity.	6,45% 2	0% 0	6,45% 2	19,35% 6	61,29% 19	6,45% 2	31
These methods are essential for my work as a maths teacher.	9,68% 3	0% 0	6,45% 2	48,39% 15	25,81% 8	9,68% 3	31
MATHeatre is an good method to motivate pupils.	3,23% 1	0% 0	0% 0	0% 0	48,39% 15	48,39% 15	31
MATHFactor is an good method to motivate pupils.	10% 3	0% 0	0% 0	3,33% 1	50% 15	36,67% 11	30
These methods make the understanding of mathematical problems easier.	3,23% 1	0% 0	0% 0	16,13% 5	51,61% 16	29,03% 9	31
These methods helps underachiever to understand mathematical problems better.	3,23% 1	0% 0	0% 0	16,13% 5	61,29% 19	19,35% 6	31
The manual of Good Practices helps improve the preparation for these methods.	3,23% 1	0% 0	6,45% 2	19,35% 6	64,52% 20	6,45% 2	31

#	Other important factors:	Datum
1	Our interest in maths	07.03.2014 17:27
2	I'm a science teacher,not a math teacher	25.02.2014 10:57

Pre-evaluation Le-MATH competitions - Teacher

Q6 Age groups

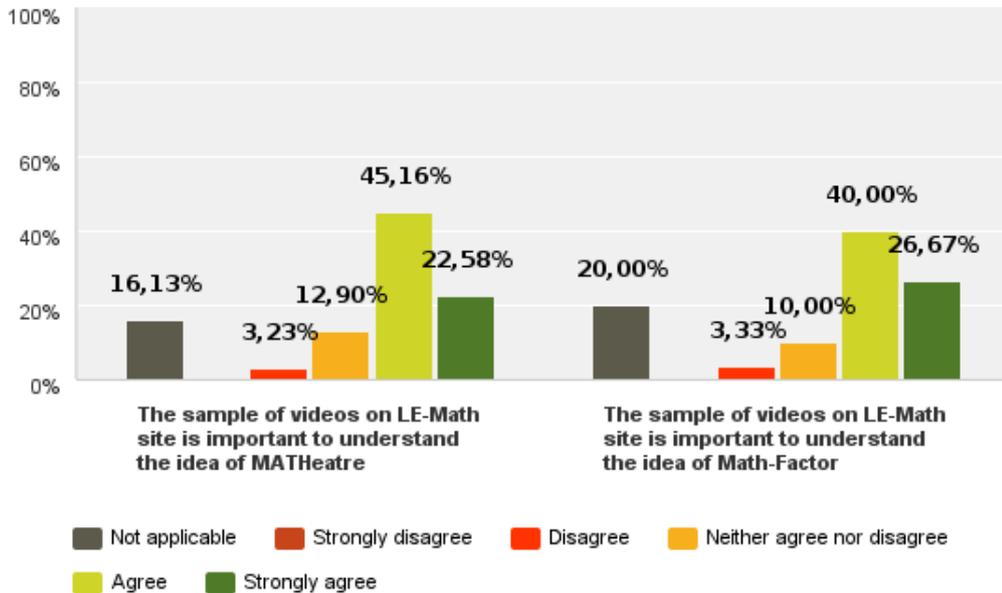
Beantwortet: 30 Übersprungen: 3



	N/A	No	Yes	Gesamt
My student acts in the correct age group.	6,67% 2	0% 0	93,33% 28	30
Is the splitting in two age groups effective and constructive? (Please specify)?	13,79% 4	6,90% 2	79,31% 23	29

Q7 Video play samples on website

Beantwortet: 31 Übersprungen: 2



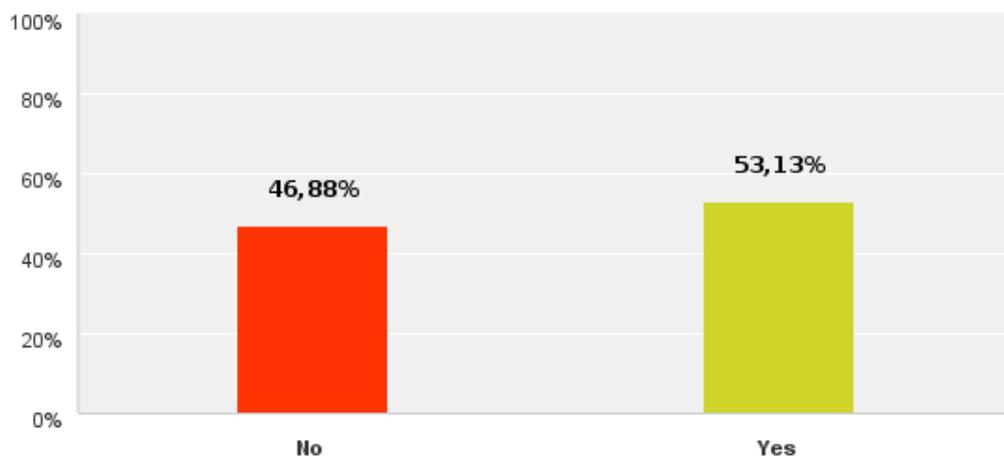
Q8 “Fun” is important for learning Maths.

Beantwortet: 32 Übersprungen: 1



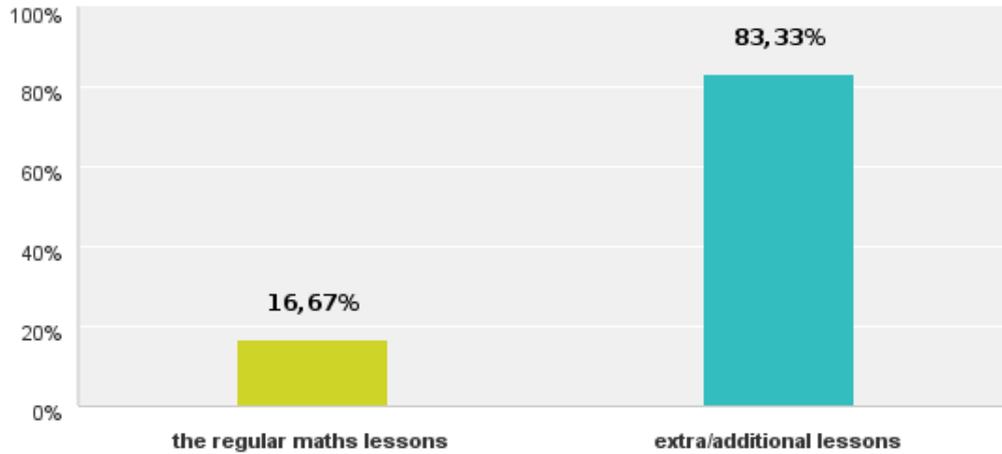
Q9 There is a Maths Club in my School.

Beantwortet: 32 Übersprungen: 1



Q10 The presentation of my pupils was prepared during

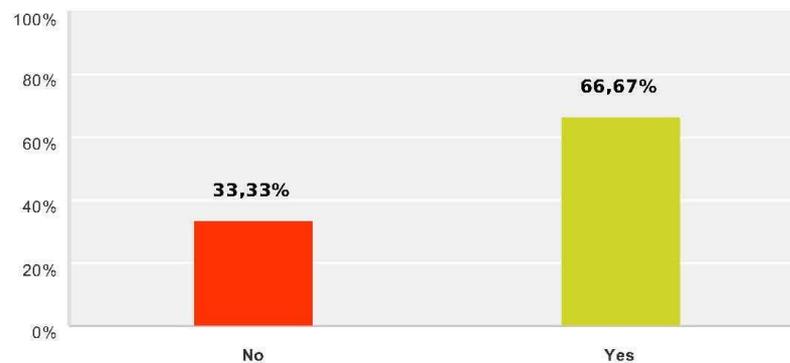
Beantwortet: 30 Übersprungen: 3



Pre-evaluation Le-MATH competitions - Teacher

Q11 It has improved my teaching process?

Beantwortet: 30 Übersprungen: 3



Antwortmöglichkeiten	Beantwortungen	
No	33,33%	10
Yes	66,67%	20
Gesamt		30

#	Comments (please specify)	Datum
1	the pupils are more enthusiastic for learning new ideas	01.03.2014 18:37
2	Only occasionally, I have introduced a new notion with a short play. (geometrical sequences for instance)	27.02.2014 16:48
3	because I'm not a math teacher	25.02.2014 11:01
4	I always try to find theatrical ways if it is applicable to teach new content in my math class	25.02.2014 07:51
5	it is inspiring and I'm thinking now of implementing it in a regular curriculum	12.02.2014 22:15
6	International projects help me exchange teaching methods with other teachers.	12.02.2014 12:26

Pre-evaluation Le-MATH competitions - Teacher

Q12 Has it influenced the pupils?

Beantwortet: 31 Übersprungen: 2

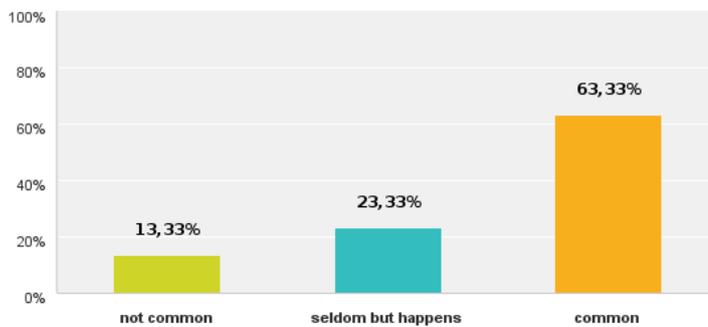


Antwortmöglichkeiten	Beantwortungen
No	0% 0
Yes	100% 31
Gesamt	31

#	Comments (please specify)	Datum
1	they are more positive with maths	01.03.2014 18:37
2	Pupils who have been acting tend to gain self confidence (they also find it easier to express themselves in english)	27.02.2014 16:48
3	Motivated the students. Excitment.	25.02.2014 11:04
4	it improved relationships with the pupils	25.02.2014 11:01
5	I think they enjoyed during our rehearsals, learned more and it helped them to understand better mathematics and its place in a real world	12.02.2014 22:15
6	more involved	12.02.2014 15:01
7	Yes, David became more engaged and I hope he will encourage other students to attend these kind of competitions in the future.	12.02.2014 12:26
8	They search and understand the interrelations between objects	07.02.2014 08:29

Q13 The use of various types of competitions my school is

Beantwortet: 30 Übersprungen: 3



Pre-evaluation Le-MATH competitions - Teacher

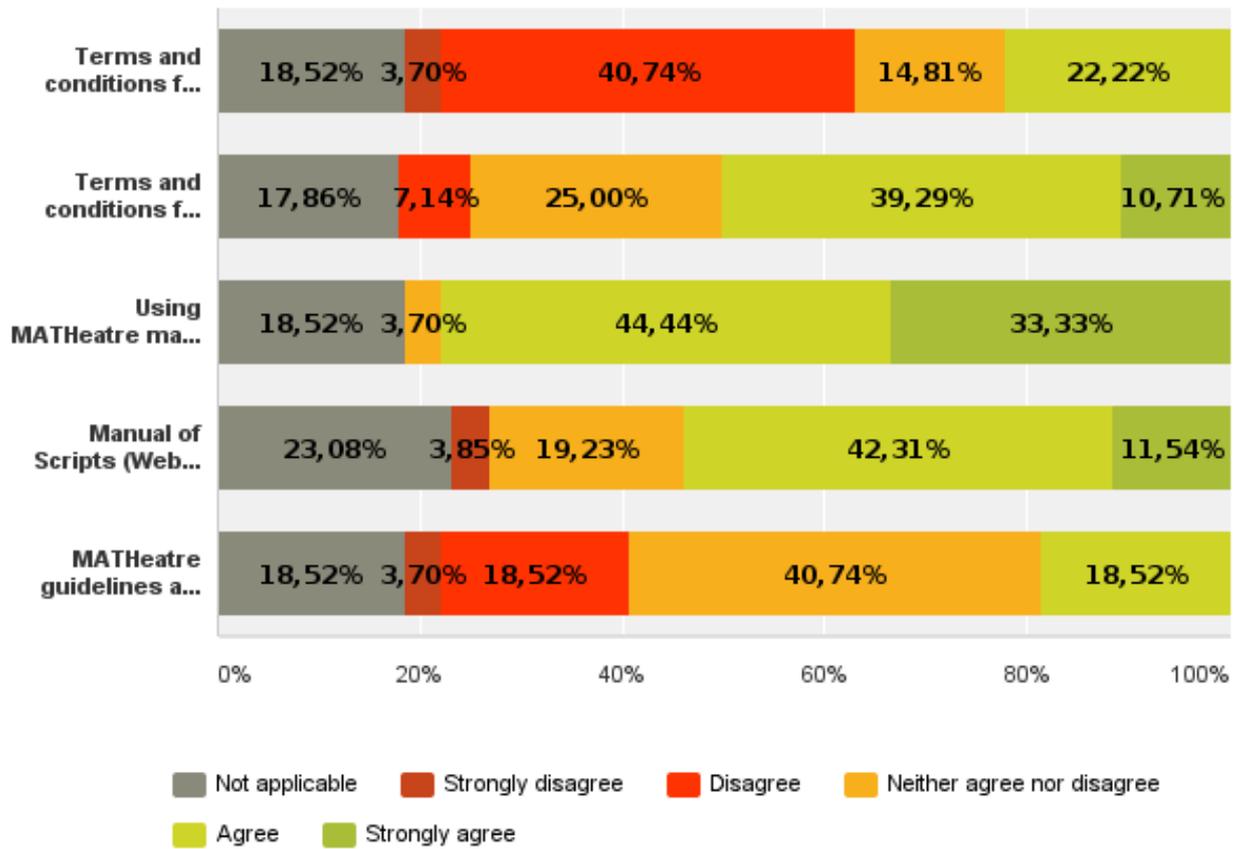
Q14 What's my individual advantage / disadvantage as a teachers if pupils take part in such a competitions (Please specify)

Beantwortet: 26 Übersprungen: 7

#	Beantwortungen	Datum
1	It helps me in my teaching process.	16.03.2014 10:54
2	advantageous because my lesson gets more interesting	07.03.2014 17:37
3	my individual advantage is the feedback from my students and the disadvantage is the lack of time	01.03.2014 20:50
4	A participation opens colleagues to new ways of teaching	27.02.2014 16:52
5	make me better teacher	26.02.2014 22:02
6	best relationships with the pupils	25.02.2014 13:13
7	Satisfaction, Excitment., Creativity even if it is time-consuming and stressful to handle	25.02.2014 11:07
8	better relationships with the pupils, discover new innovative methods	25.02.2014 11:03
9	new experience	17.02.2014 06:32
10	They become more involved, more motivated.	14.02.2014 10:03
11	It is rewarding to see the will of the students to practice something new.	13.02.2014 16:08
12	MOTIVATIONAL	13.02.2014 14:42
13	Challenge	13.02.2014 11:16
14	Challenge, satisfaction	13.02.2014 11:16
15	It stimulates creativity	13.02.2014 11:03
16	The experience.	13.02.2014 05:58
17	Developing creativity in teaching	12.02.2014 22:22
18	Pupils are enthusiastic about both math and theatre and get willingly involved in school activities.	12.02.2014 22:13
19	They become enthusiastic and willing to learn new math facts, to share their knowledge, to explain to others, to perform.	12.02.2014 17:16
20	improves relationship with the children	12.02.2014 16:28
21	It helps me making the students realising that maths ISN'T a boring subject	12.02.2014 15:07
22	none	12.02.2014 14:25
23	I can always learn something new at competitions or preparing for them.	12.02.2014 14:19
24	Students see that math can also be fun and it helps getting them be more involved in regular classes. Disadvantage would be that I have to stay longer, but it worth it.	12.02.2014 12:38
25	Our collaboration awards me with genuine satisfaction and pleasure	07.02.2014 08:34
26	WE CAN LEARN FROM PUPILS' EXPERIENCE	06.02.2014 21:42

Q17 MATHeatre

Beantwortet: 28 Übersprungen: 5



Pre-evaluation Le-MATH competitions - Teacher

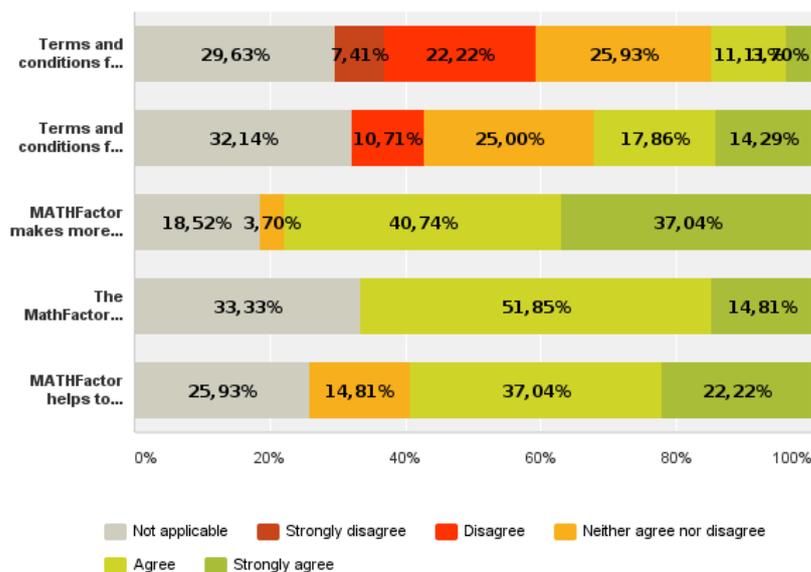
Q18 What I like most about preparing the MATHeatre presentation with my students:

Beantwortet: 21 Übersprungen: 12

#	Beantwortungen	Datum
1	The emotion.	16.03.2014 10:55
2	appetite and enthusiasm of children for mathematics	07.03.2014 17:39
3	the enthusiasm of my students to present mathematics by playing active roles	01.03.2014 20:52
4	Acquire an other point of view on math	27.02.2014 16:58
5	the strong work that we have done	26.02.2014 21:27
6	active participation and initiative of pupils	25.02.2014 13:16
7	Creativity, excitement, building the relationships with the students.	25.02.2014 11:09
8	relationships	25.02.2014 11:04
9	Their will and motivation and the fact that they learned more new material.	13.02.2014 16:10
10	I DID NOT DO IT	13.02.2014 14:43
11	creative process, commitment, fun	13.02.2014 11:18
12	Stimulating creativity and personal competence	13.02.2014 11:05
13	To be with them.	13.02.2014 06:00
14	It was fun, but hard work as well	12.02.2014 22:27
15	Their enthusiasm and their implication	12.02.2014 22:18
16	Their enthusiasm and their involvement.	12.02.2014 17:17
17	it was fun	12.02.2014 16:28
18	feeling that they got involved	12.02.2014 15:08
19	it was fun	12.02.2014 14:25
20	Working with them.	12.02.2014 14:21
21	WE DON'T PARTICIPATE	06.02.2014 21:42

Q19 MathFactor

Beantwortet: 28 Übersprungen: 5



Pre-evaluation Le-MATH competitions - Teacher

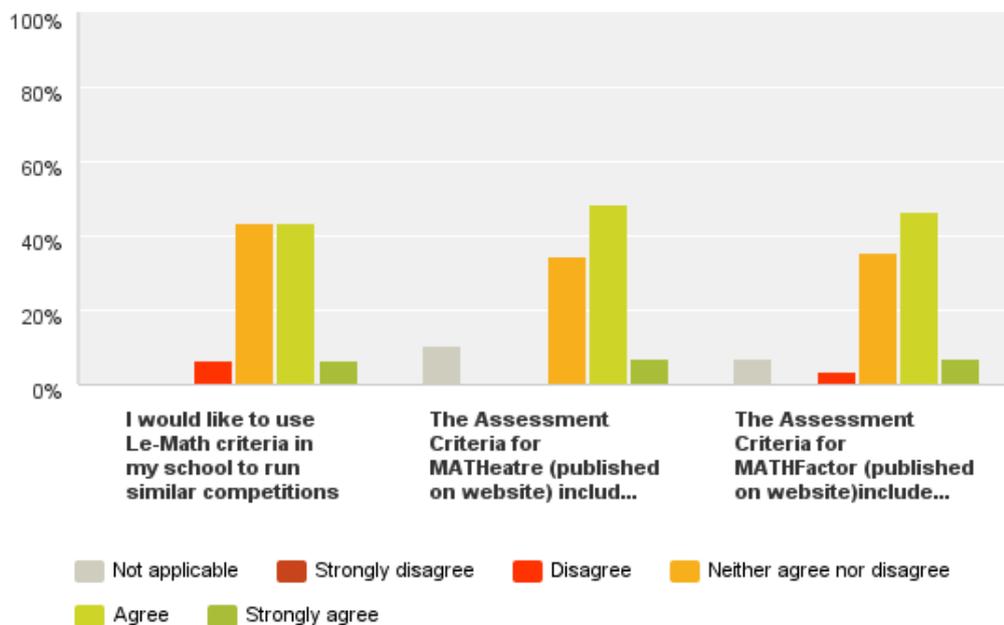
Q20 What I like most about preparing the MathFactor presentation with my students:

Beantwortet: 16 Übersprungen: 17

#	Beantwortungen	Datum
1	The emotion.	16.03.2014 10:56
2	working with students	26.02.2014 22:07
3	we came more closer	26.02.2014 21:27
4	The discoveries the students make during the process.	25.02.2014 13:52
5	the project through teamwork	17.02.2014 06:33
6	WORKING OUT/EXTRA CLASSROOM	13.02.2014 14:45
7	New topics which are not in the syllabus, use of mathematical language, ...	13.02.2014 11:19
8	Not applicable	13.02.2014 11:19
9	Stimulating creativity and personal competence	13.02.2014 11:05
10	Seeing that my students enjoyed it and had a lot of fun	12.02.2014 22:32
11	not applicable	12.02.2014 22:19
12	NA	12.02.2014 17:18
13	it was fun and inspiring	12.02.2014 14:26
14	We had a lot of fun drawing the forms and filming the whole presentation.	12.02.2014 12:41
15	sanding mathematical ideas	07.02.2014 08:34
16	IT'S DIFFERENT FROM THE OTHER COMPETITIONS	06.02.2014 21:44

Q21 Assessment/evaluation tools

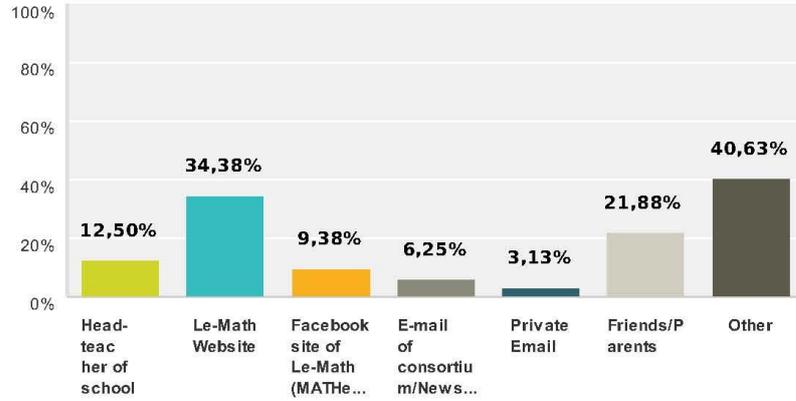
Beantwortet: 30 Übersprungen: 3



Pre-evaluation Le-MATH competitions - Teacher

Q4 Source of information about Le-Math

Beantwortet: 32 Übersprungen: 1



Antwortmöglichkeiten	Beantwortungen	
Head-teacher of school	12,50%	4
Le-Math Website	34,38%	11
Facebook site of Le-Math (MATHeatre or MATHfactor)	9,38%	3
E-mail of consortium/News Letter	6,25%	2
Private Email	3,13%	1
Friends/Parents	21,88%	7
Other	40,63%	13
Befragte gesamt: 32		

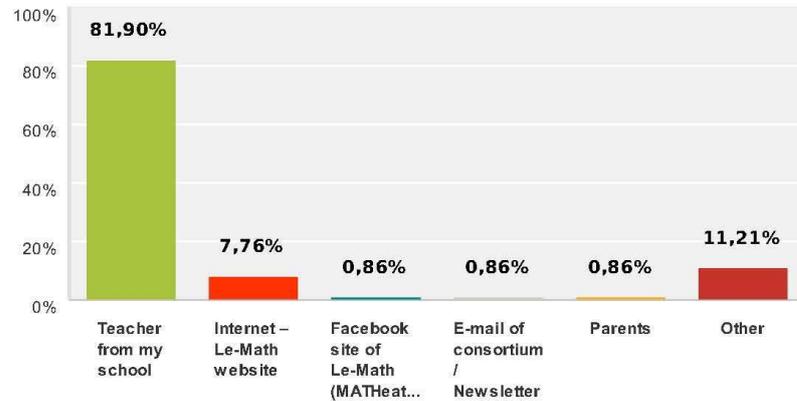
#	Other (please specify)	Datum
1	E-mail from national education	27.02.2014 16:38
2	Cyprus mathematical society	26.02.2014 21:52
3	Cyprus Mathematical Society	25.02.2014 13:49
4	Mrs Katell Tréguer, math teacher in our school	25.02.2014 13:11
5	Cyprus Mathematical Society	25.02.2014 10:59
6	Mrs Katell Tréguer	25.02.2014 10:54
7	Presentation of Péter Körtesi in Cluj Napoca	14.02.2014 09:59
8	the training course MATHEU, Identification, Motivation and Support of Mathematical Talents in European Schools	13.02.2014 11:10
9	Mathematics teacher Jasna Kos	13.02.2014 11:10
10	Teacher from Facultad de Educación Zaragoza (Spain)	13.02.2014 10:58
11	eTwinning	12.02.2014 22:08
12	Participation on the previous Conference in Gothenburgh, 2013	12.02.2014 21:52
13	eTwinning	12.02.2014 17:10
14	project partner	12.02.2014 16:26
15	from 1 of the project partners	12.02.2014 14:23

11.3. Statistics and graphs regarding pre-evaluation students

Pre-evaluation Le-MATH competitions - students

Q3 My first contact with Le-Math:

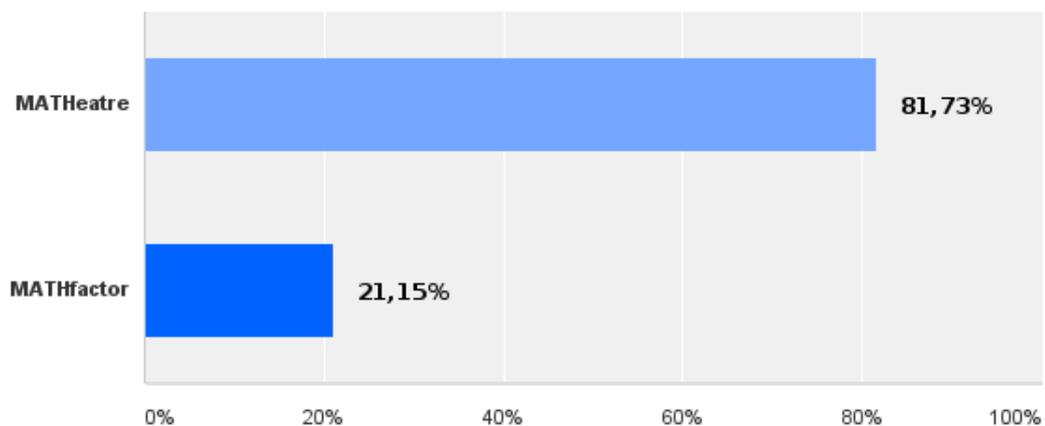
Beantwortet: 116 Übersprungen: 0



Antwortmöglichkeiten	Beantwortungen	
Teacher from my school	81,90%	95
Internet – Le-Math website	7,76%	9
Facebook site of Le-Math (MATHeatre or MATHfactor)	0,86%	1
E-mail of consortium / Newsletter	0,86%	1
Parents	0,86%	1
Other	11,21%	13
Befragte gesamt: 116		

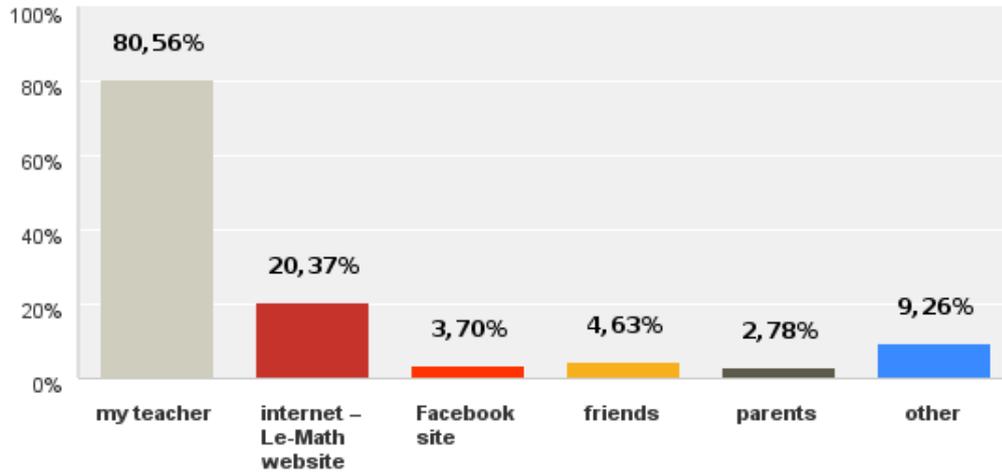
Q4 My personal favourite is?

Beantwortet: 104 Übersprungen: 12



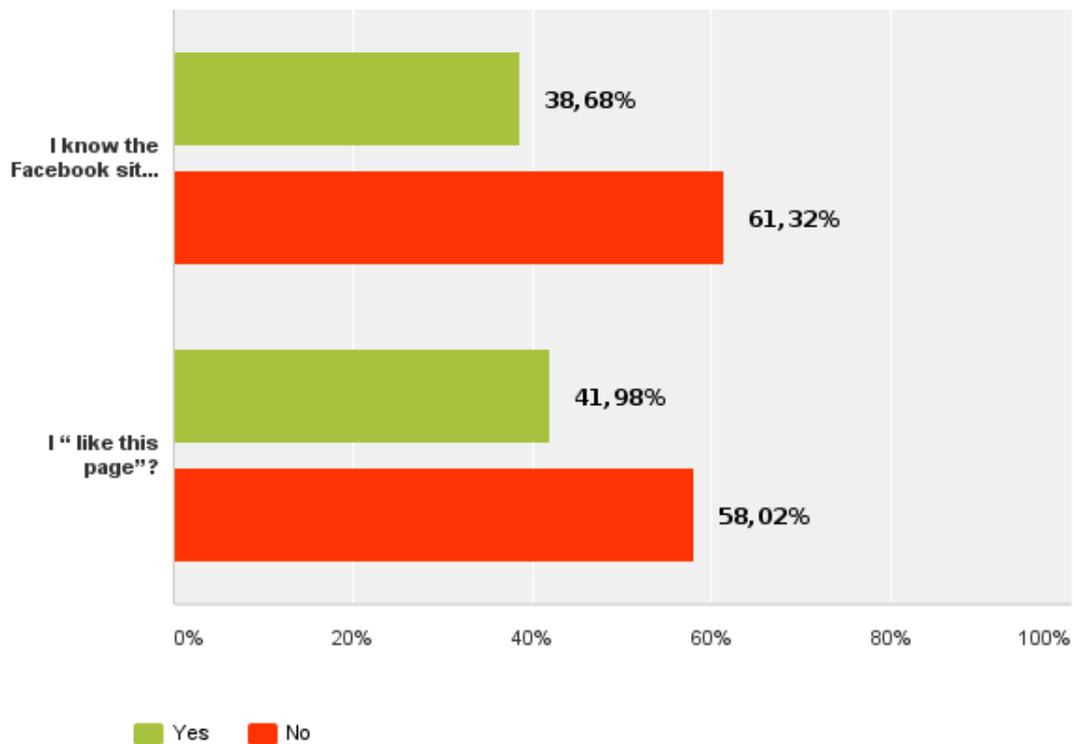
Q5 I feel sufficiently informed on MATHeatre / MATHfactor by

Beantwortet: 108 Übersprungen: 8



Q6 Facebook

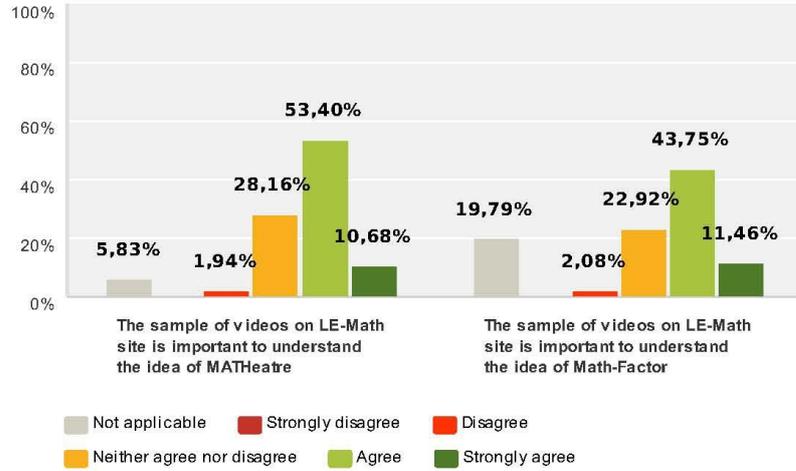
Beantwortet: 106 Übersprungen: 10



Pre-evaluation Le-MATH competitions - students

Q7 Video play samples on website

Beantwortet: 104 Übersprungen: 12



	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Gesamt
The sample of videos on LE-Math site is important to understand the idea of MATHeatre	5,83% 6	0% 0	1,94% 2	28,16% 29	53,40% 55	10,68% 11	103
The sample of videos on LE-Math site is important to understand the idea of Math-Factor	19,79% 19	0% 0	2,08% 2	22,92% 22	43,75% 42	11,46% 11	96

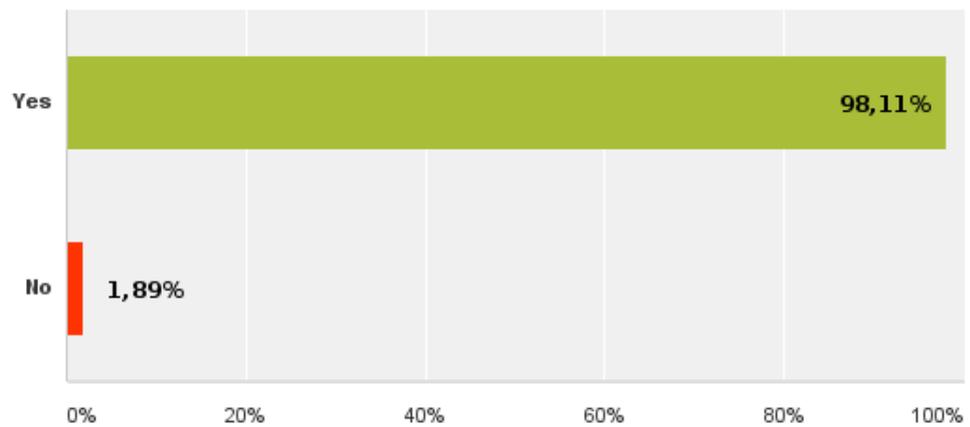
#	Comments (please specify)	Datum
1	they both give us feedback of what is expected from the students to get involved into	19.03.2014 23:03
2	It is important because if we understand the idea, we can make our own video for the competitions.	27.02.2014 16:22
3	This helps us to get the idea of these competitions and what exactly is required of us.	26.02.2014 22:56
4	It allows us to better understand the rules of the competitions	26.02.2014 07:08
5	for have an example	25.02.2014 18:05
6	I didn't see these videos	25.02.2014 10:36
7	The videos are a good way for getting know of the presentation.	23.02.2014 23:18
8	The videos are a good way for getting know of the presentation.	23.02.2014 23:15
9	The sample of videos on LE-Math site can help us prepare for competition.	16.02.2014 11:03
10	They give us an idea of what our presentation should look like	14.02.2014 21:21
11	They are a good example of what our presentation should look like	14.02.2014 20:46
12	They helped me to see how other people present their show.	14.02.2014 20:02
13	to get an idea how the play/presentation should look like	13.02.2014 19:40
14	I didn't watch	13.02.2014 19:04
15	I thought they were just so simple and childish. Hope you don't disqualify me :)	13.02.2014 18:59
16	The rules and instructions given present the ideas well enough.	13.02.2014 17:11

Pre-evaluation Le-MATH competitions - students

17	Connection not allowed at school. Didn't find easily many examples	13.02.2014 13:42
18	it's easier if you have a source to look up to	12.02.2014 23:39
19	The samples videos of Math-factor helped me to understand the idea of the project.	12.02.2014 20:17
20	I agree but I am not aware of them. Please make them more visible and clear.	12.02.2014 15:03
21	sssss	12.02.2014 12:28
22	Last winner was from my country, so that encouraged me to give it a try.	12.02.2014 11:44
23	The videos help me understand the format and show me an example of stage behavior.	05.02.2014 20:17

Q8 "Fun" is important for learning Maths.

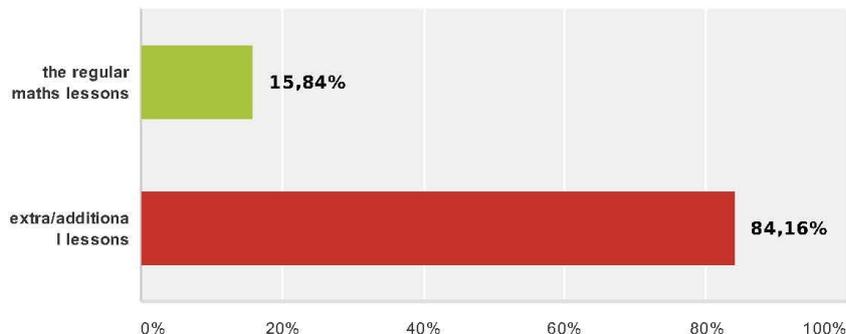
Beantwortet: 106 Übersprungen: 10



Pre-evaluation Le-MATH competitions - students

Q9 My participation in Le-Math related activities is during

Beantwortet: 101 Übersprungen: 15



Antwortmöglichkeiten	Beantwortungen
the regular maths lessons	15,84% 16
extra/additional lessons	84,16% 85
Gesamt	101

#	Comments (please specify)	Datum
1	there is not enough time in class to get prepared since the curriculum is very demanding, but the rest class has attended our activity in a regular math lessonr	19.03.2014 23:09
2	in the European section of my curriculum	17.03.2014 10:28
3	On wednesday afternoon, after class, with a little group	10.03.2014 15:04
4	every wednesday after the courses	08.03.2014 13:44
5	Eropean english	28.02.2014 17:18
6	To have better preparation	26.02.2014 22:56
7	At home or stay at school the evening	26.02.2014 07:17
8	In section european	25.02.2014 20:58
9	maths euro lessons	25.02.2014 20:41
10	European maths class	25.02.2014 20:31
11	to worked with teachers	25.02.2014 18:07
12	We also worked at home	25.02.2014 10:37
13	Math teacher can dedicate her attentio to us and our work on additional lessons more than on the regular ones	16.02.2014 11:11
14	extra lessons after school with my math teacher	14.02.2014 21:34
15	Our teachers offer their free time for Le-Math, since we don't have enough time for it on our regular lessons	14.02.2014 21:24
16	SimpleX mathematics classes	14.02.2014 21:20
17	SimpleX mathematics classes	14.02.2014 21:15
18	SimpleX mathematics classes	14.02.2014 21:09
19	SimpleX mathematics classes	14.02.2014 21:06
20	SimpleX math classes	14.02.2014 21:03

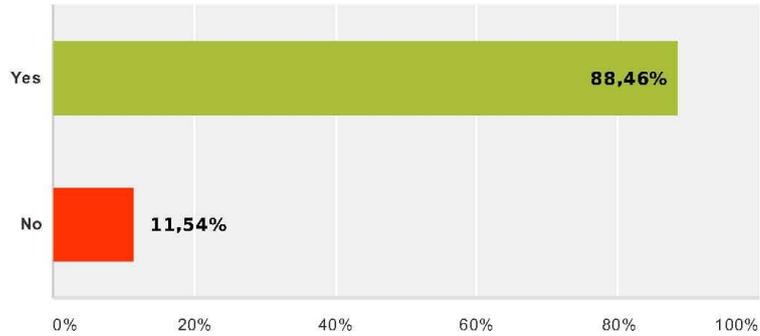
Pre-evaluation Le-MATH competitions - students

21	Unfortunately, we don't have enough time for Le-Math in our regular lessons, but our teachers are always able to offer their free time to those who are interested	14.02.2014 20:54
22	SimpleX mathematics classes	14.02.2014 20:44
23	We had an extra/additional lessons because we could not manage that on the regular math lessons.	14.02.2014 20:07
24	SimpleX mathematics classes	14.02.2014 17:09
25	SimpleX math activities	14.02.2014 16:07
26	SimpleX math activities	14.02.2014 15:26
27	I did the whole idea/plot developing in my own free time, we practised the play after school and during one maths lesson in front of our mates.	13.02.2014 19:03
28	European section with Maths as a non linguistic subject	13.02.2014 15:57
29	My collaboration with the project was my personal choice	12.02.2014 21:55
30	I have had to investigate on the selected topic from 0.	12.02.2014 20:21
31	After school	12.02.2014 19:58
32	During the hours of a school project.	12.02.2014 19:49
33	I mostly researched at home about the problem, but the most interesting and fun part was preparing and filming at school.	12.02.2014 11:55
34	My preparation and participation in Le-Math is an extracurricular activity.	05.02.2014 20:22

Pre-evaluation Le-MATH competitions - students

Q10 Preparing for the Le-Math performance has a positive influence on my attitude to mathematics?

Beantwortet: 104 Übersprungen: 12



Antwortmöglichkeiten	Beantwortungen	
Yes	88,46%	92
No	11,54%	12
Gesamt		104

#	Comments (please specify)	Datum
1	it made me to get fond of them and enjoy more than before	19.03.2014 23:09
2	Because it has help me to understand some notions, and I like to share my knowledge to others	10.03.2014 15:04
3	It hepls me improve my skills on Maths.	05.03.2014 21:57
4	because it's easier than a simple math	04.03.2014 15:29
5	The preparing for the performance has a positive influence on my attitude to mathematics because I applied my mathematic skills in the art.	27.02.2014 16:28
6	Because it helps me to learn new things and to improve my knowledge	26.02.2014 22:56
7	It's very nice because we can see them in a new light.	26.02.2014 07:17
8	I know now math can do in a positive attitude	25.02.2014 21:36
9	I'm more interested in math now when I am preparing fot the Le-Math performance.	16.02.2014 11:11
10	I've learned something new about an unusual and interesting topic, found fun topics of maths	14.02.2014 22:15
11	it hel me realize that math can be fun	14.02.2014 21:34
12	It made me realize how much we depend on mathematics, and why it is important that we study it	14.02.2014 21:24
13	Mathematics already has positive influence on me.	14.02.2014 21:09
14	It has indeed made me realize that mathematics can be fun	14.02.2014 20:54
15	I learnt a lot through fun.	14.02.2014 20:07
16	I found the world and history of mathematics really interesting and enchanting. Learning about stories behind famous conjectures and theorems is really interesting!	13.02.2014 19:03
17	By trying to find an interesting theme of the performance, I changed the way I see math and realised it is present everywhere around me.	13.02.2014 17:22
18	LOVED maths before !	13.02.2014 15:57

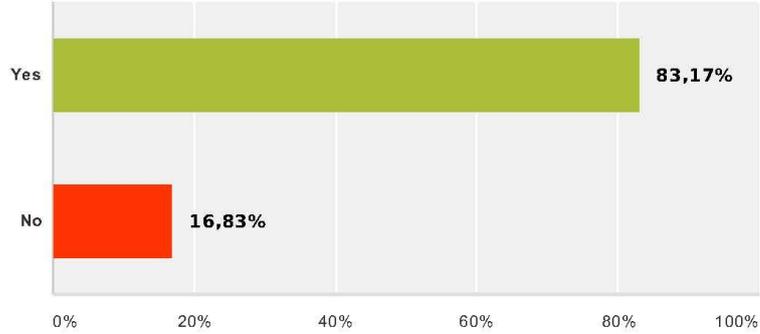
Pre-evaluation Le-MATH competitions - students

19	I have a better relationship with my teacher now than before	12.02.2014 21:55
20	I realized that there are a lot of interesting topics with practical application that I missed.	12.02.2014 20:21
21	More interested	12.02.2014 19:58
22	I see them from an other perspective	12.02.2014 19:49
23	It is two different things	12.02.2014 15:04
24	While preparing for the performance I learned more about cryptography.	12.02.2014 11:55
25	Thanks to my research in this area I found new interesting ways of expressing math problems.	05.02.2014 20:22

Pre-evaluation Le-MATH competitions - students

Q11 Learning Maths is easier by using this method?

Beantwortet: 101 Übersprungen: 15



Antwortmöglichkeiten	Beantwortungen	
Yes	83,17%	84
No	16,83%	17
Gesamt		101

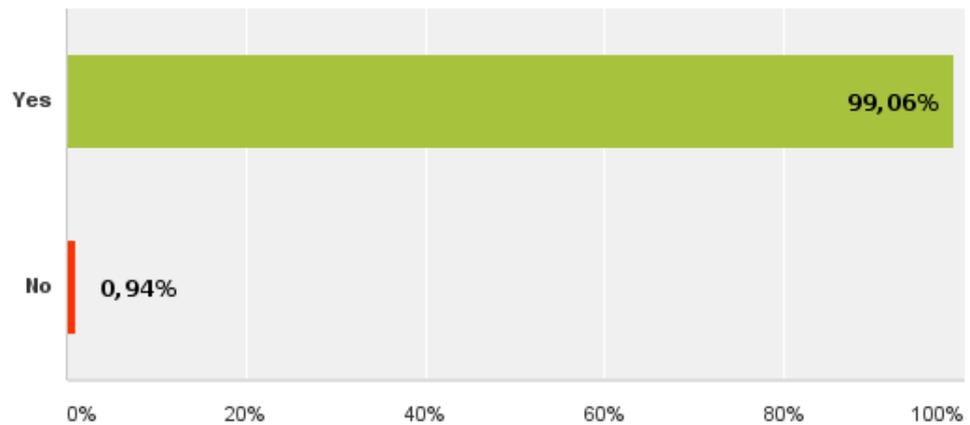
#	Please specify	Datum
1	although it is not so easy to perform maths in every new subject, it breaks the routine of every day math lesson	19.03.2014 23:09
2	Because it's great to learn mathematics in group. It's more ludic	10.03.2014 15:04
3	I don't know	08.03.2014 18:06
4	Learning Maths is easier by using this method because it's innovative and attractive.	27.02.2014 16:28
5	Because it is very useful	26.02.2014 22:56
6	Yes, because we learn lots of vocabulary, if we work on a mathematician's life, we know his biography and we learn his properties.	26.02.2014 07:17
7	it's more interesting and fun	25.02.2014 21:36
8	That is more funny !	25.02.2014 20:58
9	it's easy to learn math with fun	25.02.2014 18:53
10	it's more fun	25.02.2014 18:07
11	Because it's more interesting to learn math.	16.02.2014 11:11
12	because is more fun	14.02.2014 21:34
13	It is much more interesting to study mathematics this way	14.02.2014 21:24
14	Rather than people talking about it, we actually see the importance of mathematics in our everyday lives	14.02.2014 20:54
15	I think it is better then studying on the old-fashion way.	14.02.2014 20:07
16	I guess me and my friends now know the Goldbach's Conjecture by heart and understand the importance of such discoveries for men like Andrew Wiles etc.	13.02.2014 19:03
17	My performance does not help me with any of the topics of math we have done in school. Yet.	13.02.2014 17:22
18	probably , especially because many pupils don't know how maths can be useful	13.02.2014 15:57
19	doing exercises is still the only way to learn math	12.02.2014 23:40

Pre-evaluation Le-MATH competitions - students

20	It makes it easier to understand and remember	12.02.2014 21:55
21	Because is more interactive, so we pay attention in the explanations.	12.02.2014 20:21
22	Different approach to maths	12.02.2014 19:37
23	yes it is	12.02.2014 18:14
24	It is certainly more appealing to the students.	12.02.2014 15:04
25	Yes, definitely. My classmates watched the video and they understood it very well, as opposed to when they read about it.	12.02.2014 11:55
26	Visually presented problems are easier to understand.	05.02.2014 20:22

Q12 I like to take part in competitions

Beantwortet: 106 Übersprungen: 10



Pre-evaluation Le-MATH competitions - students

Q13 Do you think that taking part in this competition gives you a personal Advantage / disadvantage? (Please specify)

Beantwortet: 86 Übersprungen: 30

#	Beantwortungen	Datum
1	It makes me more valuable in the eyes of my maths teacher and the rest school	19.03.2014 23:14
2	It gives you an advantage, i will experience new things from which i will learn and use in life.	19.03.2014 19:04
3	I learnt a lot of things, preparing this competition: math content, express myself in public and so on	17.03.2014 10:31
4	Yes, definitely!	16.03.2014 11:13
5	It's for me a good motivation.	10.03.2014 15:09
6	no	08.03.2014 18:07
7	It's a good experience for me to speak english in a mathematical sketch	08.03.2014 13:51
8	I improve my skills on Maths and as an individual.	05.03.2014 21:59
9	Yes it gives me an advantage since its a wonderful expirience where i can learn new things	05.03.2014 14:46
10	advantage	04.03.2014 15:31
11	I don't know	04.03.2014 15:21
12	advantage since i get more experience and my self confidence increases	03.03.2014 16:50
13	I don't know	03.03.2014 13:13
14	I don't know	02.03.2014 22:45
15	yes it gives me a personal advantage.	01.03.2014 18:48
16	advantage	27.02.2014 16:30
17	Yes, it gives me the advantage to gain experience	26.02.2014 22:56
18	i find maths easier	26.02.2014 22:19
19	Advantages ,you gain new experiences	26.02.2014 21:21
20	no,it's the same	26.02.2014 20:21
21	I think that taking part in this competition give me a personal advantage because it's nice.	26.02.2014 15:31
22	It gives us advantage, it's very interesting and we are really concerned about the competition	26.02.2014 07:22
23	Advantage	25.02.2014 22:18
24	advantage	25.02.2014 21:59
25	an advantage because we learn to make a sketch of theatre in english about mathematical lessons	25.02.2014 21:40
26	Advantage: now I find maths good	25.02.2014 21:11
27	It gives me an advantage	25.02.2014 21:00
28	advantage	25.02.2014 20:44
29	Advantage because this competition change the maths lessons for me !	25.02.2014 20:36
30	No	25.02.2014 18:49
31	yes, I learn public speaking	25.02.2014 18:10
32	an advantage because it learn me new tactics for the Maths	25.02.2014 18:10
33	yes, because i can develop my knowledge in mathematics	25.02.2014 13:44

Pre-evaluation Le-MATH competitions - students

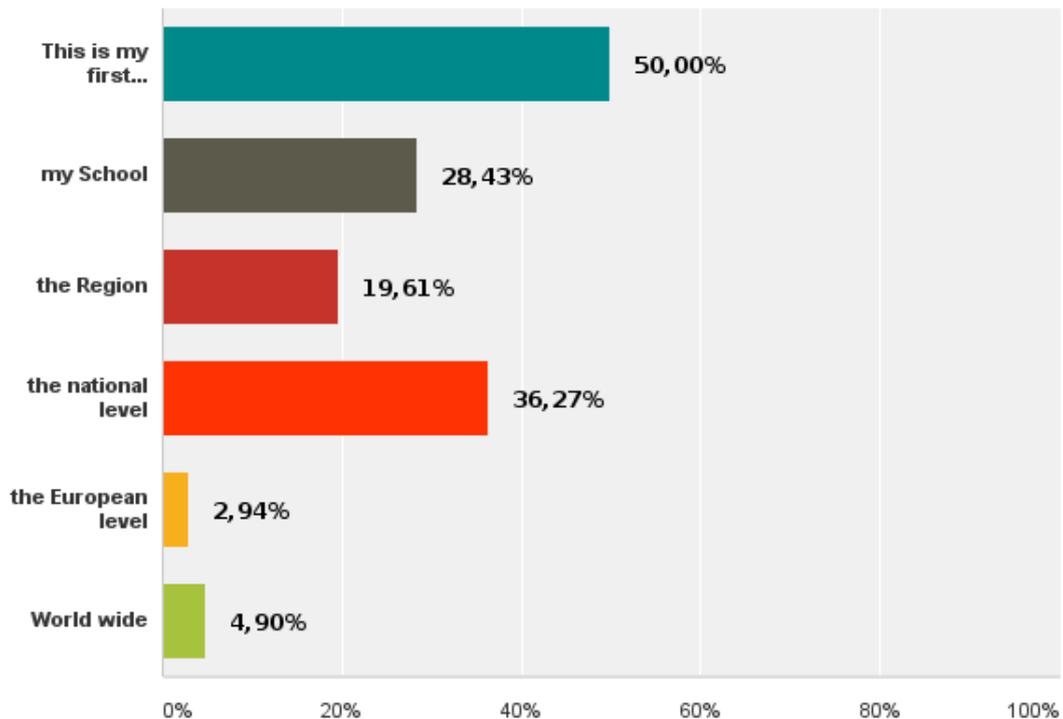
34	Yes we learn how to organize us without the help of our teachers	25.02.2014 12:22
35	yes i'm speaking greater	25.02.2014 11:04
36	yes i'm speaking greater	25.02.2014 11:04
37	Yes, it helped in my relationships with others	25.02.2014 10:41
38	I think that it gives me a lot of advantages.	23.02.2014 23:19
39	I think that it gives me a lot of advantages.	23.02.2014 23:15
40	It is an advantage, because I get to spread my knowledge, and make some new friendships.	16.02.2014 15:18
41	I think that taking part in this competition gives me a personal advantage because I can expand my knowledge.	16.02.2014 11:24
42	The advantage for me is that taking part of this competition gives me more opportunities to communicate and makes me common with the rest of my friends (the rest of the team).	15.02.2014 20:53
43	Yes, I do	15.02.2014 18:30
44	yes i think i have advantages because if i part in this competition i learn a lot of new things	15.02.2014 18:29
45	No, i don't think so.	15.02.2014 16:14
46	Yes, as it is a great experience	14.02.2014 22:17
47	it gives me advantage because i learn a lot	14.02.2014 21:39
48	It gives me a personal advantage because it gives me great confidence in my knowledge	14.02.2014 21:27
49	I think it gives me a personal advantage because it has boosted my confidence in myself and in my knowledge	14.02.2014 21:02
50	Yes.	14.02.2014 20:51
51	No	14.02.2014 20:33
52	I think that taking part in this competition gives me a personal advantage, because I got new experience and now I have more self-confidence.	14.02.2014 20:12
53	Yes, it gives me advantage because I can improve my skills and make new friendships	14.02.2014 17:37
54	Gives me advantage.	14.02.2014 17:12
55	yes	14.02.2014 16:07
56	I like it.	14.02.2014 15:28
57	Yes, because it is fun. And I learn math things.	13.02.2014 22:10
58	It's a different way of learning and it gives motivation	13.02.2014 19:08
59	I think I developed my acting and writing skills, furthermore my German accent!	13.02.2014 19:05
60	I do not think it could help me. But preparing and shooting for the competition made me happy and more open to other math problems.	13.02.2014 17:22
61	It will help improve my maths and my english.	13.02.2014 16:00
62	maybe changed my relationship with the pupils in Eurosection	13.02.2014 15:59
63	YES	13.02.2014 14:48
64	because I improve my skills	13.02.2014 12:30
65	advantage+ learned a lot and in was nice to work with such great people	12.02.2014 23:42
66	Advantage. It is international (different language ...) and is in want of an original idea, which is always good.	12.02.2014 21:59
67	Advantage	12.02.2014 21:18
68	Taking part in competitions has always been a hobby of mine, I believe it doesn't grant any advantage or disadvantage - apart from fun of course!	12.02.2014 21:11
69	An advantage, any event I participate suppose a new experience.	12.02.2014 20:23
70	yes, it is an advantage	12.02.2014 20:20
71	Advantage	12.02.2014 20:07

Pre-evaluation Le-MATH competitions - students

72	Advantage of satisfaction	12.02.2014 20:03
73	Yes because I am in front of a big audience.	12.02.2014 19:50
74	Yes, it is an advantage	12.02.2014 19:45
75	advantage - experience	12.02.2014 19:43
76	I believe it would be a great experience both regarding maths and official competitions in general	12.02.2014 19:39
77	no, unless we get to the final, but it was fun	12.02.2014 18:34
78	an advantage because it's more fun to learn math	12.02.2014 18:16
79	I think it's give me a personal advantage.	12.02.2014 18:04
80	yes, it gives me a chance to win	12.02.2014 14:31
81	It gives me an advantage by gaining my experience.	12.02.2014 12:27
82	Yes, other than learning more about the mathematical problem, I also practiced English and became better.	12.02.2014 12:02
83	Of course it does!	06.02.2014 12:28
84	yes, i gain a lot of experience	06.02.2014 12:18
85	I think it is an advantage	05.02.2014 20:26
86	I believe that this international participation improves my expertise.	05.02.2014 20:25

Q14 On which level of competition I have previously participated in?

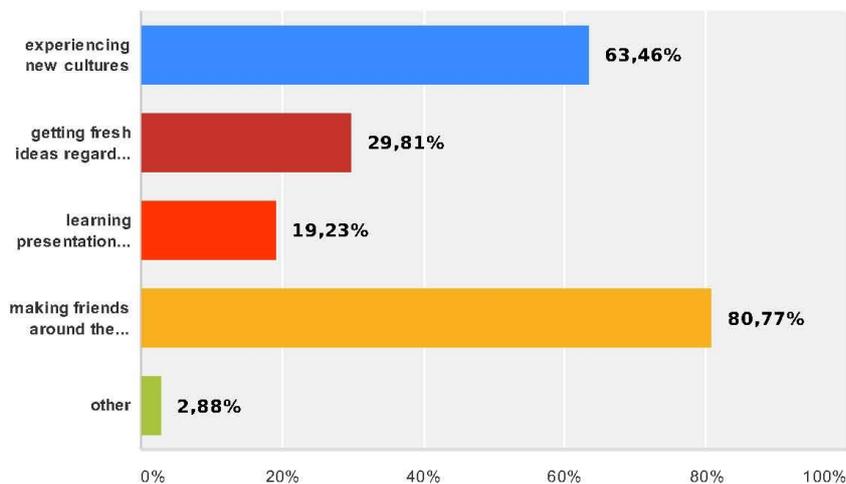
Beantwortet: 102 Übersprungen: 14



Pre-evaluation Le-MATH competitions - students

Q15 I like to meet colleagues from EU and non-EU countries because of

Beantwortet: 104 Übersprungen: 12

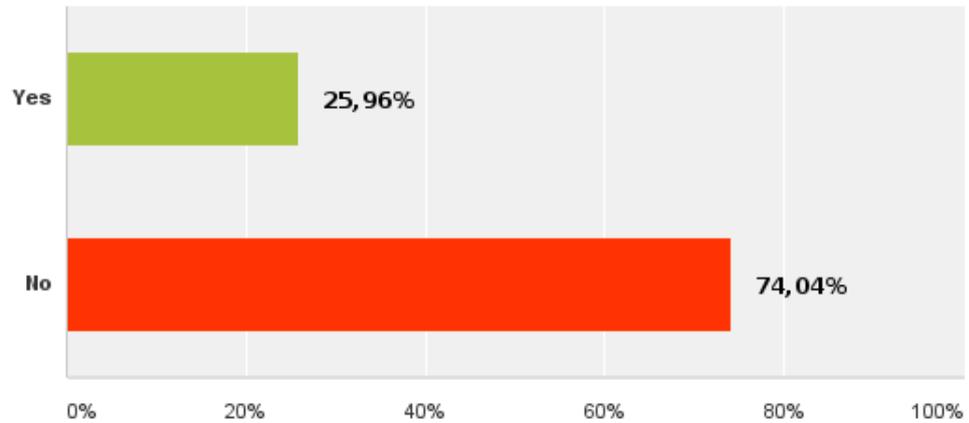


Antwortmöglichkeiten	Beantwortungen	
experiencing new cultures	63,46%	66
getting fresh ideas regarding solving of math problems	29,81%	31
learning presentation methods	19,23%	20
making friends around the world	80,77%	84
other	2,88%	3
Befragte gesamt: 104		

#	Other (please specify)	Datum
1	learn english with a pupils who always speak english	25.02.2014 21:40
2	Experiencing new cultures and making friends around the world	16.02.2014 11:24
3	meeting people with common interests	13.02.2014 17:22
4	Travelling	12.02.2014 20:23
5	possible future collaborations	12.02.2014 15:05
6	I'd like to hear from other people what is education like in other countries, as I'm thinking about studying abroad for a year or so.	12.02.2014 12:02

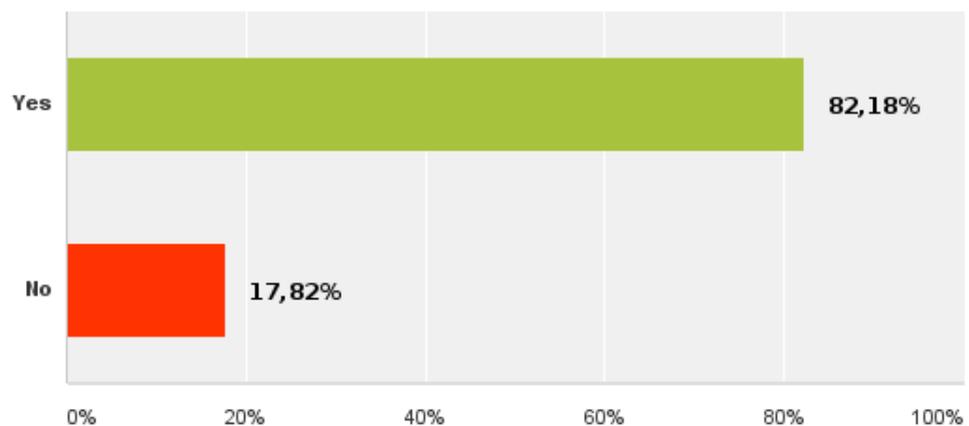
Q16 I would feel more comfortable in a different age group?

Beantwortet: 104 Übersprungen: 12



Q17 I see an advantage for the participants if also non-EU countries are participating.

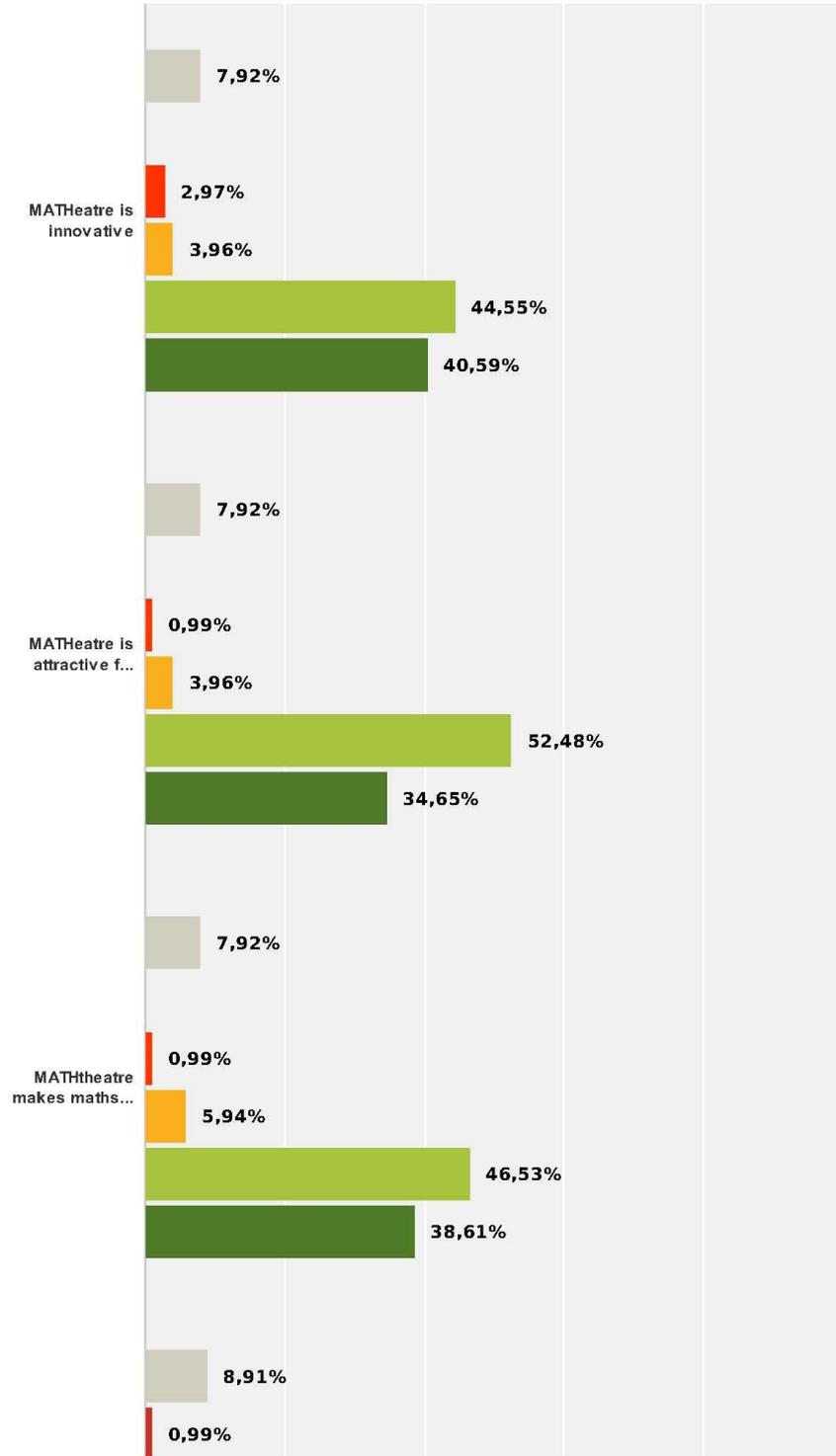
Beantwortet: 101 Übersprungen: 15



Pre-evaluation Le-MATH competitions - students

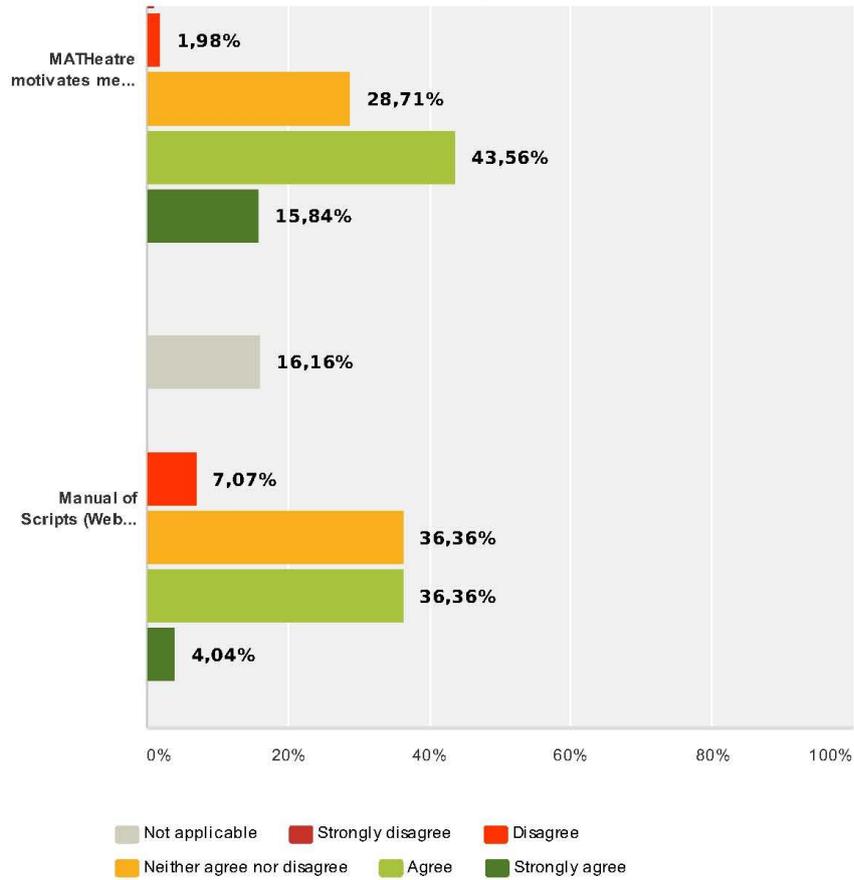
Q18 MATHeatre

Beantwortet: 101 Übersprungen: 15



1 / 4

Pre-evaluation Le-MATH competitions - students



	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Gesamt
MATHeatre is innovative	7,92% 8	0% 0	2,97% 3	3,96% 4	44,55% 45	40,59% 41	101
MATHeatre is attractive for you.	7,92% 8	0% 0	0,99% 1	3,96% 4	52,48% 53	34,65% 35	101
MATHeatre makes maths fun!	7,92% 8	0% 0	0,99% 1	5,94% 6	46,53% 47	38,61% 39	101
MATHeatre motivates me to learn Maths.	8,91% 9	0,99% 1	1,98% 2	28,71% 29	43,56% 44	15,84% 16	101
Manual of Scripts (Web site or book) is helpful to find ideas to improve the MATHeatre Play.	16,16% 16	0% 0	7,07% 7	36,36% 36	36,36% 36	4,04% 4	99

#	What was easy/not easy to prepare? (please specify)	Datum
1	To learn my words was not so easy	19.03.2014 23:15
2	It was easier to prepare because of the work in group	17.03.2014 10:33
3	It was quiet easy to learn my texte but more difficult to imagine how to play the stage.	10.03.2014 15:16
4	to speak english in front of other people	08.03.2014 13:52
5	Only the Costumes!	05.03.2014 22:01

Pre-evaluation Le-MATH competitions - students

6	To learn the texts by hard	05.03.2014 14:47
7	It was not always easy to memorize my part	02.03.2014 22:46
8	learning the text because it is not my native language	01.03.2014 18:49
9	The making of the costumes was the hardest part of the preparation for MATHeatre.	27.02.2014 16:30
10	It wasn't easy for me the acting	26.02.2014 22:56
11	no because a theater play wasn't always easier to write	26.02.2014 20:25
12	I don't know	26.02.2014 15:34
13	was not very easy because we only had one hour a week to prepare for the competition	26.02.2014 08:41
14	It wasn't easy but we didn't give up the competition	26.02.2014 07:24
15	they haven't got time for makes our sketch	25.02.2014 21:41
16	It's not easy	25.02.2014 21:13
17	The text	25.02.2014 21:01
18	easy	25.02.2014 20:36
19	The script when we have an idea	25.02.2014 19:01
20	we need more time	25.02.2014 18:11
21	the script was not easy	25.02.2014 16:57
22	create dialogues wasn't easy but the repetitions were so fun	25.02.2014 12:23
23	create the dialogues was not easy but it's fun	25.02.2014 11:06
24	create the dialogues was not easy but	25.02.2014 11:06
25	it was easy because we worked in groups, but we needed much more time	25.02.2014 10:42
26	Because of the suits and the prop.	23.02.2014 23:19
27	Because of the suits and the prop.	23.02.2014 23:15
28	It was easy because it was really interesting, but on the other hand it was hard because we had to prepare hard.	16.02.2014 15:20
29	Because it's more fun to work in team where everyone can share their ideas.	16.02.2014 11:27
30	it was easy to prepare the play	14.02.2014 21:41
31	We had some trouble with our equipment, so filming was probably the most difficult part	14.02.2014 21:33
32	The hardest thing to prepare was the place and equipment to make the video for our play, since our school doesn't have enough resources	14.02.2014 21:05
33	Everything was easy to prepare, because we worked in group and our teacher helped us a lot.	14.02.2014 20:14
34	We needed some time to learn the script, but it was fun.	13.02.2014 22:12
35	not easy : finish the video	13.02.2014 19:10
36	The easiest part was writing. The hardest was making a shorter version to fit your 12 minutes standard. We learned the text very quickly and the whole acting thing went very smoothly and enjoyably :) Yet filming this 12 minute play took us five hours the first time! We had to shoot it again, but we were quicker that time.	13.02.2014 19:07
37	I helped with the shooting and rehearsing of my friends who took part in the MATHeatre and I know how positive the responses were. The hardest part was to find a good math problem, statment or section, which could be used as a thread in the play.	13.02.2014 17:25
38	It was easy to find costumes and props, but preparing the projected background and cameras proved to be more difficult	13.02.2014 16:04
39	Nothing for MATHeatre was easy to prepare, we put a lot of work into it. We had to learn text, practise scenes over and over again and finally, we had to shoot them in one piece perfectly; we had a lot of tehcnical problems the first time we were shooting, but at the end we were all satisfied, which is what's the most important.	12.02.2014 23:45
40	Firstly, we had to come with an original idea, a story. Secondly, we had to fuse mathematical problems and a logical story together, and lastly, perform it under the time limit of 12 minutes. The last was probably the hardest, as we had to cut out several scenes, characters, quotes ...	12.02.2014 22:04

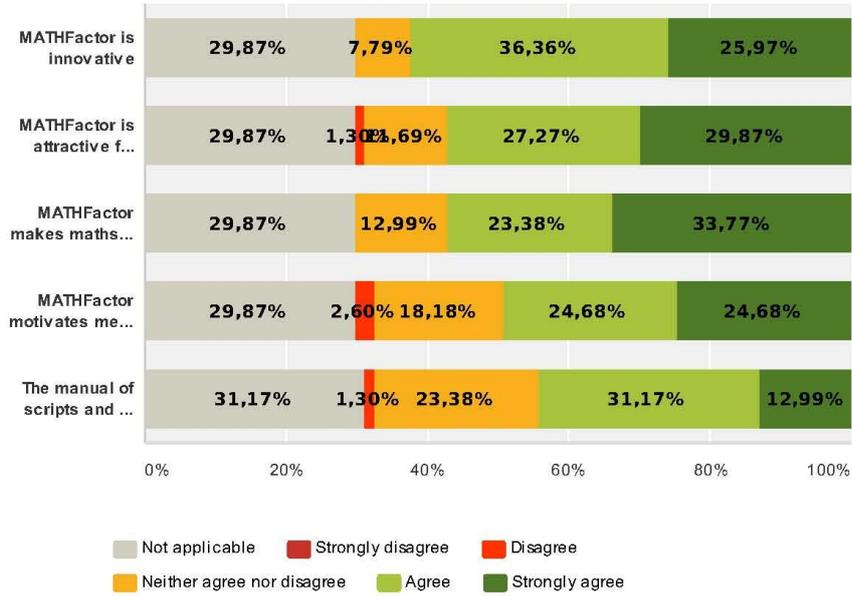
Pre-evaluation Le-MATH competitions - students

41	Rehearsing was fun - neither easy or not easy I guess	12.02.2014 21:12
42	Nothing	12.02.2014 20:05
43	The coordination between all members.	12.02.2014 19:50
44	is easy because I love math	12.02.2014 19:48
45	The camera and the filming was hard to do	12.02.2014 19:39
46	i think it was easy because i worked with my friends	12.02.2014 18:17
47	When we found out about the competition, unfortunately it was too late to prepare the videos as we would have liked to. We did our best and if we go to the final we will certainly improve the content and the quality of the presentations	12.02.2014 15:06
48	I participated in MATHFactor.	12.02.2014 14:31

Pre-evaluation Le-MATH competitions - students

Q19 MathFactor

Beantwortet: 78 Übersprungen: 38



	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Gesamt
MATHFactor is innovative	29,87% 23	0% 0	0% 0	7,79% 6	36,36% 28	25,97% 20	77
MATHFactor is attractive for you.	29,87% 23	0% 0	1,30% 1	11,69% 9	27,27% 21	29,87% 23	77
MATHFactor makes maths fun.	29,87% 23	0% 0	0% 0	12,99% 10	23,38% 18	33,77% 26	77
MATHFactor motivates me to learn Maths.	29,87% 23	0% 0	2,60% 2	18,18% 14	24,68% 19	24,68% 19	77
The manual of scripts and the examples on website are helpful to improving the MATHFactor presentation.	31,17% 24	0% 0	1,30% 1	23,38% 18	31,17% 24	12,99% 10	77

#	What was easy / not easy to prepare?	Datum
1	Everything we did took effort and time and it wasn't easy, but i think it was worth it and i hope to participate on projects like this one more in the future.	19.03.2014 19:08
2	We didn't do mathfactor	10.03.2014 15:19
3	the clothes was not an easy job!	05.03.2014 14:48
4	There weren't hard parts for the preparation of MATHFactor.	27.02.2014 16:30
5	It wasn't easy for me the acting	26.02.2014 22:57
6	It was not easy to create 3 doors	25.02.2014 13:47
7	Because of the way of thinking out how to present the mathematics in a fun way.	23.02.2014 23:19
8	Because of the way of thinking out how to present the mathematics in a fun way.	23.02.2014 23:15

Pre-evaluation Le-MATH competitions - students

9	It was difficult to choose a suitable interesting and not as popular topic, but the process of researching was fun	14.02.2014 22:20
10	The whole process was very easy, since i found this project to be very interesting and fun	14.02.2014 21:08
11	Finding an interesting subject which could be both presented in only 3 minutes and interesting yet mind-widening and something new even for me, so I could really present it with passion.	13.02.2014 17:28
12	/	12.02.2014 23:45
13	yes	12.02.2014 22:04
14	It was easy to chose the topic but not to write a short script due to the limit of time.	12.02.2014 20:26
15	It's easy because I love math	12.02.2014 20:21
16	is easy because I love math	12.02.2014 19:49
17	I did not know what exactly math theatre is about.	12.02.2014 19:40
18	Same as before.	12.02.2014 15:07
19	The speech was easy to prepare but submitting it was a not easy.	12.02.2014 12:30
20	It was easy to find the problem, but very hard to compress it to 3 minutes.	12.02.2014 12:05
21	The hardest part was condensing all the information in 3 minutes.	05.02.2014 20:27

11.4. Statistics and graphs regarding evaluation of audience

MATHFactor and MATHeatre Finals, April 2014

Thank you for taking time to participate in this evaluation. Please tick and fill in as appropriate:

How did you learn about the "Le-Math" project and Competition?

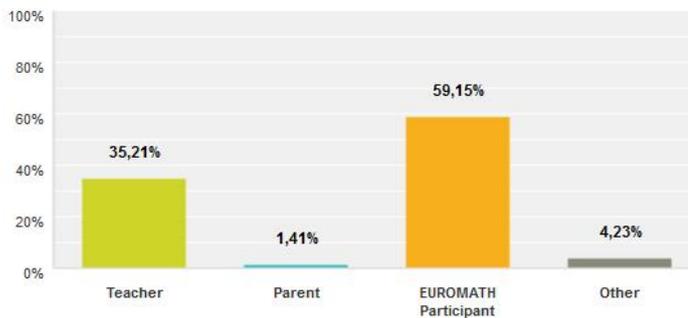
	Teacher	Parent	EUROMATH Participant	Other	
part at this final presentation of Le-Math Competition as (more options allowed).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Please, specify	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Understood the topic and the content of most of the presentations.	<input type="radio"/>				
Following the Competition, you find mathematics more interesting.	<input type="radio"/>				
It is important to invite non-EU participants to get different ideas.	<input type="radio"/>				
I can recommend the Le-Math Competition to other people.	<input type="radio"/>				
I believe that the European Union is funding such activities.	<input type="radio"/>				

Recommendations for the

future:.....

You take part at this final presentation of Le-Math Competition as (more options allowed).

Beantwortet: 71 Übersprungen: 2

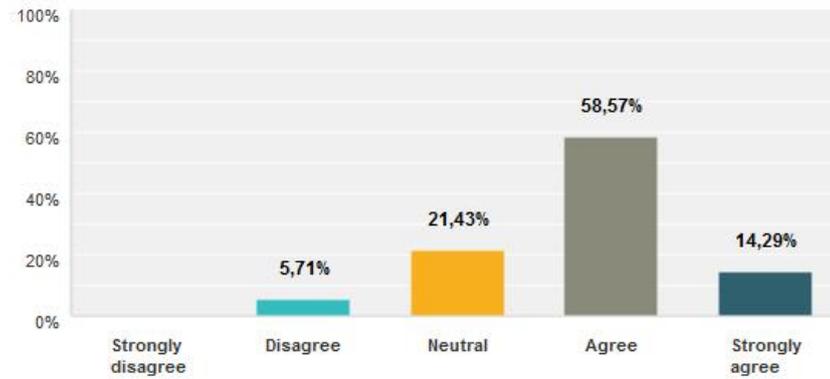


Antwortmöglichkeiten	Beantwortungen	
Teacher	35,21%	25
Parent	1,41%	1
EUROMATH Participant	59,15%	42
Other	4,23%	3

Befragte gesamt: 71

You understood the topic and the content of most of the presentations.

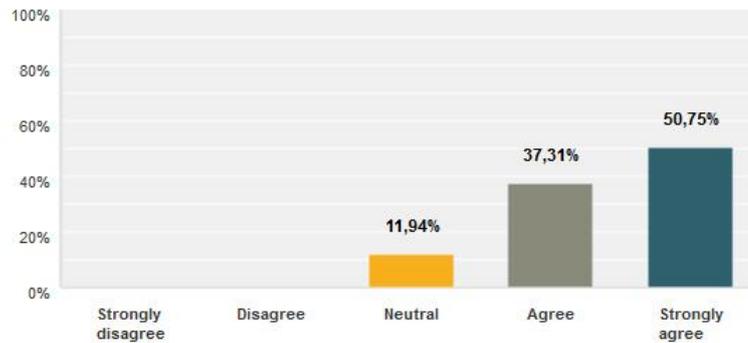
Beantwortet: 70 Übersprungen: 3



Antwortmöglichkeiten	Beantwortungen	
Strongly disagree	0,00%	0
Disagree	5,71%	4
Neutral	21,43%	15
Agree	58,57%	41
Strongly agree	14,29%	10
Gesamt		70

You will recommend the Le-Math Competition to other people.

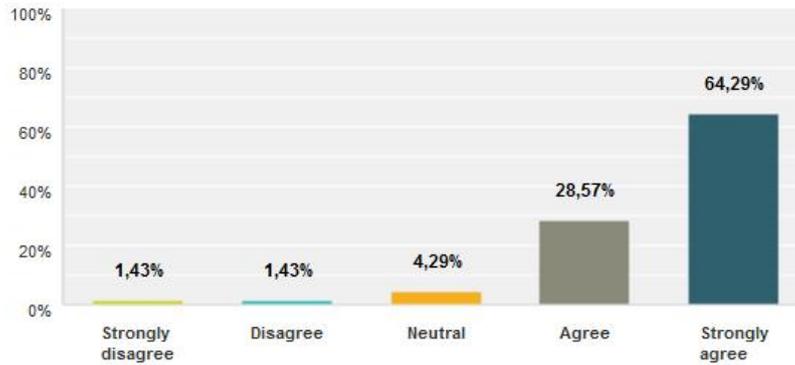
Beantwortet: 67 Übersprungen: 6



Antwortmöglichkeiten	Beantwortungen	
Strongly disagree	0,00%	0
Disagree	0,00%	0
Neutral	11,94%	8
Agree	37,31%	25
Strongly agree	50,75%	34
Gesamt		67

It was important to invite non-EU participants to get different ideas.

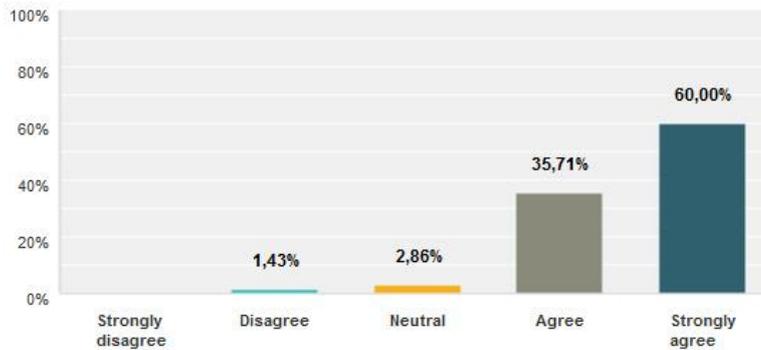
Beantwortet: 70 Übersprungen: 3



Antwortmöglichkeiten	Beantwortungen
Strongly disagree	1,43% 1
Disagree	1,43% 1
Neutral	4,29% 3
Agree	28,57% 20
Strongly agree	64,29% 45
Gesamt	70

You appreciate that the European Union is funding such activities.

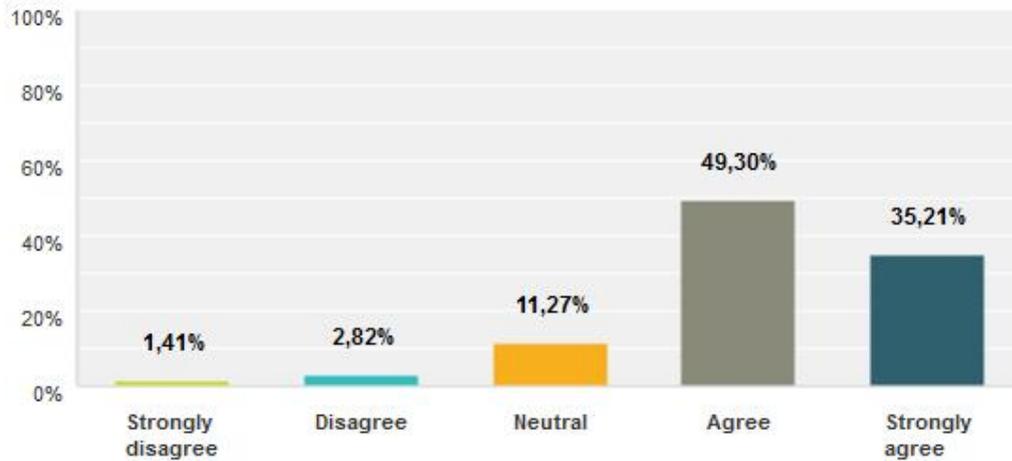
Beantwortet: 70 Übersprungen: 3



Antwortmöglichkeiten	Beantwortungen
Strongly disagree	0,00% 0
Disagree	1,43% 1
Neutral	2,86% 2
Agree	35,71% 25
Strongly agree	60,00% 42
Gesamt	70

After attending the Competition, you find mathematics more enjoyable

Beantwortet: 71 Übersprungen: 2



Antwortmöglichkeiten	Beantwortungen	
Strongly disagree	1,41%	1
Disagree	2,82%	2
Neutral	11,27%	8
Agree	49,30%	35
Strongly agree	35,21%	25
Gesamt		71

Recommendations for the future

The competition should include even more countries

More awareness of the program should be made in other areas of the world like in Africa, Asia, America and Western Europe

Please choose more people from Africa

Dont change anything

Come to Croatia

I want to see more people and I want to see a developed Euro-Math

Le Math should provide a bigger hall.

Jury members to be selected from different participating countries (at least from five countries)

More participants from other countries.

The Le-Math should have a building for the program - not a rented place!

Cyprus is developed but not enough. Also accommodation should be provided by the organizers.

More people should invited from foreign countries.

Dont change anything

Everything is wonderful, you don't need to change anything.

I applied for math-factor, but I di not make it to the final! I would appreciate if there was feedback on WHY I did not pass!

Many rather low quality presentations and quite a lot from Cyprus does strike on a suspicious concerning the way the jury selected the finalists. Many bad comments from students who feed disappointed - this should be taken into account by the organizers.

More clear of what is what on the website!

Use video projection in the background. Illustrations would be more visible.

The comments between individual competitions could be left out.

Candidates to be allowed to use power point.

Include other languages and translators because in many countries only some private schools teach in English.

Making hole in cookies doesn't help to learn math!

I like it very much

Major Disappointment: Many hours of boring presentations with the exception of MATHeatre which should have been the only ones presented. I hope, that in the future the selection of plays and presentations will follow different and more just criteria.

Keep on organizing the happening!

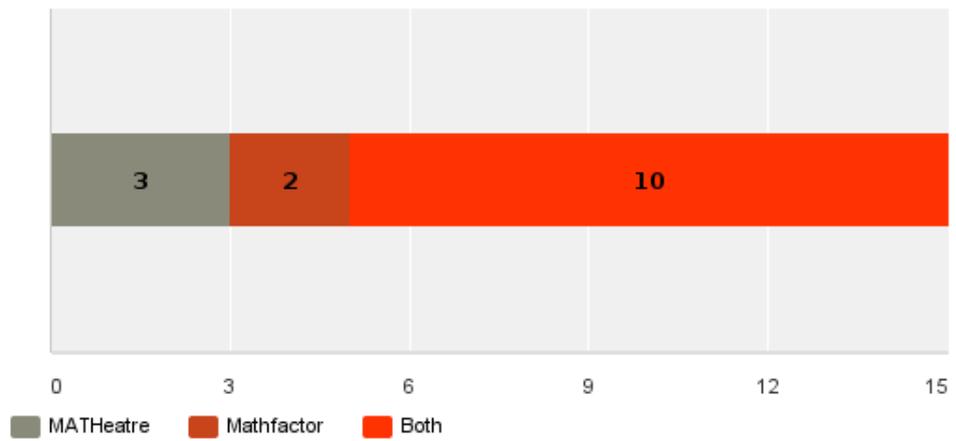
11.5. Statistics and graphs regarding evaluation of assessors

Thank you for taking time to participate in this evaluation. Please tick and fill in as appropriate:

Which part did you assess					MATHeatre <input type="radio"/>	MathFactor <input type="radio"/>
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
clude all	<input type="radio"/>					
nclude all	<input type="radio"/>					
o run	<input type="radio"/>					
h the jury decision	<input type="radio"/>					
clude all	<input type="radio"/>					
This criterion was easy to assess in MATHeatre						
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
	<input type="radio"/>					
	<input type="radio"/>					
	<input type="radio"/>					
	<input type="radio"/>					
This criterion was easy to assess in MathFactor						
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
	<input type="radio"/>					
	<input type="radio"/>					
	<input type="radio"/>					
Additional comments:						

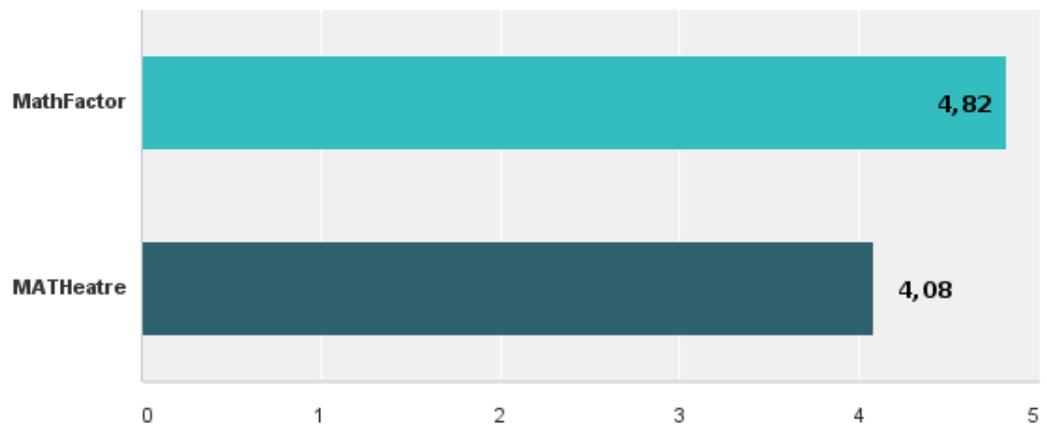
Q1 Which part did you assess

Beantwortet: 13 Übersprungen: 0



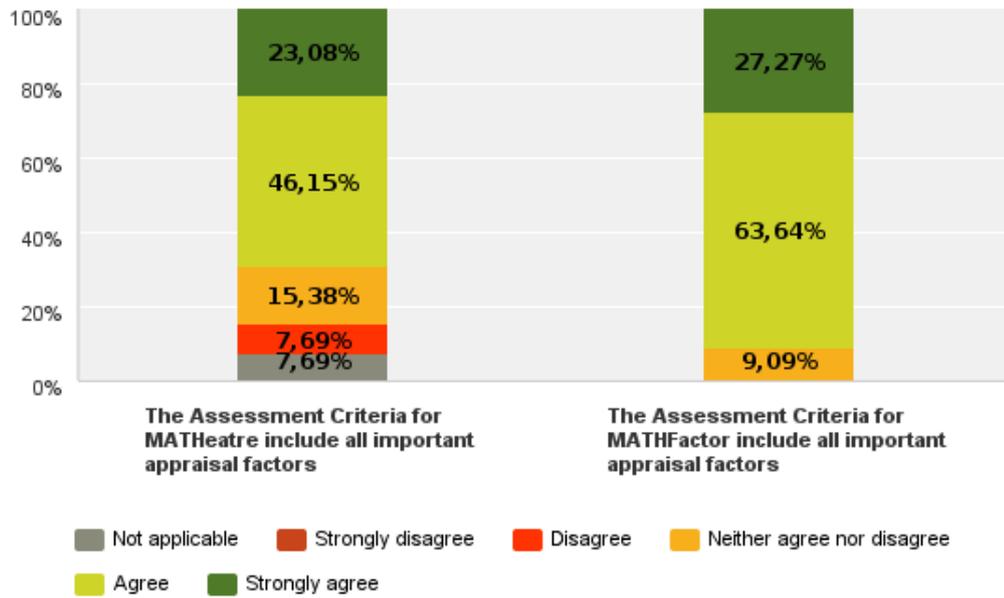
Q2 How many submissions did you assess

Beantwortet: 13 Übersprungen: 0



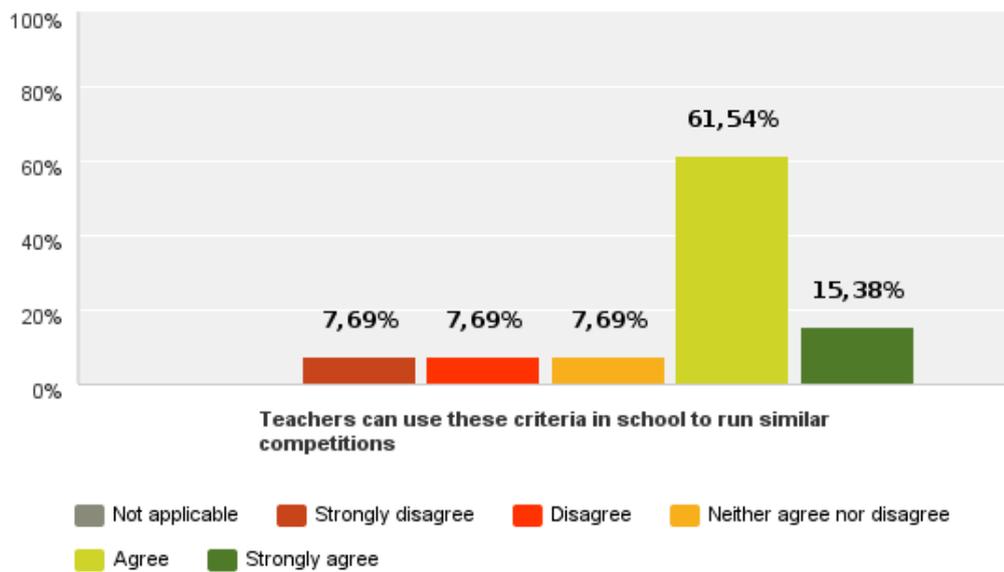
Q3 Criteria

Beantwortet: 13 Übersprungen: 0



Q4 Use of there criteria

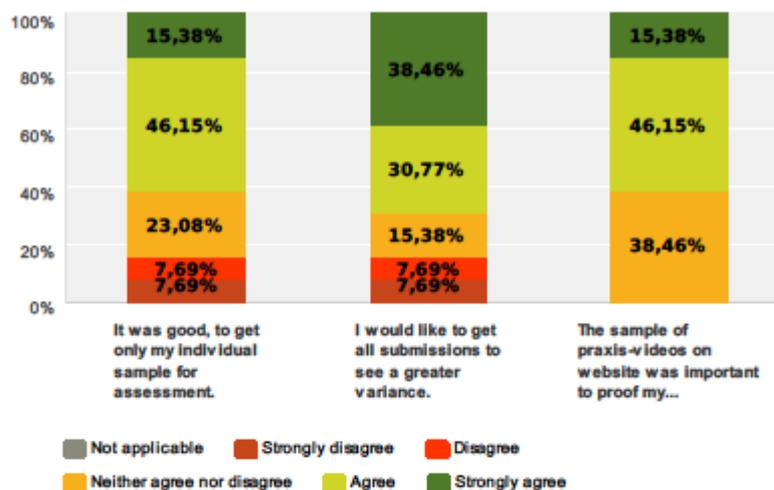
Beantwortet: 13 Übersprungen: 0



Le-MATH competitions - Assessment

Q5 The sample for this online assessment

Beantwortet: 13 Übersprungen: 0

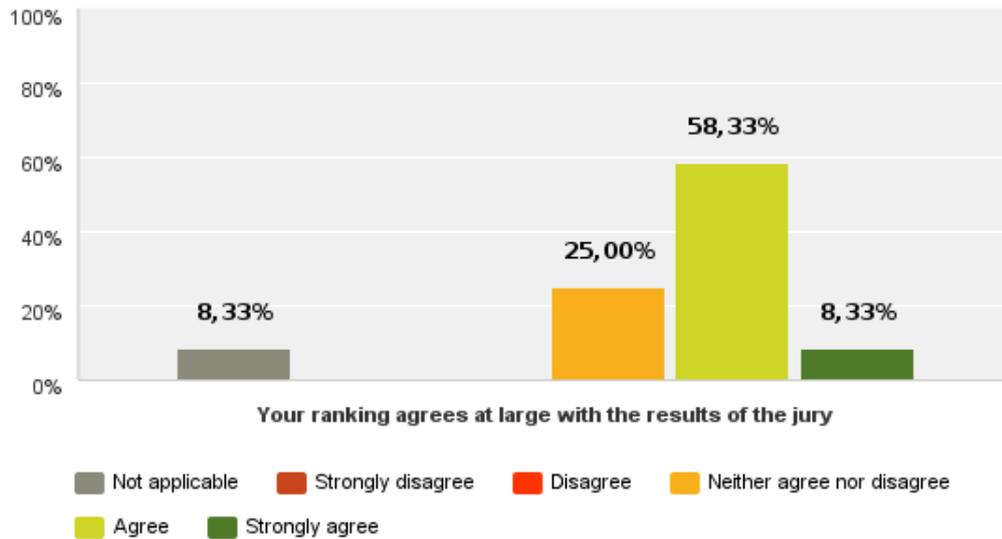


	Not applicable	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Gesamt
It was good, to get only my individual sample for assessment.	0% 0	7,69% 1	7,69% 1	23,08% 3	46,15% 6	15,38% 2	13
I would like to get all submissions to see a greater variance.	0% 0	7,69% 1	7,69% 1	15,38% 2	30,77% 4	38,46% 5	13
The sample of praxis-videos on website was important to proof my assessment strategy	0% 0	0% 0	0% 0	38,46% 5	46,15% 6	15,38% 2	13

#	Comments	Datum
1	replace proof with prove	18.03.2014 11:18
2	I feel that a pre-evaluation training of the assessors would help to obtain a consistency and common approaches	11.03.2014 15:56

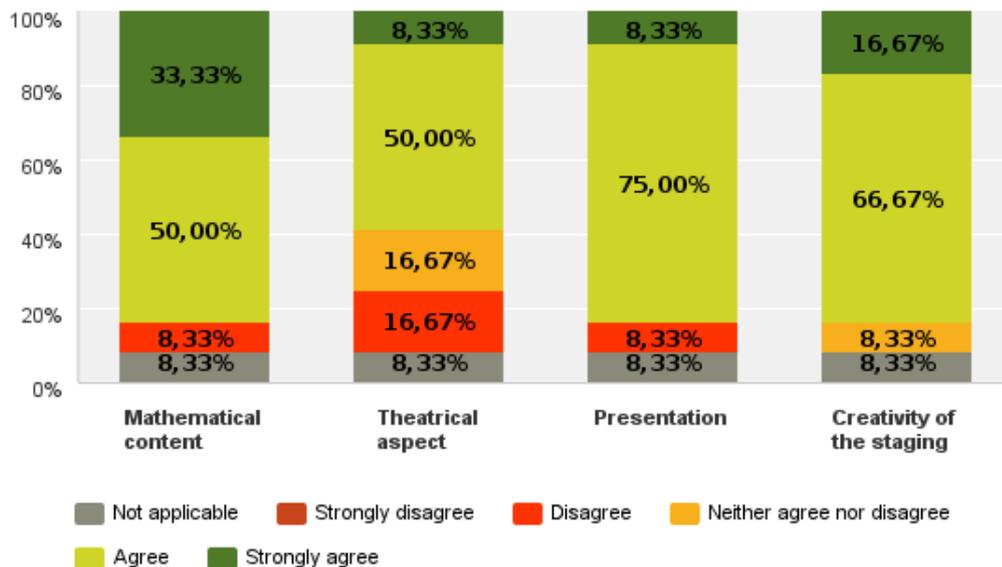
Q6 The coherence of your assessment with the jury decision (after getting the results!)

Beantwortet: 12 Übersprungen: 1



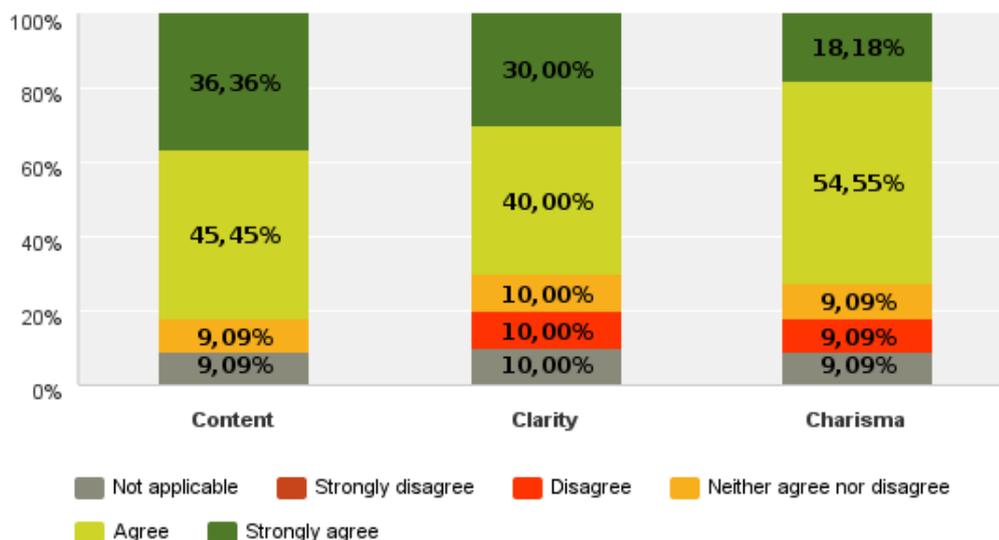
Q8 This criterion was easy to assess in MATHeatre

Beantwortet: 12 Übersprungen: 1



Q9 This criterion was easy to assess in MahFactor

Beantwortet: 11 Übersprungen: 2



Le-MATH competitions - Assessment

Q10 What did you like most being a member of jury?

Beantwortet: 11 Übersprungen: 2

#	Beantwortungen	Datum
1	Discover pupil's creativity	20.03.2014 21:00
2	I liked to see different practices	20.03.2014 16:17
3	discover new ideas, new presentations	18.03.2014 18:28
4	curiosity	18.03.2014 11:56
5	to be able to see so much talent in young kids	18.03.2014 11:26
6	To be member of the jury made me happy, because it feel like help to implement the project, actively participate in all activities. I love theater and it was a challenge for me to watch and juried theater with mathematical topics.. I hope my decision was okt and the best to win in the final phase. of the competition. .	16.03.2014 06:31
7	To see other assesment and all videos.	14.03.2014 12:20
8	To be able to watch the students perform and give the talented ones a chance to make it to the finals.	11.03.2014 16:40
9	The opportunity to observe innovative and original approaches by the students	11.03.2014 15:57
10	I liked the creativity of some children.	11.03.2014 15:30
11	I enjoyed to see the practical result of our activity	11.03.2014 12:13

11.5. Statistics and graphs regarding dissemination of competition

Questionnaire partnership – dissemination:

The proposal requires an internal evaluation regarding dissemination of invitation to the conference and the success.

Thank you for taking time to participate in this evaluation. Please tick and fill in as appropriate:

You used these tools for Dissemination (more ticks allowed)

Brochure / Flyer	<input type="checkbox"/>	Conference Web Site	<input type="checkbox"/>	eTwinning	<input type="checkbox"/>
During meetings and conferences	<input type="checkbox"/>	Facebook	<input type="checkbox"/>	E-mail/Newsletter	<input type="checkbox"/>
Website of Le-Math	<input type="checkbox"/>	Twitter	<input type="checkbox"/>	Presentations in conferences	<input type="checkbox"/>
Other (Please specify):					

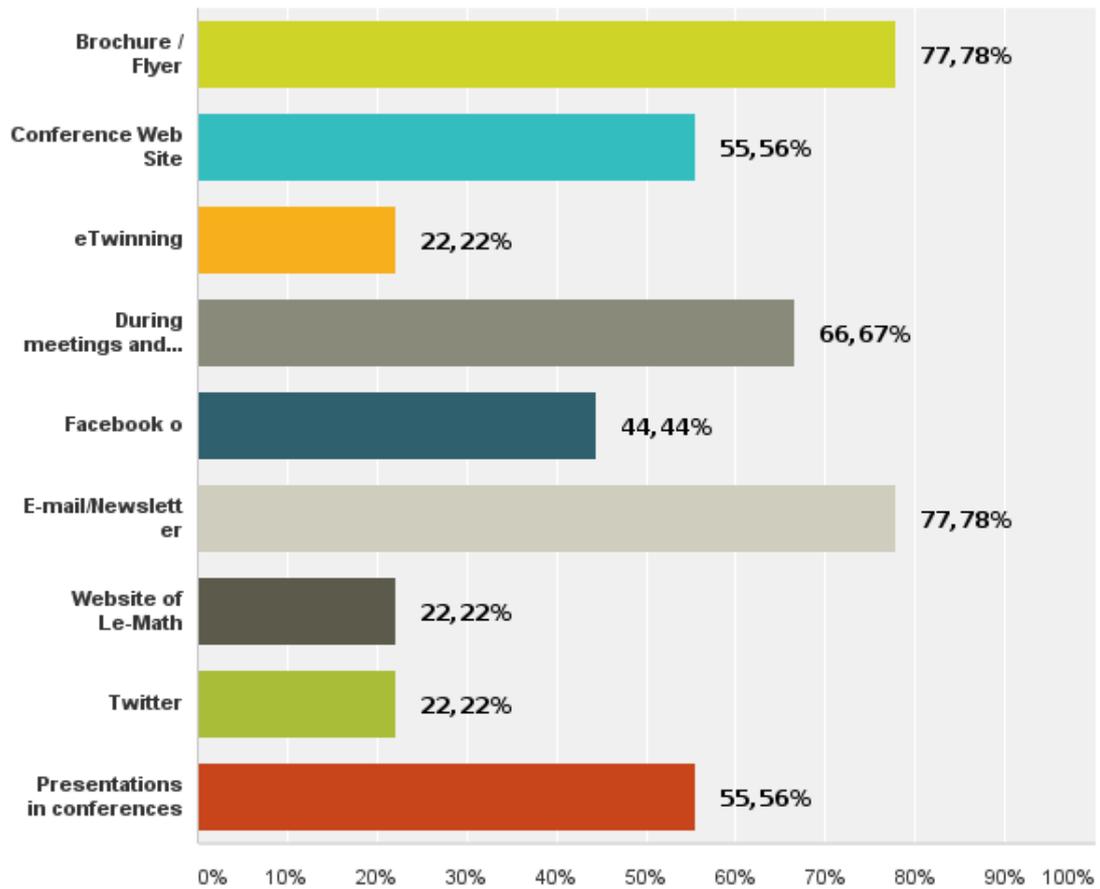
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
We (your institution) disseminated the LeMath competition national.	<input type="radio"/>				
We (your institution) disseminated the LeMath competition in some European countries.	<input type="radio"/>				
We disseminated the Le-Math competition to non-EU countries.	<input type="radio"/>				
It was interesting and innovative to invite non-EU participants.	<input type="radio"/>				
Our dissemination method was successful.	<input type="radio"/>				
We got successful feedback from schools.	<input type="radio"/>				
We got applicants for LE-MATH competition from our country.	<input type="radio"/>				
The dissemination of LE-Math Competition (by the partnership) fulfils our expectations.	<input type="radio"/>				
We expect participants from our country to take part the LeMath in-service training course in France or Cyprus 2014?	<input type="radio"/>				

Additional comments:

Thank you for completing this questionnaire? – Helmut Loidl, Internal Evaluation

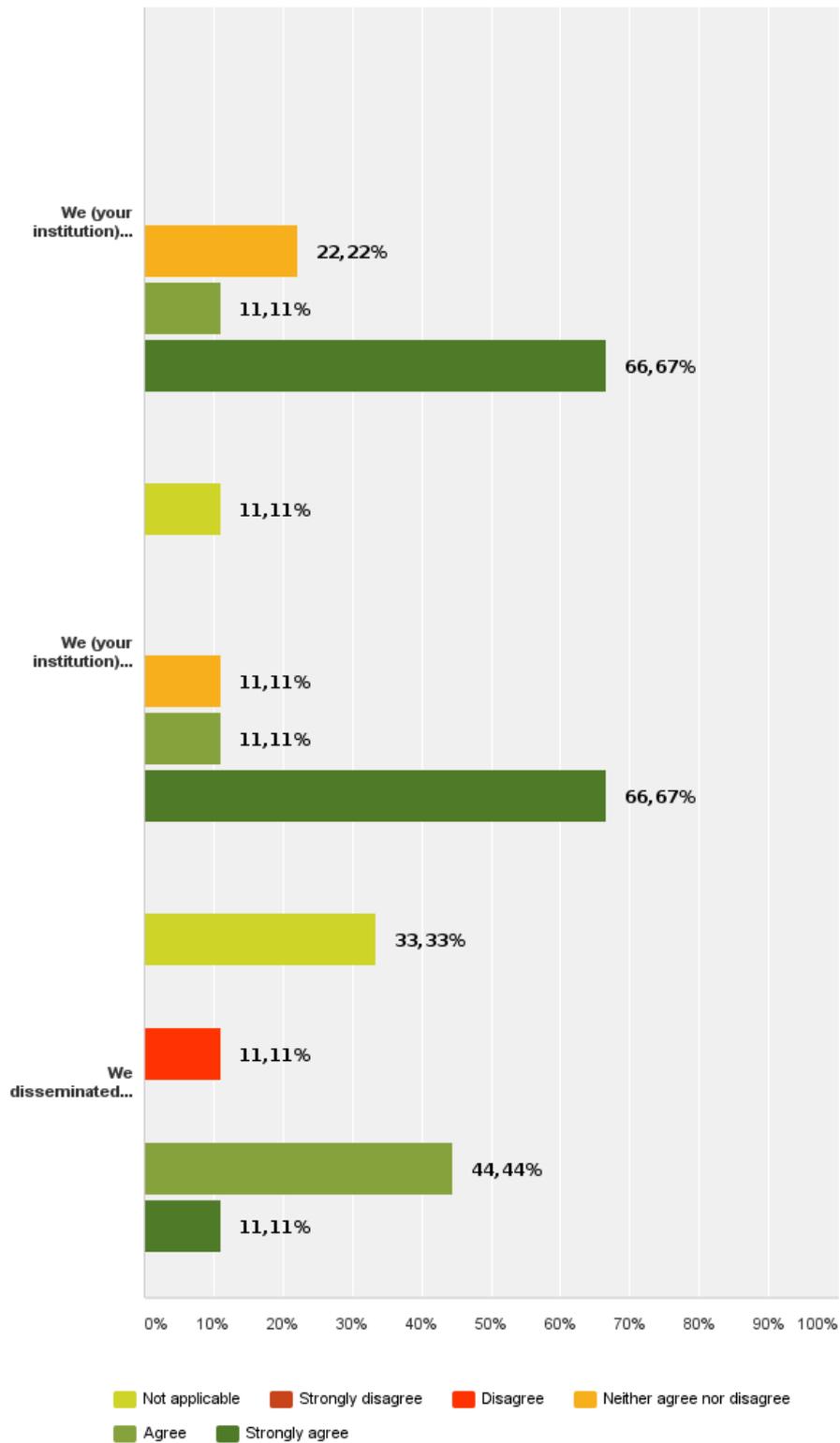
Q1 You used these tools for Dissemination (more ticks allowed)

Beantwortet: 9 Übersprungen: 0



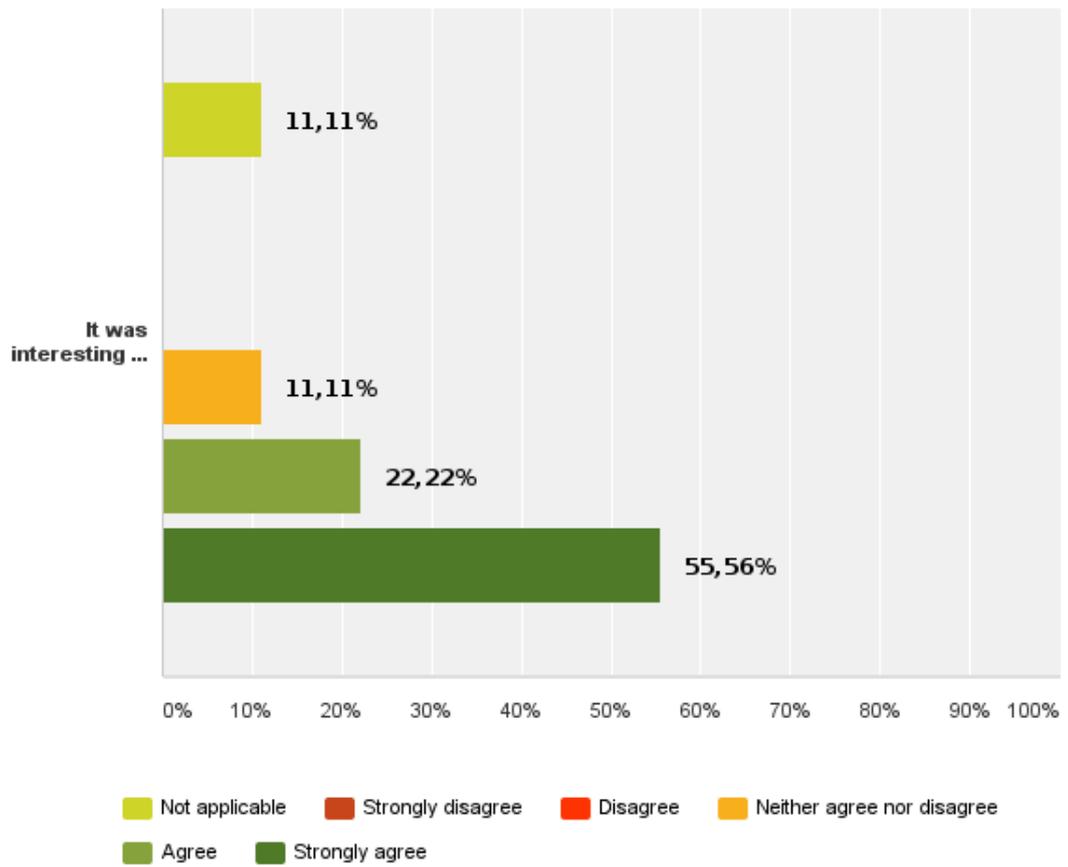
Q2 Dissemination

Beantwortet: 9 Übersprungen: 0



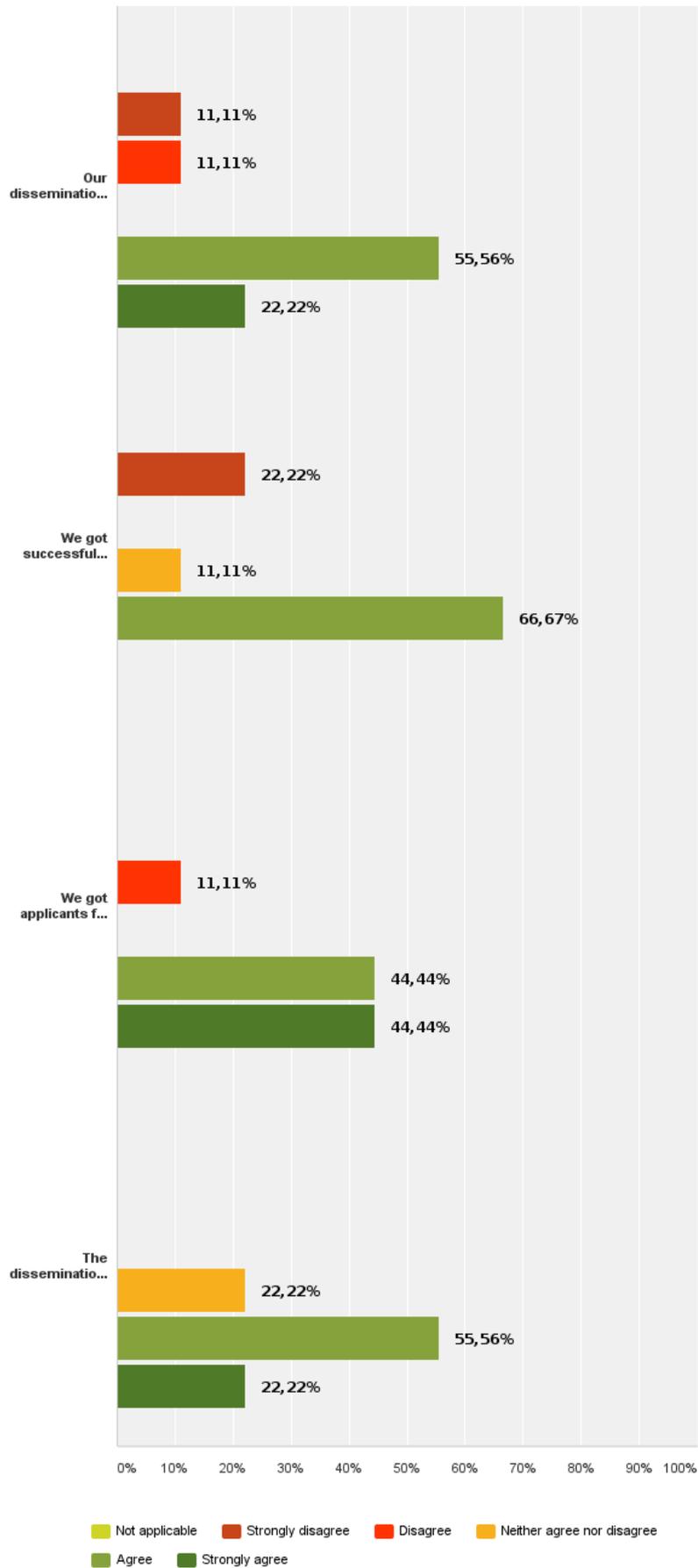
Q3 Dissemination

Beantwortet: 9 Übersprungen: 0



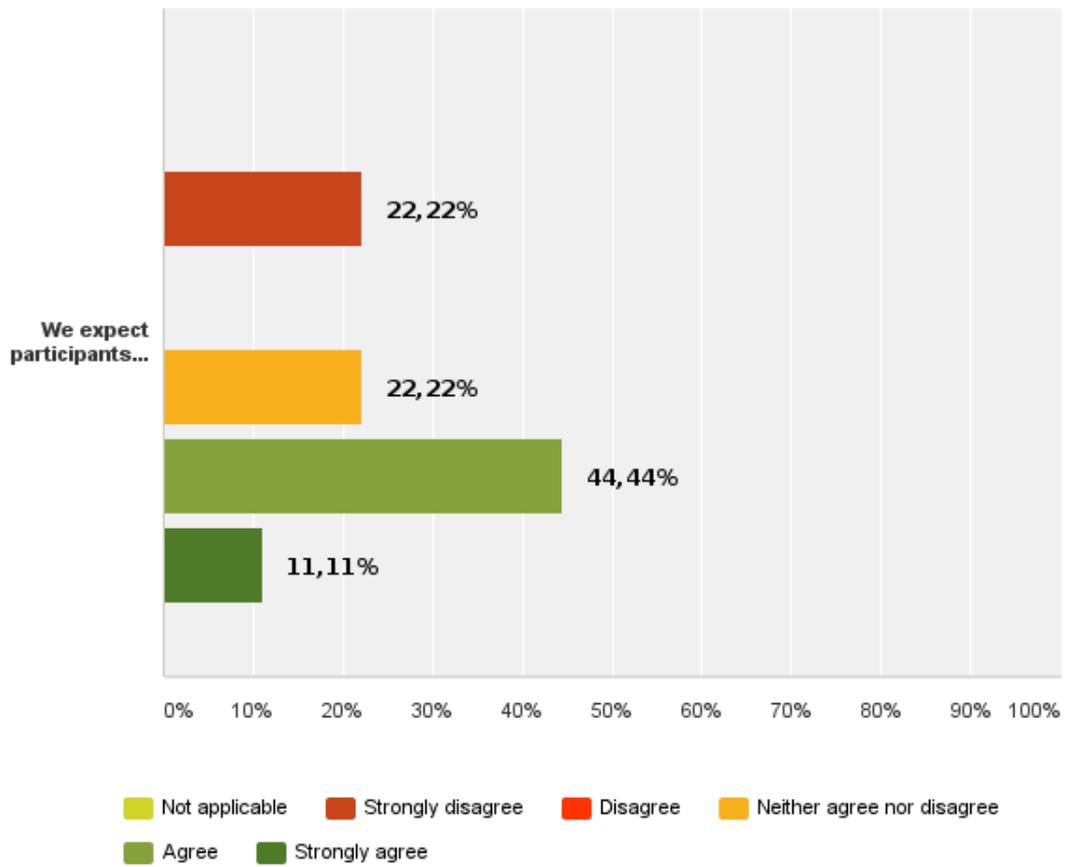
Q4 Dissemination

Beantwortet: 9 Übersprungen: 0



Q5 Dissemination

Beantwortet: 9 Übersprungen: 0



11.4. Protocol of final interviews at competition

3rd Prize Age 9-13

MATHFactor Title
Similar Triangles

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

➤ **What's your feeling now?**

Happy to be here, we will do it well and we have worked hard. Theodora participated already last year in the Cyprus Science Factor and got the 4th place.

➤ **Did you expect to be here in Cyprus when you started working on your presentation?**

Yes definitely! We have a good theme and Theodora has a talent!

➤ **Who got the idea**

- **to take part:** together, in the classroom many things of the ancient Greece were presented
- **of the content you present:** together under the guidance of the teacher
- **of the term:** (name of the presentation)- the teacher presented different topics and this one was selected by the student for the purpose of this competition.

➤ **How did you learn about the possibility to take part in this competition?**

Information received in the school, Theodora participated last year in the summer school and was informed about the competition.

➤ **Did you like the form of the official announcement? What would you suggest as an improvement?**

It was clear.

➤ **The invitation for the final competition was OK for you? What would you suggest as an improvement?**

It was clear.

➤ **Did you have enough time to prepare your presentation until the closing date?**

Yes, there was enough time.

➤ **Do you like competitions?**

Theodora likes competitions! She has participated in different competitions (Science Factor).

➤ **Do you like mathematic more before ore the same?**

At the beginning Theodora was a bit shy to present but she loves maths. She likes maths more now.

➤ **Describe the mathematical content shortly?**

Similar triangles. Theodora was at the beach with her friends and they saw a boat. In order to impress her friends Theodora said that could count the distance from the coast to the boat based on the theory of similar triangles.

➤ **What else than mathematic did you learn?**

Improvement of English with the help of the teacher of English language.

➤ **Did you consult the guidelines at the beginning?**

- If yes, were they helpful? **Very helpful** and try to be in line with the guidelines.
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?** **Yes**
- **Was the manual of scripts (Theatre) / the video sample helpful for you?** **Yes, but they have seen more** videos to get ready and try to be innovative and original.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?** They tried to be in line and they could manage to be in **3 minutes**.
- **What do you think about dividing participants in 2 age-groups?**
They find the division **good** because last year Theodora participated in a competition with no division among different age groups and this was difficult.
However, it would be better to have **3 categories**:
Elementary school group
Secondary school group
Upper secondary school group
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
It's **better in front of the people** at the final competition because you try to make the audience to understand
- **Do you find the prize for the winner attractive?**
The prize is a motivation but not the main reason to participate. Theodora would participate even without prize just for the experience.

MATHFactor Title
Euro banknotes

We congratulate you are under the finalists of MATHeatre-MATHfactor.

➤ **What's your feeling now?**

➤ I am really nervous. I was surprised to be in the finals. I am delighted but at the same time nervous!

➤ **Did you expect to be here in Cyprus when you started working on your presentation?**

No! I was in a competition before and was in 12th place. Teacher: Participation is more important than victory! Student: This is my attitude too!

➤ **Who got the idea**

- to take part

- My teacher

- of the content you present

- My teacher

- of the term: (name of the presentation)

- Again the teacher. I was working with my teacher, some of my classmates helped by being critics. I used the classmates as audience, made them involved by making calculations. All school was involved and excited, the 7th graders made a big banknote for the presentation.

➤ **How did you learn about the possibility to take part in this competition?**

S- My teacher told me. T- The faculty of education told me. We have a contract with them so they give us a lot of information.

➤ **Did you like the form of the official announcement?**

T- It was nice. What would you suggest as an improvement? T-Not many saw it. The information another way. Was on the website of Czech Educational Department?

➤ **The invitation for the final competition was OK for you? What would you suggest as an improvement?**

Yes it was good

➤ **Did you have enough time to prepare your presentation until the closing date?**

Yes

➤ **Do you like competitions?**

Yes- I have been in English competition before.

➤ **Do you like mathematic more before or the same?**

➤ Mathematics is interesting now, before I just counted. Now it is helpful and makes sense!

➤ **Describe the mathematical content shortly?**

It's about how to make sure if your banknote is real or fake.

➤ **What else than mathematic did you learn?**

Even if something looks boring it doesn't have to be boring!

➤ **Did you consult the guidelines at the beginning?**

Not much. I learnt about the guidelines when I submitted the presentation.

- **If no, why?** Were you aware about the guidelines? I didn't realize. We just took the info from the poster. We didn't know there was more info. **It should have been noted on the poster.**

- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?** **I didn't read any methodology. Info on poster.**
- **Was the manual of scripts (Theatre) / the video sample helpful for you?** **We saw them today. I don't mind I didn't see them- I want to be creative.**
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?** On the **poster** I found some info.
- **What do you think about dividing participants in 2 age-groups? T-****It wouldn't work any other way.** It's impossible to compare different age groups. (10-14, 15-18 in our country) The content can be a problem for the younger students. S- the system is ok. You can have an 18 year old with great English, but a 14 year old can have a great show.
- **What's the difference for you between part 1 (online) and the final presentation in this competition?** Big difference. I don't know what to expect tomorrow, but I am afraid to do something embarrassing tomorrow. I think it will be **worse to present before an audience.**
- **Do you find the prize for the winner attractive?**
For me **the prize was to go to Cyprus.** I wanted to see the sea, I have never been to the sea only seen it on TV.

MATHFactor Title
The area of the circle

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- *What's your feeling now?*
Very **happy**, a little bit **stressed!**
- *Did you expect to be here in Cyprus when you started working on your presentation?*
Yes, the presentation is good enough.
- *Who got the idea*
 - **to take part:** the **mom** who is math teacher
 - of the content you present: **50% from mom**, and 50% from the student
 - **of the term:** (name of the presentation): mom
- *How did you learn about the possibility to take part in this competition?*
Mom is a math teacher and she is very much involved and interested in math-factor and math-theatre. She was **consulting often the Le-Math project website**. The mom is watching all the relevant videos of math-factor.
The students at her school like very much the idea of math-factor-theatre and they are working in the afternoons at schools on maths topics!
- *Did you like the form of the official announcement? What would you suggest as an improvement?*
The announcement was good but some details were missing, so they had to call several times for additional information/clarifications.
Practical hints were missing, like **how to send the videos**.
- *The invitation for the final competition was OK for you? What would you suggest as an improvement?*
It was OK but he received an invitation with wrong name.
- *Did you have enough time to prepare your presentation until the closing date?*
Not enough time to prepare for the video, but enough time to prepare for the final. He prepared his presentation at home with his parents.
- *Do you like competitions?*
He likes competitions as they are interesting. **Football, music, literature (a poem of him was awarded).** **Competitions of the Cyprus Mathematical Society.**
- *Do you like mathematic more before or the same?*
Yes, because he gets closer to maths. Study maths more often, invest more time in maths.
- *Describe the mathematical content shortly?*
How to prove the area of the circle .
- *What else than mathematic did you learn?*
Experience, and confirm what Einstein said: **when you have knowledge of something you should be able to present to your grand mother in a way that she can understand it.**

- **Did you consult the guidelines at the beginning?**
 - If yes, were they helpful? **Yes, they were helpful** but most important for them was to have an original idea.
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?**

Yes, the mom was following everything that was published since 2010 regarding math-factor and math theatre.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**

Yes, the video samples were helpful as they gave the idea about how it would be at the finals when he would present his presentation.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**

Yes, and there were followed very carefully.
- **What do you think about dividing participants in 2 age-groups?**

It is very fair. However, it would be better to have as many age groups categories as possible.
It is unfair for a 14 years old to compete with a 18 years old.
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**

Harder to show a presentation **in front of the public.**
- **Do you find the prize for the winner attractive?**

It is **very attractive.** Many of the participants find this very attractive.
- **We have invited students from non-European countries. What do you think?**

It is fair, all students have the right to participate, and it is better to listen ideas from all over the world.

MATHFactor Title
Fractals and Dragons

Interviews – questionnaire!

We congratulate you are under the finalists of MATHfactor.

- **What's your feeling now?**
It's **amazing**; I was **pleased** to be under the finalists.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
I really wanted to come here, I was in **Gothenburg**, and I like this competition,
- **Who got the idea**
 - **to take part**: It was **my (Students) decision** _ I like the presentations in Gothenburg.
 - **of the content you present**
It was my idea, part of my previous presentation. I want to impress people with topic factors.
 - **of the term**: Is came from my **teacher**. She guided me in one way – I did it for my one, but she guided me.
- **How did you learn about the possibility to take part in this competition?**
In **Gothenburg** I did hear about le-math and my **teacher** told me about this competition.
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
The **teacher** got it, I never have seen ist.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
It was **ok and helpful** for me to come here.
- **Did you have enough time to prepare your presentation until the closing date?**
I started to work after registering, there was **enough time**.
- **Do you like competitions?**
I participate in **math** and **literature** competitions.
- **Do you like mathematic more before ore the same?**
Now I like it more; I was impressed, that mathematic is everywhere.
- **Describe the mathematical content shortly?**
I would show the first modelling fractals and show that fractals are everywhere.
- **What else than mathematic did you learn?**
I learn about **culture of Cyprus**, and to **make presentations**, **lot of new friends**, **improving the English skills**.
- **Did you consult the guidelines at the beginning? Yes all of them**
 - If yes, were they helpful? **Yes** helpful
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student? **Teacher not here****
- **Was the manual of scripts (Theatre) / the video sample helpful for you? **Helpful** yes**

- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
Yes
- **What do you think about dividing participants in 2 age-groups?**
It's **good**, the first group do it in a more childish group the other are more serious.
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
The **camera makes me a little bit embarrass**, but **we should be able to do both**. You should be more concentrated if you speak in front of teachers.
- **Do you find the prize for the winner attractive?**
very, attractive, The whole experience is attractive but **the prize stimulates me**.

MATHFactor Title

Diophantus

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
Very **happy** but also little **nervous** for the final competition.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
Katerina was **not sure** that the presentation was good enough to be among the finalists, although she found her topic very exciting.
- **Who got the idea**
 - **to take part:** The idea was **presented by Mr Lambrou** and then the **teacher** of the school (Mr Sarafis) got the decision to take part
 - **of the content you present:** **Based on a book of a school counsellor** (Mr Thomaides) who's book has received an award from the Academy of Athens
 - **of the term:** (name of the presentation): from the above mentioned book
- **How did you learn about the possibility to take part in this competition?**
From the **teacher**
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
ok
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
ok
- **Did you have enough time to prepare your presentation until the closing date?**
Yes, Katerina was **ok with the time**. She **prepared in at home** when she had free time.
- **Do you like competitions?**
Yes, all kind of **competitions around science** (biology, chemistry, physics)
- **Do you like mathematic more before ore the same?**
She loved maths already so much so there is not really a difference.
- **Describe the mathematical content shortly?**
About a Greek mathematician, Diophantus, who gives the basics of maths. Mathematicians after Diophantus based their theory on Diophantus basics.
- **What else than mathematic did you learn?**
How **to make people** who are not from the same country **to understand the math topic**. **Meet and see other types of thinking.**
- **Did you consult the guidelines at the beginning?**
 - **If yes, were they helpful?** Yes, as it was the **first experience** of the school in this kind of competition, they **looked every available source** of information regarding this competition
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?**
Yes, before they did anything they consulted the available material.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
Yes, very helpful

- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
Her first **presentation was a bit longer** but finally she managed to have it in 3 minutes.
- **What do you think about dividing participants in 2 age-groups?**
It is **more fair** for the younger students. The younger do not know all what older students know on maths, and also their language skills in English are not the same as of the older students. **They would like to have 3 age groups (elementary, secondary, upper secondary).**
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
Pressure in front of the audience as they **cannot stop, make a correction and then continue**. In camera only the eyes of the cameraman, but thousands eyes in front of the public!
- **Do you find the prize for the winner attractive?**
Yes. But she participated as **she wanted to take part and see how good she is**.
- **We have invited students from non-European countries. What do you think?**
It is better that is not restricted in Europeans as it is interested in see how other people think.

MATHFactor Title
Infinite chocolate

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
Happy and pleased to be here, to feel the atmosphere of these conferences and competitions of world rank.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
No as she had booked a holiday but then she cancelled it, as she thought being here was more important.
- **Who got the idea**
 - to take part: the teacher
 - of the content you present: looking for life examples, and then she had a fight with her mom for eating lots of chocolate and spend money on it
 - of the term: (name of the presentation): what is infinity
- **How did you learn about the possibility to take part in this competition?**
Math teacher visited a math seminar in Agros, Cyprus, and heard about this competition. Their gymnasium is one of the best in Slovenia, so she transferred the idea to the gymnasium and there were many ideas coming from the students about potential topics.
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Yes, of course.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
Yes, it was informative enough and contained everything.
- **Did you have enough time to prepare your presentation until the closing date?**
Yes, there was enough time as the teacher informed the students about the competition before the announcement.
The student worked on her presentation mainly as homework and then presented it in the classroom and the classmates liked it.
- **Do you like competitions?**
Yes. Poetry, dance competitions, literature, chemistry....
- **Do you like mathematic more before ore the same?**
She likes it more because she learned very interested things. She started to see the little things in maths that are not taught at school when they do maths.
- **Describe the mathematical content shortly?**
Mixture how to eat the most in the longest period of time.
- **What else than mathematic did you learn?**
Art of performing before an audience, how to make a square of chocolate!
- **Did you consult the guidelines at the beginning?**
 - If yes, were they helpful? Yes it was helpful

- *If no, why? Were you aware about the guidelines?*
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?**
Yes it was helpful.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
Yes the student saw the videos but decided to not change anything in her presentation.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
Yes, it is not hard to follow.
- **What do you think about dividing participants in 2 age-groups?**
*It would be better to divide them in **three age groups**, one of which would be for the age of 17-18 years old (according to the teacher), or 16-18 years old (according to the students).*
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
It is horrible to talk in front of the camera! She prefers to talk to the live audience!
- **Do you find the prize for the winner attractive?**
Of course. But coming to Cyprus is priceless!
- **We have invited students from non-European countries. What do you think?**
*Great to meet other cultures. **The bigger the competition the greater it is. Get different points of view.***

MATHFactor Title
Diffie-Hellman Key Exchange

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
I am **amazed** that I even got here. I never travelled really and **this is my longest trip** ever.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
To be honest **no**. **It sounded like a dream** and it came true.
- **Who got the idea**
 - **to take part** – My **professor** told me
 - **of the content you present** – S- **I am a programmer** and I **was looking for a way to make my app more secure and got my idea from that**
 - of the term: (name of the presentation) I **came up with** it.
- **How did you learn about the possibility to take part in this competition?**
One day in Math class my **teacher** gave me the **prospect** and I said yes
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Yes, our school is in another Comenius project and when I saw your announcement I thought about David and that he would be perfect. **I listened to Dr Makrides in Croatia** last year.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?** Yes. **The e-mail was thorough.**
- **Did you have enough time to prepare your presentation until the closing date?**
More than enough. I had holidays before the conference so I had a lot of time to prepare.
- **Do you like competitions?**
Yes, but I really don't like to talk in front of a lot of people but I will manage. I have been in competitions before, **Physics and computer science.**
- **Do you like mathematic more before or the same?**
I always liked it but **this made it practical**
- **Describe the mathematical content shortly?**
It allows two parties to exchange info over an insecure channel
- **What else than mathematic did you learn?**
Computer science, cryptography?
- **Did you consult the guidelines at the beginning? Yes**
 - If yes, were they helpful? **Yes they were**
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?**
Yes, to see how to prepare.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
Yes, the **videos were the most helpful** for me. To see how others did it

- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
3 minutes **seemed short** to explain such a complex problem.
- **What do you think about dividing participants in 2 age-groups?**
S- very good, the older groups have different themes (context)
T- the age groups are ok as they are, the higher group is high school in Croatia so **it works for us**
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
I don't know that yet. I think it will be **harder to do it in front** of an audience.
- **Do you find the prize for the winner attractive?**
Very! **The prize is really to be here.**
- **We have invited students from non-European countries. What do you think about this?**
I think it's great. The more people the better. More competition for me but it is great!
T- It's great to **meet people from other cultures** and maybe they will **make new friends.**

MATHFactor Title

Monty Hall Paradox

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
I can't explain it. I want to say thank you to the people who helped me, my teacher and my father who helped me create my idea.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
There are so many people so I thought maybe I wouldn't be chosen. But my idea is fascinating
- **Who got the idea**
 - **to take part** *The teacher suggested it and the student said he was interested.*
 - **of the content you present** *T- suggested the area S- decided the topic*
 - **of the term:** (name of the presentation) *Student and his sister*
- **How did you learn about the possibility to take part in this competition?**
Teacher told me
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Yes. I checked the website and it looked inviting.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement? Of course, it was excellent. Everything I needed was there.**
- **Did you have enough time to prepare your presentation until the closing date?**
No problem at all. I worked mostly at home. I presented the video in class.
- **Do you like competitions?**
I do sports (paintball for the Cyprus team) and many other things.
- **Do you like mathematic more before ore the same?**
A lot of problems are really tricky and unusual. They need to be explained, these problems need a lot of explanation. I like it more because I want to find tricky problems to explain, for example I want to take part in the Olympics now. More interested in school mathematics too.
- **Describe the mathematical content shortly?**
3 doors, main tricky thing is when people choose the door they shall always changing their mind and chose another door.
- **What else than mathematic did you learn?**
How to present a really tricky idea. Make it more clear and make it interesting. Make people laugh. Make people happy through mathematics.
- **Did you consult the guidelines at the beginning?**
 - *If yes, were they helpful? Yes. We read everything and they were helpful.*
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student? I haven't read it to be honest.**
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
I saw some of them to see how I should make my presentation. It was helpful.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**

Time was a problem because I need more time to present my problem. You need to explain it slowly because it is difficult. T- Allowing some audio-visual and 5 minutes. The students need some time to settle down and then making a great presentation.

➤ **What do you think about dividing participants in 2 age-groups?**

T- The younger group could do 3 min and the older 5, because the problems are more complex. It is good to divide the students, to make them more comfortable in their age group.

S- no problem with the groups

➤ **What's the difference for you between part 1 (online) and the final presentation in this competition?**

I might be a little bit nervous in front of the audience but it doesn't really matter to me. The camera was easier, I was in my home. Everything was excellent.

➤ **We have invited students from non-European countries. What do you think about this?**

T- Conferences should be open to all. The more the better. No problem to invite others. S- It's a perfect idea, communicate with other cultures, exchange ideas. I only see positive sides.

New ideas, other ideas on teaching.

➤ **Do you find the prize for the winner attractive?**

I am ok, but it doesn't really matter.

MATHFactor Title
Pigeonhole Principle

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
I feel excited. It is an opportunity for me. I feel proud because I tried and I got it!
- **Did you expect to be here in Cyprus when you started working on your presentation?**
I wasn't sure. I didn't know what to expect from others. My hope was to get in.
- **Who got the idea**
 - **to take part:** I heard about MathFactor in my school. There was an announcement and I went to my teacher.
 - of the content you present: me (the student)
 - of the term: (name of the presentation): me (the student)
- **How did you learn about the possibility to take part in this competition?**
My teacher/school
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
It was good
- **Did you have enough time to prepare your presentation until the closing date?**
I was a little late, because I found out late but it was ok. I worked at home and it was interesting.
- **Do you like competitions?**
Yes. Speaking, dancing competitions. Math-puzzles etc
- **Do you like mathematic more before ore the same?**
I find it very interesting in many ways. I liked it before, but now I know there are many more topics
- **Describe the mathematical content shortly?**
A principle that means you cannot put a bigger amount in smaller boxes. Algorithms to make it easier and smaller.
- **What else than mathematic did you learn?**
Computing (algorithms)
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
Yes. It was helpful, made my topic more specific and how to make my presentation.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
The rules made it easier, I knew what was expected.
- **What do you think about dividing participants in 2 age-groups?**
I like it. Same age as me, 14-18 is not a problem.
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
The audience will be the difference. But it's better to have them because I can interact/communicate with them.
- **We have invited students from non-European countries. What do you think about this?**

I think it is great. We can learn from each other, it unites people. Bring teenagers together from many other countries.

➤ ***Do you find the prize for the winner attractive?***

Yes. It is not about the prize. More about the certificate for my CV (university)

MATHFactor Title

Sweet Mathematics

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
*I feel **great**. I am excited and I am looking forward to my presentation.*
- **Did you expect to be here in Cyprus when you started working on your presentation?**
*I **worked hard** and I was not expecting but hoping.*
- **Who got the idea**
 - **to take part** **My teacher asked the class** who wanted to take part and I said I wanted to, some other friends did too.
 - **of the content you present** **My teachers had ideas and we decided** which one we wanted to do.
 - **of the term:** (name of the presentation) **My teacher's idea.**
- **How did you learn about the possibility to take part in this competition?**
***From another teacher** who took part 2 years ago. Last year I was in Gothenburg with a presentation but last year we didn't have time to prepare.*
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
*It is **great!***
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
I understood it and contained all the info I needed.
- **Did you have enough time to prepare your presentation until the closing date?**
***We did actually. We had extra lessons,** because we do not have time to do it in regular classes.*
- **Do you like competitions?**
*I am usually pretty shy **but I try to be competitive.** This is my **first competition.***
- **Do you like mathematic more before ore the same?**
*I like it **in a different way.** I actually **get to see it in life where I can use it.***
- **Describe the mathematical content shortly?**
Mathematics in the kitchen. Cooking and dissipation
- **What else than mathematic did you learn?**
It is about dissipation, so that is what I learned.
- **Did you consult the guidelines at the beginning?**
 - **If yes, were they helpful?** Yes. It is, but **there are too many texts- too much to read.**
Summary?
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student? **Yes.****

- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
S- yes it was. **It gave me an idea what it should look like.** How to act.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
S- We didn't have problem with the time. No problems.
- **What do you think about dividing participants in 2 age-groups?**
T- **It is good because you can't** expect the younger students to have the same knowledge as the older students. S- **I am fine with it.**
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
It is more different in front of people. I can't erase mistakes. Easier to look into the lens than into someone's face.
- **We have invited students from non-European countries. What do you think about this?**
T-It's great. **An opportunity to see what they do in Maths in other countries. We know the European countries, so it is great to learn more about other countries.** To learn from them.
S- I agree completely. **We only benefit from it.**
- **Do you find the prize for the winner attractive?**
Of course. Every prize is attractive. I didn't know what the prize was when I took part in the competition.

2nd Prize Age 14-18

MATHeatre Title
The doors

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
Very excited. We are waiting for our show because it was a pleasure to work together. We made new friends. It is very important for us, we are in our country and we want to give 100%. We are stressed also.
- **Did you expect to be here you started working on your presentation?**
No... We are surprised but we had some expectations.
- **Who got the idea**
 - **to take part** From the teachers. Selected the students from interviews.
 - **of the content you present** Our teacher gave us the idea of probability. We solved the problem in class.
 - **of the term:** (name of the presentation) We just thought of it (students)
- **How did you learn about the possibility to take part in this competition?**
We participated in the last 3 conferences. From the conference last year.
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Yes. It is quite clear.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement**
We didn't have any questions-it was clear.
- **Did you have enough time to prepare your presentation until the closing date?**
Not really. We were under some pressure. It is exam period. No complaints because they wanted to do it.
- **Do you like competitions?**
Yes- definitely. Last week I was in a completion in Greece (dancing). Many auditions for bands- awards. Football/Basketball- every day is a competition! Math competitions in school, we always take part.
- **Do you like mathematic more before ore the same?**
I like it more, I see another view of maths- it is everywhere in our life. I want to study maths- I understand the meaning of it now. I always loved Maths. Maths is challenging- Euromath made it more interesting. I learned how to see Maths more fun.
- **Describe the mathematical content shortly?**
Probabilities. Statistics. How you can double the probabilities. Maximize your winnings.
- **What else than mathematic did you learn?**
Presentation skills. Working as a group. How to work under pressure. Improve our English. Being filmed. Communication.
- **Did you consult the guidelines at the beginning?**

- **If yes, were they helpful?** Yes. Very detailed and clear. Took a lot of time to go through them. Too long- a lot of repetitions.
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?** Yes it was
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
It was helpful on how to write a script and help the students. Some were elementary/basic. Should be divided in age groups.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
T- it was not easy. In particular the film production. No cuts for instance.
- **What do you think about dividing participants in 2 age-groups?**
It's good. Maybe better to divide in level of Maths being taught, it is not really the age but the level of mathematics which is the problem.
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
A big big difference. It is a live show. You have the audience to interact with. In the movie you can stop if you make a mistake, you can't on stage. I prefer to work with an audience. One chance to give everything!
- **We have invited students from non-European countries. What do you think about this?**
T- very good idea. Gives the students opportunity to leave behind some things they are afraid of. Communicate with others. No advantage, no disadvantage. Why not? S- Different cultures. We get to socialize with other cultures. Complete gaps. We don't care if they are European or non-European, we just want a lot of students from other places.
- **Do you find the prize for the winner attractive?**
It is not our aim. Our aim is to have fun and meet new people.

MATHeatre Title
The best european mathematician

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
Happy and excited to participate. A little bit stressed as it is open to the public.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
No!
- **Who got the idea**
 - to take part: the teacher
 - of the content you present: as a group they worked on different ideas and they selected one
 - of the term: (name of the presentation): from the students
- **How did you learn about the possibility to take part in this competition?**
The teacher.
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Yes.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
Yes.
- **Did you have enough time to prepare your presentation until the closing date?**
Yes. They prepared the presentation during additional lessons and home. They created a facebook page to communicate ideas, time when they meet, and get input from the teacher.
- **Do you like competitions?**
Yes. They took part in different competitions, like language competitions (English), sports (wind surf, basketball)
- **Do you like mathematic more before ore the same?**
They like it more because it gives different idea of math, learn different things while playing.
- **Describe the mathematical content shortly?**
Pythagoras theory, relativity formula, triangles, how to calculate 11 times 11 easily, addition of relative numbers.
- **What else than mathematic did you learn?**
Play theatre, self-confidence, working independently, be creative.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
They had a look at the scripts manual but after they started working on their own play. So this was good because they didn't have any pattern on mind and they were original.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
Yes, the teacher gave instructions from the beginning.
- **What do you think about dividing participants in 2 age-groups?**

It is good. However the ones of 14 years old is difficult to compete with the 18 years old ones.

- **What's the difference for you between part 1 (online) and the final presentation in this competition?**

Prefer the camera as in front of the camera they don't realise that people will going to watch them. The camera was impressive too!

- **Do you find the prize for the winner attractive?**

They are **not aware about what the prize** is.

- **We have invited students from non-European countries. What do you think?**

Yes, get to **meet more people. Interested in talking with people from different countries.**

2nd Prize Age 9-13

MATHeatre Title

Falling bodies

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

➤ **What's your feeling now?**

Very **interesting to meet people**, they have talked with many teens of their age. The town is amazing. Very **lucky to be here and see math like that**. Beautiful city and meeting people is wonderful. The hotel as well!

➤ **Did you expect to be here in Cyprus when you started working on your presentation?**

No, at the beginning they couldn't imagine that, but maybe when they finished the writing of the script and began to play.

➤ **Who got the idea**

- **to take part:** the **teacher**

- **of the content you present:** **the students met together** and discussed the idea of the script. They had the **idea to explain the life of Mathematician**, they knew Galileo so they made a search about it and set the play.

- **of the term:** (name of the presentation): the **students**

➤ **How did you learn about the possibility to take part in this competition?**

The **teacher**.

➤ **The invitation for the final competition was OK for you? What would you suggest as an improvement?**

Yes.

➤ **Did you have enough time to prepare your presentation until the closing date?**

Yes, **but they took some time during school time, one hour per week**. The teacher was **supporting them and asked advises for the translations**.

➤ **Do you like competitions?**

Yes. They took part in **language competitions (Big Challenge), handball and basketball, horse riding competition**.

➤ **Do you like mathematic more before ore the same?**

More, because it's fun!

➤ **Describe the mathematical content shortly?**

Falling bodies, mass, volume, when something of different volume falls on the floor.

➤ **What else than mathematic did you learn?**

History, talk in English. Improve of skills for example when they were looking for sponsors to come to Cyprus.

➤ **What do you think about dividing participants in 2 age-groups?**

Yes. **Good idea** to divide it in two.

➤ **What's the difference for you between part 1 (online) and the final presentation in this competition?**

More stressful in front of all the people.

➤ **Do you find the prize for the winner attractive?**

Yes they know about the prize.

➤ **We have invited students from non-European countries. What do you think?**

Good idea because they can talk with people from the whole world.

1st Prize Age 9-13

MATHeatre Title
The legend of number 10

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
Happiness, excitement. **Just want to go on the stage and play!** Very beautiful here. A little bit scared!
- **Did you expect to be here in Cyprus when you started working on your presentation?**
No, they were just dreaming about it!
- **Who got the idea**
 - **to take part:** the **math teacher**
 - **of the content you present:** **the idea belongs to another student, an older student, who some years ago wrote a story. The teacher presented this story to the students liked it!**
 - **of the term:** (name of the presentation): the story of the older **student**
- **How did you learn about the possibility to take part in this competition?**
e-Twinnig
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Yes.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
Yes.
- **Did you have enough time to prepare your presentation until the closing date?**
Yes. They prepared it **after school. 1-2 hours per week.** The **English teacher helped** with the translation and how they read and present the scripts.
- **Do you like competitions?**
Yes. Volleyball, tennis, singing, painting, English competition (sports, art, language)
- **Do you like mathematic more before ore the same?**
Yes, it's more fun to learn maths in this way. Some of them received higher grades!
- **Describe the mathematical content shortly?**
How number 10 become alive.
- **What else than mathematic did you learn?**
English, how to interact with other people, have fun, became friends, learning perspectives.
- **Did you consult the guidelines at the beginning?**
 - **If yes, were they helpful? Of course. They were helpful.**
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?**
Yes.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
They know it but they didn't use it.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**

Yes.

- **What do you think about dividing participants in 2 age-groups?**

It's good to **keep the two categories**. The **17-18 years old are focused on their preparation for the university and they don't have much time to invest in competitions.**

- **What's the difference for you between part 1 (online) and the final presentation in this competition?**

In front of the **camera is easier**, you can correct the mistakes. In front of the audience you should be perfect.

- **Do you find the prize for the winner attractive?**

They know about the prize. The prize is attractive.

- **We have invited students from non-European countries. What do you think?**

Every project that has people with other cultures, ways of life, background is very exciting. Everybody is learning something new when interacting with other. **Learn new ideas. It is important to include children with special needs.**

MATHeatre Title
Prime Kingdom

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
Very happy!
- **Did you expect to be here in Cyprus when you started working on your presentation?**
No! However some did because they worked very hard!
- **Who got the idea**
 - to take part: the teacher
 - of the content you present: the maths idea come from the teacher but the script comes from the students
 - of the term: (name of the presentation): the idea for prime numbers from the teacher but prime kingdom comes from the students
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
The invitations were sent to the teacher email. The parents were informed and the invitations were translated to the parents as they had to sign the approval. But the students didn't see the invitations.
- **Did you have enough time to prepare your presentation until the closing date?**
Yes. Sometimes they did it during education lessons. No extra
Practicing at home, worked with parents for the costumes, practicing at the airport, at the swimming pool.
- **Do you like competitions?**
Yes, sport competitions (tennis, volleyball, running, and chess), English competitions, and dancing competitions.
- **Do you like mathematic more before or the same?**
Yes, they like more maths, and for some their marks became better. Definitely are better in prime numbers. Anyhow they do many extra activities with their math teacher.
- **Describe the mathematical content shortly?**
Prime numbers, prime twins, + and -.
- **What else than mathematic did you learn?**
English, team work, how to perform theatre.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
No, the teacher didn't know about scripts manual.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
The rules were responsibility of the teacher.
- **What do you think about dividing participants in 2 age-groups?**
Yes.
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**

In front the camera, it's just the cameraman, but in the audience are many people. However, some they think that it's the same and some that it is better in front of the audience as it is live. In camera they could see the details and improve their performance in live.

➤ ***Do you find the prize for the winner attractive?***

Yes. They would participate even without a prize.

➤ ***We have invited students from non-European countries. What do you think?***

It is a good idea, because there are more competitors, more people to bit, they know more ideas from more countries, everybody should have a chance to compete.

MATHeatre Title
Just for one euro

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
Very **happy, nervous** because it's the first experience, and **they don't understand very well English.**
- **Did you expect to be here in Cyprus when you started working on your presentation?**
No because they were many participants and **was very difficult.**
- **Who got the idea**
 - **to take part:** the **theatre teacher** - the idea was **born as game outside of the school**, talking with friends and looking on the internet they found out about the competition. The theatre teacher who doesn't teach to this school talked to the participating school and they were very positive about the idea to participate.
 - **of the content you present:** **the teacher** following a work about trying to understand which was the difficulty in learning maths and maths in every day's life. Teacher went shopping and saw the difficulty of the people to pay their bill.
 - **of the term:** (name of the presentation): the **teacher** (idea explained above)
- **How did you learn about the possibility to take part in this competition?**
The **teacher talked with the teachers of the school.** The presentations was prepared **outside the school** but with the collaboration of the students. The teacher liked the idea that maths is part of every day's life and we should not restrict maths in only what is taught within the school curriculum.
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Yes and no. Little understanding and the teacher had to study a lot the information and put a little time to find out the message of this competition. Better explanation for points is needed in the announcement.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
Yes.
- **Did you have enough time to prepare your presentation until the closing date?**
Not so much time but enough. They worked an hour to learn by heart the text and spent more time with the teacher to learn how to move and to express.
- **Do you like competitions?**
Yes. **They take part in other competitions** (swimming).
- **Do you like mathematic more before ore the same?**
One likes maths more, and the other the same but she improved a mark in comparison with last year.
- **Describe the mathematical content shortly?**
To calculate discounts.

- **What else than mathematic did you learn?**
Maths is really good in every day's life, and not to have a foolish face in front of the friends. It was fun.
- **Did you consult the guidelines at the beginning?**
 - If yes, were they helpful? *At the beginning the guidelines were not published. When they became available on the internet the teacher found them helpful.*
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?**
No, he didn't found it.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
No the teacher didn't know it before. – Need to add all this information into the announcement -
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
Yes. It was not difficult. However, they had difficulties to upload the nominations.
- **What do you think about dividing participants in 2 age-groups?**
*It is important because trying to find a funny method to make maths more dynamic gives the chance to students to approach maths and find them in every daily life. And for the older group to face some more complicated maths.
 If the teacher would have to find a theatre play for 14-18 years old, numbers numbers would become a kind of an alphabet and we become communication elements. Maths can resolve the communication problems.
 The students are happy in their age group.*
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
As there are many people who are watching you, you have to show your passion on the stage. In front of the camera you can do a mistake and correct it. In front of the public even if you do a mistake you should go on!
- **Do you find the prize for the winner attractive?**
Naturally and you must try to give your best. But even without the prize it is a very good experience
- **We have invited students from non-European countries. What do you think?**
*A beautiful advantage for transversal communication. Interesting to find out how schools with different technological advantages work, see different methods that are not the same that we use in our system.
 See with more eyes means that we can see globally in 360°. They are very curious on how to communicate maths without be able to speak.
Students: to meet other people and exchange contacts with them and maintain them after the competition. Meet other cultures.*

MATHeatre Title
A journey to a strange ocean

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
Happy, stressed, beautiful opportunity as it a big contest, great honour to be in final as there are many different nationalities.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
No, because there were many teams. They started for fun and learn maths notions.
- **Who got the idea**
 - to take part: the teacher as they had done something similar the previous two years
 - of the content you present: the content came from the teacher but the idea on how to put it in a play/decoration came from the students
 - of the term: (name of the presentation): teacher
- **How did you learn about the possibility to take part in this competition?**
The teacher learned about it from Katell. He got an email from Katell.
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Clearly explained.
The only problem was with the file they sent in order to be tested and the organisers didn't check it and now they found out that it doesn't work because it is not compatible with Microsoft.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
Yes, was clear.
- **Did you have enough time to prepare your presentation until the closing date?**
Yes there was enough time. In additional, they had lessons on Wednesday afternoons to prepare their presentation. In the meantime the teacher changed schools but every Wednesday he was meeting up with the students.
- **Do you like competitions?**
Yes. They take part in sport competitions (athletics, karate).
- **Do you like mathematic more before ore the same?**
Some they like maths more as it is more funny now and easier to understand. As maths is used in physics, it is easier to understand physics.
- **Describe the mathematical content shortly?**
a number, history of mathematics, dream about a boat trip – maths compare with an exploration of seas.
- **What else than mathematic did you learn?**
Express themselves, more competent in English, team work.
- **Did you consult the guidelines at the beginning?**

- If yes, were they helpful?
- If no, why? Were you aware about the guidelines? **The teacher was aware but didn't use it because had already many scripts in French that had to choose one to be translated in English.**
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
Yes, to see that they do something similar of what is asked
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
It was a bit **difficult to adapt the script on the time limits.**
- **What do you think about dividing participants in 2 age-groups?**
A bit strict when you are at the age border.
It could be same **level of classes.**
Maybe it would be better to have 3 age groups (9-13/ 14-16 / 17-18).
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
Big difference! In front of the camera they can stop. On the scene you cannot stop. A bit more stressful in front of people but it is more fun and more interactive and there is more motivation.
- **Do you find the prize for the winner attractive?**
The biggest prize for the students is to be in Cyprus!
- **We have invited students from non-European countries. What do you think?**
It is **very good to open the competition as there are ways of teaching and ways of life radically different!** And the Hilton hotel in neutral for both as it is something surprisingly nice for both!

1st Prize Age 14-18

MATHeatre Title

Welcome back rectangle

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

➤ **What's your feeling now?**

Very happy, first time that have this experience, and very glad to show to others what the deaf students can do, happy to learn math in new and innovative way, exciting in learning maths like a game, it's fun.

➤ **Did you expect to be here in Cyprus when you started working on your presentation?**

At the first time they thought that was difficult because they are deaf and maybe they won't be accepted. After practicing and finished working on the play, they thought that this is real and this is happening. They felt very glad to come to Cyprus.

➤ **Who got the idea**

- **to take part:** the math teacher introduced the idea and all made a research on the internet and set the plan for the play
- **of the content you present:** see above
- **of the term:** (name of the presentation): the students thought about the title

➤ **How did you learn about the possibility to take part in this competition?**

Le-math project sent an invitation to the school. It's the only school in Lebanon that got this invitation.

Then they did a research on the internet and decided to participate.

➤ **Did you like the form of the official announcement? What would you suggest as an improvement?**

It was clear, but as the English language of the teacher was weak, he asked the help of the English teacher.

➤ **The invitation for the final competition was OK for you? What would you suggest as an improvement?**

It was easy and clear for students and the parents.

➤ **Did you have enough time to prepare your presentation until the closing date?**

They had enough time to prepare and practise for the play. The preparation was during the maths sessions and part of the theatre sessions.

➤ **Do you like competitions?**

Yes! Painting, music, sports (running, basketball), creative in theatre.

➤ **Do you like mathematic more before ore the same?**

Now they love it much more than before because they learn new things in a new way, before was boring but now it's more fun, before was something regular, now people can see what they are doing, they get better grades in maths now!

➤ **Describe the mathematical content shortly?**

Rectangle, square, angles, equal sides, parallel sides, geometry.

➤ **What else than mathematic did you learn?**

More confidence in themselves through practicing for this play. They learned how to express better themselves with body language for something they are learning in the class.

- **Did you consult the guidelines at the beginning?**
 - If yes, were they helpful? **Yes very helpful and clear.** Before they didn't know about such competitions.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
The **teacher watched the videos** and downloaded also other **examples from the internet.**
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
Yes.
- **What do you think about dividing participants in 2 age-groups?**
It is **very good to have two groups.**
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
Before they acted in front of the camera but as they practiced in front of other people they are used to do it in front of people. The blind students helped them with recording their voices.
- **What do you think about meeting people from Europe?**
See different people, very glad to meet people from Europe and to be friends with them. They met already a group from France. Maybe they don't understand the language but they can communicate.

MATHeatre Title
The Riddle

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
It's exciting and fantastic! Stressed, because it is difficult to win.
- **Did you expect to be here in Cyprus when you started working on your presentation?**
No. The group was 16 people, so they knew that not all would go but they still wanted to work.
- **Who got the idea**
 - to take part The teacher
 - of the content you present – Both. The teacher suggested the main line and then the students created the play and the dialogues.
 - of the term: (name of the presentation) The librarian of the school (she also worked on the project)
- **How did you learn about the possibility to take part in this competition?**
Katell gave her the idea. Then the website.
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Interesting. Lots of information.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?**
The teacher translated it into French.
- **Did you have enough time to prepare your presentation until the closing date?**
We had 3 months to prepare, it was short because we couldn't make all the scenes good. We worked in maths and English class, and sometimes in the evening and weekends.
- **Do you like competitions?**
Yes! Basketball, badminton, gymnastic, football....
- **Do you like mathematic more before ore the same?**
It is more fun now. When we learn by using theatre. It is easier to learn because it's less fun in the classroom than playing on the stage.
- **Describe the mathematical content shortly?**
Equation. Problem solving. It is a simple equation with one variable.
- **What else than mathematic did you learn?**
Vocabulary (English), pronunciation, explain maths to another person, to express yourself
- **Did you consult the guidelines at the beginning? Yes of course**
 - If yes, were they helpful? To participate you need to know the rules.
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student? Yes it was**

- **Was the manual of scripts (Theatre) / the video sample helpful for you?** We watched the videos. I wanted the students to be creative so we didn't really watch them a lot. The students saw the video after their play was finished.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?** Coming to the competition wasn't really our aim. Time was ok. We worked with 16 students because I wanted them to try to learn another way. It would have been nice to bring all, but we realize you have to put a limit somewhere.
- **What do you think about dividing participants in 2 age-groups?** 9-13, 14-18. This group is just in between the two age groups, so it was a bit difficult. You can't solve the problem because it is different in other European countries. S- it is not a problem
- **What's the difference for you between part 1 (online) and the final presentation in this competition?** We are more stressed to do it in front of an audience. We are stressed because it is live and we can't make mistakes. We are not shy.
- **We have invited students from non-European countries. What do you think about this?** T- It is an advantage. It is important to be open-minded and teach our students this. S- It is good because we met a lot of people from other cultures. We are lucky to be here with students from the whole world.
- **Do you find the prize for the winner attractive?** We want to win for the students left at home are very disappointed and if we win they will go to Paris on a trip.

MATHeatre Title
Who is who on the Bi-extreme island

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
We are all very happy to be here. It is **an adventure**. Great to meet new friends. And to be in Cyprus is wonderful! **Very excited about the project!**
- **Did you expect to be here in Cyprus when you started working on your presentation?**
With **every rehearsal we got more and more confident**, but we didn't really expect to be here. I secretly hoped that all our hard work would pay off.
- **Who got the idea**
 - **to take part** Our dear **teacher**
 - **of the content you present** Our **teacher gave us the script. The author is a friend of our teacher.**
 - **of the term:** (name of the presentation) The **script**
- **How did you learn about the possibility to take part in this competition?**
Sava Grozdev told me in a conference.
- **Did you like the form of the official announcement? What would you suggest as an improvement?**
Everything was **ok**.
- **The invitation for the final competition was OK for you? What would you suggest as an improvement?** **Yes**.
- **Did you have enough time to prepare your presentation until the closing date?**
Plenty of time. We had one year to prepare.
- **Do you like competitions?**
Of course. **Sports, music, judo, drawing, writing, maths** (Olympiads), **theatre**
- **Do you like mathematic more before ore the same?**
The work was fun so we like maths more now. We are more interested now and that will make us work harder and become better.
- **Describe the mathematical content shortly?**
Logics and how something can lead to other things. Solving problems with only logics. Deductions and conclusions.
- **What else than mathematic did you learn?**
- Acting skills, team work, tailoring, filming, translating (Bulgarian-English)
- **Did you consult the guidelines at the beginning?** **No**
 - **If no, why?** Were you aware about the guidelines? **I didn't know they were there**
- **Question for the teacher: Was the published methodology clear and understandable for you and helpful to support your student?** **Not applicable**
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
Yes

- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
Yes it was easy
- **What do you think about dividing participants in 2 age-groups?**
Not one age group. 14-18 works well in Bulgaria.
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
It was different every time we rehearsed it. We practised with and without audience. The camera allows mistakes. We can delete what we don't like.
- **We have invited students from non-European countries. What do you think about this?**
Great idea. Different culture. More variety in the plays and presentations.
- **Do you find the prize for the winner attractive?**
Yes

3rd Prize Age 14-18

MATHeatre Title
Saving private Goldbach

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

- **What's your feeling now?**
Relief, excitement, pride
- **Did you expect to be here in Cyprus when you started working on your presentation?**
That was our goal. We did do our best so we expected it. We hoped for it.
- **Who got the idea**
 - to take part Our teacher told us
 - of the content you present: One of the students came up with the idea and wrote the script. All of the students helped to improve the play.
 - of the term: (name of the presentation)
- **Did you have enough time to prepare your presentation until the closing date?**
Yes we did. We worked in the afternoons and in additional lessons.
- **Do you like competitions?**
Sure. Sports, music, acting, logic, physics, geography, language (German), chemistry, debating
- **Do you like mathematic more before ore the same?**
We have created something that most people don't think go together, music and theatre. It gave us another success of view on mathematics. Unfortunately not.
- **Describe the mathematical content shortly?**
It's about the use of computers in mathematics.
- **What else than mathematic did you learn?**
English accents, drama, filming, team work, how to use the camera. The life of a mathematicians and the agony of not solving the problem.
- **Was the manual of scripts (Theatre) / the video sample helpful for you?**
S- No, they were not helpful. There were so many and they were short and we wanted to do something completely else.
- **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
The time was difficult. We had to cut from 30 min to 10, we had to cut characters. The time is too short. You could be more creative if you had more time. If the problem is advanced you need more time to explain the solutions.
- **What do you think about dividing participants in 2 age-groups?**
We think it is fair to younger students.
- **What's the difference for you between part 1 (online) and the final presentation in this competition?**
We already performed in front of audiences. We act better in front of an audience. We get response from the audience.
- **We have invited students from non-European countries. What do you think about this?**

Why not? Make it world-wide. Everybody deserves a chance to participate. You might see something different from a non-European country. It is great to meet people from other countries, and to see how they think and live. Especially non-European, because they have a different culture from us.

- **Do you find the prize for the winner attractive?**
The best prize is to be here.

MATHeatre Title

The mantle of time

Interviews – questionnaire!

We congratulate you are under the finalists of MATHeatre-MATHfactor.

➤ **What's your feeling now?**

We feel **excited and a little bit nervous** because we do not know how the big audience will react. **We are not actors.**

➤ **Did you expect to be here in Cyprus when you started working on your presentation?**

Of course. Our main purpose was to be here. We wanted to come here.

➤ **Who got the idea**

- **to take part** Our **teacher**, and **principal**.
- **of the content you present** One of the students. I **wrote the script and my teachers looked at it and corrected a few things, the other students helped to make improvements also.**

➤ **How did you learn about the possibility to take part in this competition?**

The website, **we have taken part in Euromath** before

➤ **Did you like the form of the official announcement? What would you suggest as an improvement?**

yes

➤ **The invitation for the final competition was OK for you? What would you suggest as an improvement?**

It was enough

➤ **Did you have enough time to prepare your presentation until the closing date?**

Yes. We worked after school and on weekends and vacations.

➤ **Do you like competitions?**

Yes, we take part in many competitions and conferences. Mainly in mathematics.

➤ **Do you like mathematic more before ore the same?**

More of course. Everybody thought the play was wonderful when we showed it and that made it fun to work harder. It is nice to make maths understandable.

➤ **Describe the mathematical content shortly?**

Egyptian fractions, Pythagoras theorem, Gauss numbers

➤ **What else than mathematic did you learn?**

The fun part of it. **How to present mathematics to people who are no mathematicians** so they can understand it.

➤ **Did you consult the guidelines at the beginning?**

- **If yes, were they helpful? They were** **helpful.**

➤ **Was the manual of scripts (Theatre) / the video sample helpful for you? **We saw them and they were helpful in how to make the presentation.****

➤ **The rules and procedures for participating in the pilot testing procedure are easy to fulfil?**
Yes.

➤ **What do you think about dividing participants in 2 age-groups?**

It is **ok the way it is.**

- **What's the difference for you between part 1 (online) and the final presentation in this competition?**

It is **easier to do it in front of the camera**, a live performance has no room for mistakes. You get support from the audience.

- **We have invited students from non-European countries. What do you think about this?**

You can spread mathematics and ideas from all over the world. It is interesting to meet people from as many countries as possible.

- **Do you find the prize for the winner attractive?**

Yes. **We are not doing it for the prize. We are already winners!**