Math-GAMES Evaluation Report

Games and Mathematics in Education for Adults

Funded by the Erasmus+ Programme of the European Union

EN English

Math-GAMES Testing and Evaluation Report

GAMES AND MATHEMATICS IN EDUCATION FOR ADULTS
COMPENDIUMS, GUIDELINES AND COURSES
FOR NUMERACY LEARNING METHODS BASED ON GAMES

ENGLISH

ERASMUS+ PROJECT NO.: 2015-1-DE02-KA204-002260

2015 - 2018

www.math-games.eu

www.math-games.eu

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PRELIMINARY REMARKS

HINTS FOR UNDERSTANDING THIS EVALUATION REPORT

- Project-application: “Report of the project, the work, the activities during the lessons, the competitions in schools, the meetings, the testing and the evaluation. The report is published in English.”
  The present report focuses on
  - the evaluation of the international working meetings,
  - the evaluation of dissemination events in each country and
  - the testing of the pilot course of the planned teacher training.
- Each reported evaluation in the project involves data collections that were considered comparable. The surveys for the evaluation of the international working meetings were carried out by means of questionnaires in English, the surveys for the evaluation of the dissemination events were also translated into all languages and held online. They are accessible via the website www.math-games.eu
- The implementation and objectivity of the evaluation was taken over by the evaluator Heinrich Hausknecht, who was also present at every activity.
- In some places, the evaluation report will be supplemented with additional comments and discussions. This was the wish of the partners, so that more background information becomes apparent.
- The two essays at the beginning should again clarify the intention of the project.
- The printed personal statements have been submitted anonymously and have not been edited.

CONTRIBUTION FOR THE PREPARATION OF THIS TESTING AND EVALUATION REPORT

This is the report about testing and evaluation of the project Math-Games. The report is published in English and is the outcome of the collaborative work of all the partners for the development of the European Erasmus+ Math-GAMES Project, namely the organizations and co-ordinators:

1. Volkshochschule Schrobenhausen e. V., Germany (Roland Schneidt, Heinrich Hausknecht (Evaluator))
2. KRUG Art Movement, Kardzhali, Bulgaria (Radost Nikolaeva-Cohen)
3. Cyprus Mathematical Society, Nicosia, Cyprus (Gregory Makrides)
4. Association Connexion Roumanie, Paris, France (Catalina Voican)
5. Agentur Kultur e.V., München, Germany (Dr. Jürgen Halberstadt)
6. 2nd Gymnasium of Messini, Greece (Thodoris Zevgitis)
7. Istituto Comprensivo Cena, Cerveteri, Italy (Domelita Di Maggio)
8. Asociatia Femeilor Jurnaliste din Romania "Ariadna", Bucuresti, Romania (Georgeta Adam)
9. FPA Beniassent, Cocentaina, Spain (Cristina Llorens Berenguer)

The complete output of the project Math GAMES consists of the **Compendium**, the **Guidebook**, a **Teacher Training Course and Seminar** and the **Testing and Evaluation Report**, mostly translated into nine European languages. You can download all from the website www.math-games.eu as an active PDF-version, where you can “click” on the content to go directly to the page or “click” on the links to open pages in any browser.

ISBN 978-3-89697-821-9

CONTENT

The Logo and the Cover of the European Erasmus+ Math-GAMES Project

General Introduction to the Math-Games Project

Text of the application 2015

Using games to develop numeracy

Games can help learners to practice matching, counting and computational skills such as doubling, addition, subtraction and tables. Some games combine these skills with strategy, and this can help learners to develop problem-solving skills. Children's boards' games or dominoes can be used in family numeracy sessions. Adult games include bingo, dominoes, card games, strategy games such as backgammon, and traditional African games such as Oware and Ayo, which are now available commercially.

Statement from the "Adult Numeracy Core Curriculum", London, 2001

More than 13% of all people in Europe cannot read, write or count. Therefore, it is the declared goal of the European Union to remedy this situation and to reduce the number of poorly trained people. The project Math-GAMES has been developed within this environment; its title says it all: ***"Math Games - Games and Mathematics in Education for Adults - Compendium, Guidelines and Courses for Numeracy Learning Methods Based on Games (Mathematical Literacy)".*** In the project books and hand-outs were created in nine languages, which should give answers to the following questions:

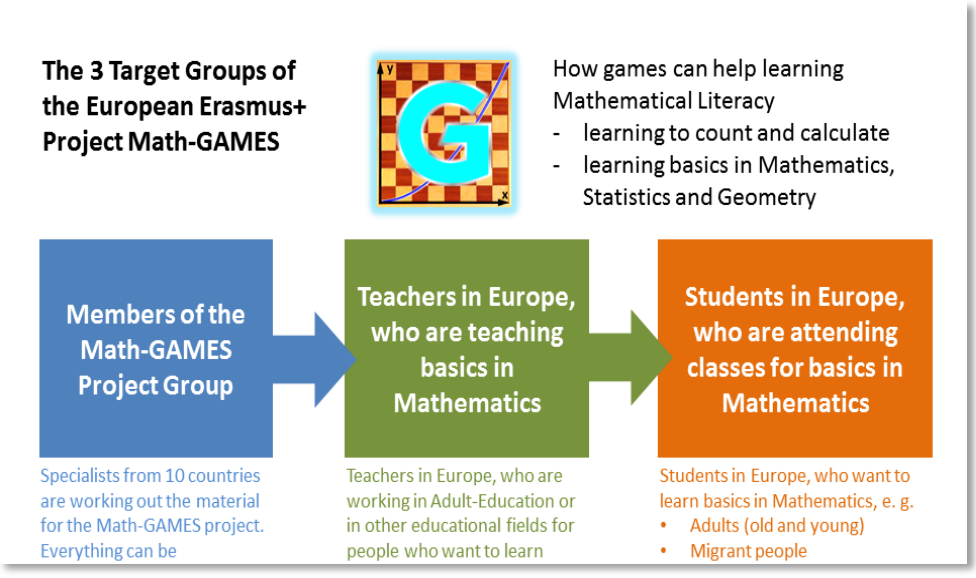
1. How can we reduce the number of under skilled adults to promote social integration and participation into our society?
2. How can we increase incentives for adult training by using games?
3. How can we offer tailored learning opportunities to individual learners by using games?
4. How can we provide information on accessing to the services of adult learning?
5. How can we save traditional and famous games in different countries from being lost?

The Math-GAMES Project gave the following answers by testing and evaluating the teaching materials:

To 1: We can reduce the number of under skilled adults to promote social integration and participation into our society by giving them the opportunity to learn what they need in their jobs or in other fields of their life. Many people do not want to admit that they have deficits in reading, writing and arithmetic. The result is a retreat from social life. By renewing and refreshing the knowledge people get self-confidence and find better their place in society. This refreshing and renewing of lost knowledge takes place through hands-on learning in a group, without coercion, but with a lot of fun. The recovered confidence and fun in a group allows many people to participate in society again.

To 2: We can increase the incentives for adults because we use games that are fun and can be played without much knowledge of every human being. The combination of games and the subsequent learning motivation is increased to deal with a subject matter, which one would not normally do. So, that is the motivating feature of gambling is exploited to learn a difficult subject matter.

To 3: We can offer tailored learning opportunities to individual learners through games, in such a way that we appropriately choose the games to the participants. It can be dealt with cultural differences as well as differences in learning behaviour and knowledge. E.g. if we have a group of adult migrants from Arabia, people can be reached by Tafli game faster



than with a card game which is unknown. We can also choose to watch so that mathematical knowledge is targeted, such as accurate identification of numbers between 1 and 6 at dice. But for instance, if a group wants to learn everything for commercial arithmetic, we can support learning with fun and enjoying the game "Monopoly".

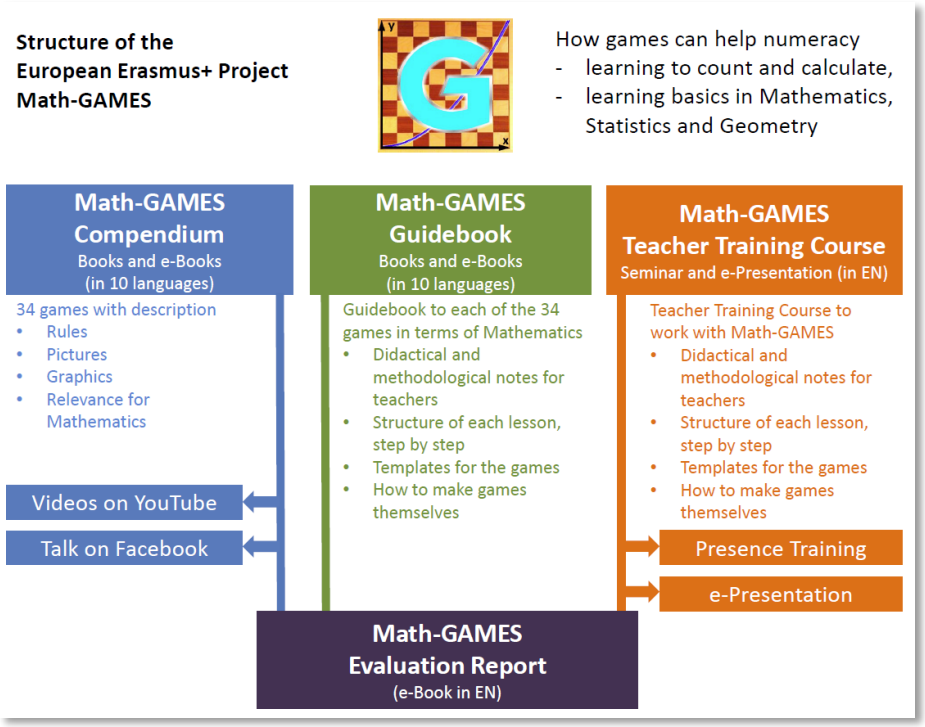
To 4: We can provide information on accessing to the services of adult education by creating a low input threshold so that everyone loses his inhibitions to attend courses for adults. By announcing that it is a class with games participants will come who would otherwise never visit a mathematical course.

To 5: In different countries, we can protect traditional and popular games from being lost, because we use only those games that are known and are used by many people. This helps to save the game from extinction, because many people only play with electronic devices and no longer traditional games. Moreover, these games are more suitable for learning, as the social component is larger and provides more fun.

Structure of the European Erasmus+ Project Math-GAMES

The four parts of the Intellectual Output of the project Math-GAMES are:

1. First the **Math-GAMES Compendium** of Famous Traditional Games, which are books in nine languages (BG, DE, EN, ES, FR, GR, IT, RO, VA). After that the partners of the project had proved, how traditional games could be implemented in their learning program for a better understanding of mathematics, especially for lower skilled people, for young people and for immigrants, if there are needs.
2. The results are second the **Math-GAMES Numeracy Learning Guidebooks** in nine languages.
3. In the third part of the project the project partners proved by doing and testing during real courses and seminars that playing games between people with different skills assist in social integration and thus traditional games will be saved by transferring them to other people and they will not be lost. The result is the **Math-GAMES Teacher Training Course and Seminar**, which is held for the next years in different countries. The e-presentation, the seminar and the teacher-training course are published in English.
4. Finally, this **Math-GAMES Testing and Evaluation Report** was published. It is a report about the project, the meetings, the pilot teacher training course and the evaluation of all. The Math-GAMES Testing and Evaluation Report is published in English.



All the Material is now available from the website www.math-games.eu

The authors hope, that the users will have much joy in playing our games, because joy helps you to learn. In addition, the authors hope to contribute that more people can apply basic mathematical content through this compendium.

Roland Schneidt

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THE NEW DEVELOPED MATH-GAMES METHODOLOGY

MATHEMATICS AND THE ROLE OF GAMES IN LEARNING AND TEACHING - WHY USING GAMES IN LEARNING MATHEMATICS? OUR ANSWER TO THIS QUESTION!

by Andreas Skotinos, Cyprus Mathematical Society, 2015 (at the beginning of the project)

The Goals of Mathematics and its Centrality in an Adult's Life

It is generally agreed that doing mathematics is a critical skill for all, adults and children, geniuses and people with limited intelligence, persons with high education and individuals with low literacy and knowledge.

In quite several reports it is recognized and stressed that for adults to function (reasonably well) in an increasingly complex world, they require a basic level of numeracy, which is increasingly necessary in a range of life-skills, such as personal finance and data handling. It is also accepted that mathematical skills are increasingly needed in the workplace and in everyday transactions between people.

It is not by chance that Aeschylus, 25 centuries ago, in the "Prometheus Bound" is adding that besides the fire, which Prometheus gave to people, he points out *"And yes, I invented for them numbers, too, the most important science"*. This reveals the close relation of humans to mathematical literacy and their need to develop mathematical skills, at least at the elementary level.[1]

These basic skills are obviously reflected in the main goals of mathematics education, which are to prepare students to:

- Solve problems
- Communicate and reason
- Make connections between mathematics and its applications
- Become mathematically literate
- Appreciate and value mathematics
- Make informed decisions as contributors to society.

As can be seen most these goals are immediately related to general life skills, that are expected for any adult and consequently it is justifiable to promote the learning of this subject to any person irrespective of his/ her ability and degree of intelligence.

The Role of Games in Learning Mathematics

So, we must promote Mathematics learning by any means. In view of this need the question now becomes "How can Games promote the Learning of Mathematics?" Particularly this question becomes more important in the case of Slow Adults Learners. The Background that can support a successful promotion of Games in the learning process can stem out of expectations that can have positive impact on the following aspects of human behaviour: **cognitive, motivational, emotional and social**. Existing research, although not extensive yet, supports this positive impact. Particularly in the case of Slow Adults Learners the positive impact on the motivational, emotional and social aspects is crucial and it is expected to have positive influence on the cognitive aspects as well.

In Psychology, it is recognized that Play brings joy. And it is vital for problem solving, creativity and relationships. This is true for every person either a child or an adult. This is vital for slow learners as it is one of the very few sources to provide these elements, while for other adults there may be other sources as well. Furthermore, research in Psychology relates Play with much social behaviour that we want either to enhance (if they are directing to the right direction) or to diminish (if they are leading to the wrong direction).

For instance, a psychologist found that lack of Play was just as important as other factors in predicting criminal behaviour among murderers in Texas prisons.

Thus, when we are dealing with the use of Games in the processes of teaching (and hence learning) we would better employ techniques and methods aiming at:

[1] Prometheus was chained to a high rock as punishment because he brought salvation to man, by stealing the gods' fire, but also by giving man numbers and their meaning. Thus, already 2,500 years ago, Aeschylus in his "Prometheus Bound" confirms the **importance of numbers for mankind**.

- **Creating Interest and Promoting Motivation**
  A Game is a sequence of interesting choices. By engaging the learner in such a process motivation is activated and thinking (including critical one) is taking place.
- **Utilizing the Benefits That Games Provide in Engaging Learners in an Environment of Experiential and Active Learning**
  The interaction in a game creates a better understanding for the learners regarding the objects, concepts, processes and even the other learners involved
- **Socializing the Persons Involved and Exploiting the Competition and Challenge Element**
  Games are part of everyday life-socialization. This is particularly important in the case of slow learners as their slowness might have its roots in their lack of social relations and interchanging eliminating ideas or low morale.
- **Connecting to Real Life Situations**
  Quite many games reflect actual activities of life and thus they provide the element of usefulness.
- **Developing a Happy and Joyful Environment**
  As already mentioned the joy element is a plus in the learning process.
- **Utilizing the Design (Structure, Rules, Equipment, Problem Posing etc.) of a Game to Develop an Appropriate Learning Approach**
  The components of a game, particularly the ones characterized by aesthetic, illustrative, energetic activities can be exploited for meaningful learning. Also, the problem-solving elements provide ample ideas for strategic and critical thinking.

The Math-Games Methodology

The Math-Games methodology encompasses a series of activities that will provide a teacher (and a teacher of slow learner's adults) the background for using Games as an educational medium in developing mathematical literacy. In this context, it includes three main outcomes (a Math-Games Compendium, a Math-Games Guidebook and a Math-Games Teacher Training Course) that support various approaches and methods for learning and teaching.

Factors that are to be considered in adopting the Math-Games methodology

In designing a lesson through the adoption of the Math-Games methodology and considering that the main target group of learners is going to be slow adult learners it is useful to take into consideration several factors reflecting some of the possible difficulties of these learners. The effort will be to exploit the power of Games to alleviate or diminish these difficulties. Such factors include the following ones:

- **Language Issues**
  In mathematics classes, language problems are evident when students have trouble using symbols of math, expressing math concepts to others, and listening to mathematics explanations. Problems also appear in expressing math "sentences".
- **Cognitive Factors**
  These may be attributed to perceptual, memory, attention or reasoning factors. Perception involves taking in information from the environment and processing that information for storage or use.
- **Metacognitive Factors**
  Metacognition is an awareness of the skills, strategies, and resources that are needed to perform a task and the ability to use self-regulatory mechanisms, including adjustments, to complete the task. Students with metacognition problems have trouble selecting and using effective learning strategies. Games could provide the forum to face such difficulties.
- **Motor Factors**
  Motor skills, like perceptual ones, involve more than one process. They may involve memory of the symbol along with its actual formation (visual and motor memories). They may involve visual perception and transfer (copying). Or they may involve integration of fine muscles with task demands. Indicators of motor problems are highly visible: poorly formed symbols, little control of spacing, excessive time for a task, and avoidance of written work.
- **Social and Emotional Factors**
  Such factors cover a very broad spectrum including peer relations, cooperation, self-esteem etc. Games again could provide a medium for facing them.
- **Habits of Learning**
  "Habits of learning" refers to how individuals view and participate in learning, their self-discipline and self-motivation, goal setting, engagement in learning activities, and acceptance of challenges.
- **Previous Experiences**
  Particularly in the case the learner had negative previous experience he refuses to get involved in the learning process. Games again could alleviate such negative experiences.

Consequently, what we must take into consideration in designing our plan for teaching using the Math-Games methodology could be summarized as:

- Type of slow learner (is the slowness due to other learning areas?)
- Background in Math
- Socialization needs of the person
- Motivation needs and indications that the mathematical content of the game relates to everyday life
- Provision of opportunities for the use of the previously mentioned benefits

General Approaches for Using Games in Learning Mathematics

Obviously, the approach one will adopt for using Games in the learning process depends on several goals that we want to achieve ranging from the mathematical area or topic to the considerations mentioned just in the previous paragraphs, reflecting the benefits of the methodology. In this context, we can suggest the following approaches:

- **Using the Methodology as an Introduction to a Mathematical Topic**
  The idea is to ask the learners to play a game that can be associated with the learning objectives of the game. Playing a game can be used as a brainstorming. This idea is expected to be the basis for motivation and developing of interest. It can also be used as an icebreaker both for the relations of the people involved in the learning process (learners and teacher) and for the attitudes of the learners towards mathematics (which are usually negative).
- **Using the Methodology for Creating a Happy and Joyful Environment**
  This idea develops positive conditions for learning and thus overcoming negative attitudes and anxiety.
- **Using the Methodology as an Actual Educational Medium for Comprehension of Mathematical Concepts and Processes**
  Obviously, such an approach is a substitute for a more traditional one with the advantage that it exploits the benefits of the methodology.
- **Using the Methodology for Consolidation of Otherwise Learned Concepts or Processes**
  It is a fact that learning process, particularly for mathematics, demands such an approach.
- **Using the Methodology for Relating Mathematics to Real Life Situations**
  The identification of uses of mathematics for real life situation is an asset for adults as the need to see applications of what they must learn.
- **Using the Methodology for Developing Problem Solving and Critical Thinking Skills**
  It is a major goal that every learner develops such skills. Games are ideal for strategic thinking, planning and designing approaches to face problematic issues. It provides the forum for meaningful learning and not just rote memorization.
- **Using the Methodology for Boosting Creativity, Productivity and Innovation**
  This idea enhances the skills of the learners and provides a fruitful approach for learning. It can be utilized for adaptation of games or constructing new ones by the players.
- **Using the Methodology for Fixing Relationship Difficulties among the Learners**
  As mentioned earlier such an approach can create a cooperative, challenging and joyful environment, thus creating ideal conditions for learning.

The Home Screen of the content rich Website www.math-games.eu from where you can download all the results of the European Erasmus+ Project Math-GAMES.

THE MATH-GAMES PROJECT - AN ASSESSMENT

by Andreas Skotinos, Cyprus Mathematical Society, 2018 (at the end of the project)

DESCRIPTION OF THE MATH-GAMES PROJECT

The project undertakes to present several traditional games in relation to their affinity to mathematics and the prospects of helping slow adult learners to develop basic mathematical skills.

Each game includes elements providing answers to the following questions:

- Question 1: What are the basic tools/ means needed for playing the game?
- Question 2: What are the rules for playing and what is the goal of the game?
- Question 3: What mathematical concepts/ processes or ideas/ human skills or abilities are involved in the game?
- Question 4: To what extent does the game help in providing answers to the following basic 5 issues that provide the context of the goals of the project?

These issues, as specified in the proposal, are:

- How can we reduce the number of under skilled adults and to promote social integration and participation into our society?
- How can we increase incentives for adult training by using games?
- How can we offer tailored learning opportunities to individual learners by using games?
- How can we provide information on accessing to the services of adult learning?
- How can we save traditional and famous games in different countries from being lost?

In this respect the goals of the project were:

(a) To use games in the learning process to develop the mathematical skills of under skilled adults and to promote their social integration and participation in the society
(b) To develop a context of motivation to adults for learning mathematics using games
(c) To set the basis of learning opportunities to individual learners using games
(d) To set an information basis for access by the services of adult learning
(e) To save and bring into everyday use famous games from different countries

Working on these ideas the partners produced the following intellectual outputs, in line with the proposal's specification

- The Math-Games Compendium
- The Math-Games Guidebook
- The Math-Games Training Course for teachers
- Material that can be used for construction or comprehension of the games
- And this Testing and Evaluation Report

ASSESSMENTS OF THE OUTPUTS

A thorough consideration of the intellectual outputs of the project leads to a series of positive recognitions concerning the quality of them covering the following basic constituents of the project:

1. The context of the project

The context of the project is specified by the previously mentioned goals of the project as well as the two basic concepts, mathematics and games. The significance of this context, as reflected in the outputs, stems out of recognition of the significant role that both mathematics, as well as games play in our life, not only now, with the extensive progress in science and technology but all the way from ancient time to today. Just to stress this it is enough to mention the rich variety of games described in the project as well as what Aeschylus quotes in the "Prometheus Bound". He points out that besides the fire, which Prometheus gave to people, "And yes, I invented for them numbers, too, the most important science". As for the games the starting point of this presentation is very indicative.

2. The educational forum for learning mathematics

The determinants that provide the educational forum for exploiting games in the process of learning mathematics were very diligently taken into consideration in the development of the intellectual outputs.
Among these one should stress:

(a) The goals of mathematics
(b) The role of games in learning, in general, and Mathematics in particular
(c) A set of cognitive and affective factors that are influencing the process of learning mathematics.
(a) The main goals of mathematics education, that were guiding the development of the project and are reflected in its outputs, were to prepare students to:
    - Solve problems
    - Communicate and reason
    - Make connections between Mathematics and its applications
    - Become mathematically literate

- Appreciate and value mathematics
- Make informed decisions as contributors to society.

(b) The Expected Benefits from games in the process of learning mathematics, that formed guiding principles for the partners, were:
- Creating interest and promoting motivation
- Utilizing the benefits that games provide in engaging learners in an environment of experiential and active learning
- Socializing the persons involved and exploiting the competition and challenge element
- Connecting to real life situations.
- Developing a happy and joyful environment.
- Utilizing the design (structure, rules, equipment, problem posing etc.) of a game to develop an appropriate learning approach

(c) Cognitive and affective factors that are influencing the process of learning mathematics. Such factors included the following:
- Language issues
- Cognitive factors
- Metacognitive factors
- Motor factors
- Social and emotional factors
- Habits of learning
- Previous experiences

3. The process of designing approaches or lessons for exploiting the outputs of the project

The outputs of the project provide information and material that can help the users (teachers, students, researchers or others) in:

- Deciding on the mathematical content to be covered or supported through the game
- Identifying suitable games
- Decisions on the approaches - identification of games that can help in this process
- Setting objectives
- Devising lessons and exploiting existing worksheets for the teacher and the student
- Devising lessons that exploit various advantages that the use of games offers in the learning process (e.g. are they supporting the general goals of mathematics?)
- Some of the games are difficult. Developing lessons with gradual difficulty

The lesson plans and the material provided in the outputs support ideas for using the Math-Games methodology for learning approaches like the following:

- An Introduction to a mathematical topic?
- An opportunity for creating a happy and joyful environment?
- An actual educational medium for comprehension of mathematical concepts and processes?
- An opportunity for consolidation of otherwise learned concepts or processes?
- An opportunity for relating Mathematics to real life situations?
- An opportunity for developing problem solving and critical thinking skills?
- An opportunity for boosting creativity, productivity and innovation?
- An opportunity for fixing relationships' difficulties among the learners?

4. The consideration of managing and evaluating the learning activities

The outputs of the project provide ideas, examples and suggestions that can help the user in

- Classroom management
- Supporting and guiding the learner for designing, constructing or finding constructing or constructing earner or as teacher) on the extent of effectiveness of the methodology for learning mathematics
- Reflecting (either as learner or as teacher) on the extent of effectiveness of using a game for learning mathematics
- Reviewing, simplifying, adapting or extending a game according to what he/ she observes in using it.

VALUE – INNOVATION-USES

The Math-Games-Methodology exploits the benefits of the game approach (mentioned earlier) to help in developing mathematical skills to the target group identified in the project. It includes a substantial number of games and it provides practical learning material and a variety of learning/ teaching approaches that can enhance the learning of mathematics.
The material with minor adaptations can be used for other learning groups from the kindergarten to the high school and even at university level. Some of the games can be adapted for more advanced learners and can provide the forum for creative and innovative work. For example, the game MathScrabble can easily be changed for learning of algebra (manipulation of algebraic operations), trigonometry, calculus and so on.

REPORT ABOUT THE EVALUATION OF ALL THE INTERNATIONAL PROJECT MEETINGS M1 TO M9

Meeting M1 in Schrobenhausen, Germany, 23. – 25.10.2015

The **Math-GAMES-Group** in Front of the Volkshochschule Schrobenhausen on 24th of October 2015

Evaluation Sheet

For a continuous optimization of our project, we are very interested in your honest opinion. Therefore, we ask you, to give us your reviews. We will reuse this sheet in all meetings. In red you see the percentage summary of the answers.

Preparation and implementation (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How satisfied were you with preparations (letter of invitation, time specifications and confirmation letter)?	100%				
How do you rate the conference (room, catering)?	100%				
Do you keep the amount of time for the individual program points for adequate?	33,3%	66,7%			
Substantive review (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How do you evaluate the comprehensibility of the information about the project?	55,6%	44,4%			
Are the work orders for your work clearly and understandably formulated?	66,7%	33,3%			
Was enough time for exchange of ideas?	33,3%	55,6%	11,1%		So much information for so less time
How do you evaluate the work atmosphere?	66,7%	33,3%			
In general, I would like to say the following:					
Thank for significant efforts of Mr. Roland Schneidt, Mr Benno Bickel, Mr. Wolfgang Murr, Mr. George Riedinger. I hope in a good cooperation and help in case of need!!! I consider that it had been a very interesting and useful meeting. That the course has been perfectly organized. I really enjoy both working days (not so heavy, but interesting) and the profitable cooperation. Thanks Roland. Perfect organization, good start for the project. Thank you for the hospitality. It's a nice project with innovative ideas and a joyful group of participants. Very good planning! The project Math-GAMES is a real challenge for our KRUG team due to the fact that Play, and Culture are actually interwoven with one another and I hope our expertise is a well base for the project contribution.					

Meeting M2 in Kalamata and Messini, Greece, 26. – 28.02.2016

The **Math-GAMES-Group** in Kalamata on 27th of February 2016

Evaluation Sheet

For a continuous optimization of our project, we are very interested in your honest opinion. Therefore, we ask you, to give us your reviews. We will reuse this sheet in all meetings. In red you see the percentage summary of the answers.

Preparation and implementation (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How satisfied were you with preparations (letter of invitation, time specifications and confirmation letter)?	100%				
How do you rate the conference (room, catering)?	55,6%	44,4%			
How do you rate the accommodation?	44,4%	44,4%	11,2%		
Do you keep the amount of time for the individual program points for adequate?	100%				
Substantive review (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How do you evaluate the comprehensibility of the information about the content of compendium O1 and the progress of the project?	100%				
Are the work orders for your work clearly and understandably formulated?	66,7%	33,3%			
Was enough time for exchange of ideas?	44,4%	55,6%			
How do you evaluate the work atmosphere?	77,8%	22,2%			
In general, I would like to say the following:					
Good things are happening, Thanks. The meeting has been very interesting and stimulating, because I had the possibility to improve my knowledges. Thank you for the very well-prepared meeting. Everything was all right. Work in a good atmosphere. Everything perfect.					

Comment by the evaluator (09.03.2016):

Of all participants was consistently pronounced large or largest praise. Only the hotel was slightly underrated.

Meeting M3 in Bucharest, Romania, 17. – 19.06.2016

The **Math-GAMES-Group** in Bucharest on 18th of June 2016

Evaluation Sheet

For a continuous optimization of our project, we are very interested in your honest opinion. Therefore, we ask you, to give us your reviews. We will reuse this sheet in all meetings. In red you see the percentage summary of the answers.

Preparation and implementation (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How satisfied were you with preparations (letter of invitation, time specifications and confirmation letter)?	87,5%	12,5%			
How do you rate the conference (room, catering)?	62,5%	37,5%			
Do you keep the amount of time for the individual program points for adequate?	75%	25%			
Substantive review (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How do you evaluate the comprehensibility of the information about the content of compendium O1 and the progress of the project?	100%				
How do you evaluate the comprehensibility of the information about the content of output O2 Guidebook?	87,5%	12,5%			
Are the work orders for your work clearly and understandably formulated?	75%	25%			
Was enough time for exchange of ideas?	75%	25%			
How do you evaluate the work atmosphere?	100%				
In general, I would like to say the following:					
Highly motivated partners. The meeting was very helpful for the future work of the project. The meeting was very helpful for our time. Thank you for the organisation. Good, job, go ahead! This meeting has been very useful to understand how to approach the output O2. Very good project!					

Meeting M4 in Paris, France, 18. – 20.11.2016

The **Math-GAMES-Group** in Paris on 19th of November 2016

Evaluation Sheet

For a continuous optimization of our project, we are very interested in your honest opinion. Therefore, we ask you, to give us your reviews. We will reuse this sheet in all meetings. In red you see the percentage summary of the answers.

Preparation and implementation (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How satisfied were you with preparations (letter of invitation, time specifications and confirmation letter)?	85,7%	14,3%			
How do you rate the conference (room, catering)?	62,5%	25%	12,5%		
Do you keep the amount of time for the individual program points for adequate?	75%	25%			
Substantive review (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How do you evaluate the comprehensibility of the information about the content of compendium O1 and the progress of the project?	85,7%	14,5%			
How do you evaluate the comprehensibility of the information about the content of output O2 Guidebook?	100%				
Are the work orders for your work clearly and understandably formulated?	85,7%	14,5%			
Was enough time for exchange of ideas?	75%	25%			
How do you evaluate the work atmosphere?	75%	25%			
In general, I would like to say the following:					
We need to discuss more about dissemination and sustainability. Thanks for all common efforts of our EU team. It is a very good interesting European programme.					

Meeting M5 in Cerveteri, Roma, Italia, 20. – 22.01.2017

The **Math-GAMES-Group** in Cerveteri, Italy on 21st of January 2017

Evaluation Sheet

For a continuous optimization of our project, we are very interested in your honest opinion. Therefore, we ask you, to give us your reviews. We will reuse this sheet in all meetings. In red you see the percentage summary of the answers.

Preparation and implementation (please tick)	very good	good	medium	bad
How satisfied were you with preparations (letter of invitation, time specifications and confirmation letter)?	100%			
How do you rate the conference (room, catering)?	83,3%	16,7%		
Do you keep the amount of time for the individual program points for adequate?	66,7%	33,3%		
Substantive review (please tick)	very good	good	medium	bad
How do you evaluate the comprehensibility of the information about the progress of the project?	100%			
How do you evaluate the comprehensibility of the content of output O2 Guidebook in English-version?	100%			
Are the work orders for your work clearly and understandably formulated?	83,3%	16,7%		
Was enough time for exchange of ideas?	66,7%	33,3%		
How do you evaluate the work atmosphere?	100%			
In general, I would like to say the following:				
Thank you for this useful meeting. Everything was exceptional.				

Meeting M6 in Cocentaina, Spain, 24. – 26.03.2017

The **Math-GAMES-Group** in Cocentaina on 25th of March 2017

Evaluation Sheet

For a continuous optimization of our project, we are very interested in your honest opinion. Therefore, we ask you, to give us your reviews. We will reuse this sheet in all meetings. In red you see the percentage summary of the answers.

Preparation and implementation (please tick)	very good	good	medium	bad
How satisfied were you with preparations (letter of invitation, time specifications and confirmation letter)?	100%			
How do you rate the conference (room, catering)?	67%	33%		
Do you keep the amount of time for the individual program points for adequate?	54%	56%		
Substantive review (please tick)	very good	good	medium	bad
How do you evaluate the comprehensibility of the information about the progress of the project?	100%			
How do you evaluate the comprehensibility of the information of output O3?	78%	22%		
Are the work orders for your work clearly and understandably formulated?	100%			
Was enough time for exchange of ideas?	56%	54%		
How do you evaluate the work atmosphere?	100%			
In general, I would like to say the following:				
Thank you for all efforts, dear Spanish friends! This project is a valuable experience. The progress in the Math-Games is really. Good people. Good project.				

Meeting M7 in Sofia, Bulgaria, 20. – 22.10.2017

The **Math-GAMES-Group** in Sofia on 21st of October 2017

Evaluation Sheet

For a continuous optimization of our project, we are very interested in your honest opinion. Therefore, we ask you, to give us your reviews. We will reuse this sheet in all meetings. In red you see the percentage summary of the answers.

Preparation and implementation (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How satisfied were you with preparations (letter of invitation, time specifications and confirmation letter)?	70%	30%			
How do you rate the conference (room, catering)?	20%	50%	30%		Room and place perfect, catering can improve
Do you keep the amount of time for the individual program points for adequate?	80%	20%			
Substantive review (please tick)	very good	good	medium	bad	If you tick **medium** or a **bad**, please explain this to us
How do you evaluate the comprehensibility of the information about the progress of the project?	80%	20%			
How do you evaluate the comprehensibility of the information about output O3?	70%	30%			
How do you evaluate the hints for carrying out the Dissemination Conference?	80%	20%			
Are the work orders for your work clearly and understandably formulated?	90%	10%			
Was enough time for exchange of ideas?	70%	30%			
How do you evaluate the work atmosphere?	70%	30%			
In general, I would like to say the following:					
The work is perfect and clean, maybe we need involve like a social European group. Thanks for all. Everything has been “great as always”. Thank you for the perfect organisation.					

Meeting M8 in Larnaca, Cyprus, 23. – 25.03.2018

The **Math-GAMES-Group** in Larnaca on 24th of March 2018

Evaluation Sheet

For a continuous optimization of our project, we are very interested in your honest opinion. Therefore, we ask you, to give us your reviews. We will reuse this sheet in all meetings. In red you see the percentage summary of the answers.

Preparation and implementation (please tick)	**very good**	**good**	**medium**	**bad**
How satisfied were you with preparations (letter of invitation, time specifications and confirmation letter)?	86 %	14 %		
How do you rate the conference (room, catering)?	72 %	28 %		
Do you keep the amount of time for the individual program points for adequate?	72 %	14 %	14 %	
Substantive review (please tick)	**very good**	**good**	**medium**	**bad**
How do you evaluate the comprehensibility of the information about the progress of the project?	100 %			
How do you evaluate the comprehensibility of the information about output O4?	72 %	28 %		
How do you evaluate the hints for carrying out the implementation plan for the C1 training course?	72 %	28 %		
How do you evaluate the hints for carrying out the implementation plan for the E1 Seminar?	72 %	28 %		
How do you evaluate the hints for carrying out the implementation plan for the E2 Dissemination Conference?	86 %	14 %		
Are the work orders for your work clearly and understandably formulated?	100 %			
Was enough time for exchange of ideas?	86 %	14 %		
How do you evaluate the work atmosphere?	72 %	28 %		

In general, I would like to say the following:

Very good meeting, the work atmosphere was great.
Thank you for the good organisation of the meeting.
Useful meeting really.
The work is clearly and understandably, but sometimes in that kind of project you need involve more.
We think to believe the formal target of the project.
Important is learning to teach, emotive, positive and share the good think about this project.
Thank a lot for these fantasies and awesome project.

Meeting M9 in Munich, Germany, 17. – 19.05.2018

The **Math-GAMES-Group** (the co-ordinator from each of the nine partners) in Munich on 18th of May 2018 with the books in 9 languages.

Evaluation Sheet
For a continuous optimization of our project, we are very interested in your honest opinion. Therefore, we ask you, to give us your reviews. We will reuse this sheet in all meetings. In red you see the percentage summary of the answers.

Preparation and implementation (please tick)	**very good**	**good**	**medium**	**bad**	**If you tick medium or a bad, please explain this!**
How satisfied were you with preparations (letter of invitation, time specifications and confirmation letter)?	100 %				
How do you rate the conference (room, catering)?	93,8 %	6,2 %			
Do you keep the amount of time for the individual program points for adequate?	62,5 %	37,5 %			
Substantive review (please tick)	**very good**	**good**	**medium**	**bad**	**If you tick medium or a bad, please explain this!**
How do you evaluate the comprehensibility of the information about the progress of the project?	93,7 %	6,3 %			
How do you evaluate the comprehensibility of the information about output O4?	75 %	25 %			
How do you evaluate the hints for carrying out the Testing- and Evaluation Report?	68,8 %	31,2 %			
Are the work orders for your work clearly and understandably formulated?	100 %				
Was enough time for exchange of ideas?	68,8 %	12,5 %	12,5 %	6,2 %	
How do you evaluate the work atmosphere?	75 %	18,8 %		6,2 %	
How do you evaluate your satisfaction with the previous outputs of the project?	93,8 %	6,2 %			
In general, I would like to say the following, see next page "Final Individual Statements"					

FINAL INDIVIDUAL STATEMENTS OF THE PROJECT PARTNERS DURING THE LAST MEETING M9 IN MAY 2018

Collected by Heinrich Hausknecht, Evaluator

Question to all the participants during the last Meeting in Munich:
The Math-GAMES project is almost over. In your own words please describe briefly how you felt about your work in the project and the cooperation in the project group! Was the result worth the work?

Answers

Person 1:

The work was almost hard but the satisfaction payed any effort. The first part of the project was more challenging, but we managed. The clearest result of the real outcomes of the project came from the multiplier event. The cooperation was good among partners, thanks to the good coordination and management. Each step was well planned, so the work was well done. The result at the end is positive.

Person 2:

The Math-Games project expected from the partners to do a lot of work. However, I think that we cooperated well, and the end results are much better than we thought at the beginning. The result was totally worth the work and we are proud for it. We believe that the produced material will be used in education (primary, secondary, special needs, adults).

Person 3:

I think, the result and the atmosphere of the work were very good. It would be interesting to develop the potential of training other teachers as well as other educators or trainers.

Person 4:

How we can reduce the member of under skilled adults to promote social integration and participation into one society is a big question for our team and a very big project challenge. We worked very hard in cooperation of many partners (teachers, students, researchers) to resolve educational problems of people living in isolated geographical regions with different ethnic identity and with limited possibilities. Thank you, Roland, to your big support.

Person 5:

I try to resume in 3 chapters:
1. Project material: Perfect and magnificent work to do this, is a good beginning to start and improve the material. Grown students and teachers learn mathematics and skill to improve class and students' attention.
2. Co-ordinator of the project: Perfect and thank you very much.
3. Social project during the time of project: I missed people in the project more involved in partner meetings, I think the conclusion today is the true sense of the project, cohesion and sharing experiences problems and advantages during the Project. Many thanks too.

Person 6:

We had a lot of work during the project but the results worth it. The cooperation in the project was fine in the work but I missed more contact at personal level during the meetings. The coordinator did an excellent work.

Person 7:

Yes, the project was worth to work. Agentur Kultur was engaged in producing illustrations by Klaus, additional to the games both with a regional context: LUDO was developed in Munich and 7 STEPS as Bavarian dance. This regional context was helpful for our regional dissemination activities especially in social and cultural centres in Munich (multigenerational houses, Greece House etc.). We enjoyed all this very much. Helpful for learning languages in working with refugees. The cooperation between all partners, organized by Roland was excellent.

Person 8:

The project was well organized, and this way was easy to do the work. It was also interesting even for people that do not have a math leak ground.

Person 9:

The work schedule was well planned, and we had the opportunity to work on games and to have fun by playing. The books have a clear construction and they drew attention every time we presented them.

Person 10:

Math-Games, Erasmus+ EU project: It is a very good experience with innovative and important challenges in adult education. It is valuable experience in cooperation and dissemination the processes. The very good experience with coordinator and all European partners.

Person 11:

The results were worth to work so hard and long. The two books are a perfect basis to work with adults and children. We will use them in our school and are very interested about the reaction from our clients. The work together with all the persons and nations was also very important because we learned many about their culture and the way how to work together. The website is also a perfect complement. Now let's start to use the products and help adults and children to learn mathematics with this perfect methodology which is suitable.

Person 12:

The project plan and implementation has contributed to a co-creation atmosphere, cultural heritage, playing and learning with a high quality of outputs accomplishing to goals of the project. Over the goal and in the project, results appeared useful to primary education level, which opens an additional horizon in exploitation and sustainability. The outputs can be used in different projects and events, like conferences, summer camps, competitions, festivals and training. An additional deliverable could have been measuring of impact process through some piloting experiment with the target groups. We believe that the project coordinator was excellent and had a key role for the successful completion of the project.

Person 13:

Being a primary school, we have had the opportunity to test the methodology Math-Games directly on the students improving their mathematical thinking. It has been a stimulating experience because pupils learned by doing/ by playing. Weakness: The translation in Italian of the book was assigned to the different teachers so there wasn't homogeneity of the translation with many mistakes. The project gave me the chance to improve my teaching methods in Mathematics. We should organize Math-Games competition for more profitable involvement of students. The result of the conference was a success, because it is well structured and well organized. The teachers like both the guidebook and the compendium. Both send the chapters and the games pushing them in using the methodology based on Math-Games.

Person 14:

Yes, it was worth doing it, because the material is very good and helpful. Unfortunately, not every member of the groups taking part in the project were able to speak English. So, conversation was sometimes difficult although there is rule that everyone should have sufficient language skills. In general, there should have been enough time to play the games.

Person 15:

These items as well as other side effects of the project could be substantially improved, if the overall standard regarding the command of the project language would be on a higher level.

Person 16:

First, we would like to thank the project coordinator for his effort organizing the group and taking this big project forward. And second, we also want to thank all the participants in the project for the good team-work, as without everybody's contribution the project wouldn't have been possible.

The methodology of the project, the established plan and the times to carry it out have been very successful even with the handicap of having lost a member of the project, the Turkish team, an unfortunate loss.

In addition, the project is so wide that, for example, only focusing in the fact of rescuing traditional games and how to elaborate them, teachers and trainers could use it for other didactic purposes in their lessons ... *Math games* is not only the concept of using a game to learn

mathematics, but everything that entails the process of learning the game: its history, its elaboration, its practice, and the social aspect it drags into the classroom... and finally, its consequence of learning mathematics without being aware of it, during the process of the game. All this, in a social and fun atmosphere in the classroom.

The results of the project have been very positive in Spain. We could use the materials in our school successfully: students enjoyed and learned Math at the same time. As well, we could spread the Math-Games idea among teachers and trainers in our region with a good acceptance. I know that some of them have been applying the Math-Games methodology in their lessons.

Most important is that these results will remain for many years. We expect more results in the future. We have already been requested for doing some more training courses in the next school year in the region of Valencia and we are thinking of how to spread the project to other regions in Spain, likely in a national event about Innovative Projects in Adult Education.

For us the conclusion is that the project doesn't end now but it is starting to grow up from now on. Life is like a game, like a Math-Games, it has its rules and the respect towards them ... everything you can do afterwards will always tend to an infinite learning, you can even change the rules and create another math game… learn, enjoy, teach, change and learn one more time...

Congratulations, Mr. Roland Schneidt, Math-GAMES project is a great project.

REPORT ABOUT THE IMPLEMENTATION, TESTING AND EVALUATION OF THE MATH-GAMES MULTIPLIER EVENTS (DISSEMINATION CONFERENCES) E3 IN GERMANY

Official Name of the Math-GAMES-Project-Partner:
Volkshochschule Schrobenhausen e.V., Germany
Name and e-Mail-Address of the contact person:
Roland Schneidt, roland.schneidt@web.de

In Co-operation with
Agentur Kultur e.V., Munich, Germany
Name and e-Mail-Address of the contact person:
Dr. Jürgen Halberstadt, j.halberstadt@t-online.de

The following Multiplier Event/Events took place in Germany

No: E3.1	Date: 14.06.2017	Place: Buchenried	Number of Persons: 16
No: E3.2	Date: 15.09.2017	Place: Munich	Number of Persons: 12
No: E3.3	Date: 07.12.2017	Place: Munich	Number of Persons: 24
No: E3.4	Date: 22.01.2018	Place: Hannover	Number of Persons: 12
No. E3.5	Date: 17.05.2018	Place: Munich	Number of Persons: 18

Multiplier Event E3.1 in Buchenried/Starnberg/Bavaria

Erasmus+ Project MathGAMES
Multiplier Event E3.1:
Dissemination Conference in Germany
(Tagung zur Verbreitung von Unterrichtsmaterial)

Date: Friday, 12.-15.06.2017
Venue: Meeting rooms of the Bavarian Adult Education Association, Buchenried near Starnberg
Speaker on 14.06.2017 at 11:00am: Roland Schneidt

Invited to this conference were organizers and lecturers of folk high schools in Bavaria, who are active in the field of basic education (especially in arithmetic). The conference offered many topics for basic education. One of the topics of a workshop was to use games to teach individual subjects of mathematical basic education in a more motivating way. The materials and contents of the training have been developed and tested in the European Erasmus + project Math-GAMES (www.math-games.eu) and are now available to all charge free.

The conference was very successful.

vhs Bayerischer Volkshochschulverband e.V.

Anfahrt

Münchner Volkshochschule

Haus Buchenried liegt unmittelbar am Ufer des Starnberger Sees mit hauseigenem Strand zum Baden. Der Garten mit seinen alten Buchen, den neu gestalteten Grünanlagen und Terrassenflächen bietet viel Raum zur Erholung. Unternehmen Sie einen Spaziergang in den nahen Berger Schlosspark oder zum Bismarckturm.

Mit dem Auto nehmen Sie die Autobahn Richtung Starnberg bis zur Ausfahrt Percha/Berg. Sie durchfahren die Ortschaften Percha, Kempfenhausen und Berg und biegen nach dem Ortsende von Berg rechts ab nach Leoni.

Öffentlich fahren Sie mit der S-Bahn (S6) bis Starnberg Nord und weiter mit dem Bus 961. Von der Haltestelle Berg, Abzweigung Leoni, sind es etwa 15 Minuten Fußweg. Oder Sie fahren mit dem Schiff vom Bahnhof Starnberg nach Leoni. Haus Buchenried liegt hundert Meter südlich der Dampferanlegestelle in Leoni. Alternativ mit dem Taxi vom Bahnhof Starnberg (ca. 17,00 Euro).

Veranstaltungsort

Haus Buchenried
Assenbucher Straße 45
82335 Berg-Leoni
Tel 08151 9620 0
info@buchenried.de
www.mvhs.de/buchenried

Veranstalter

Bayerischer Volkshochschulverband e.V.
Fäustlerstraße 5a
80339 München

Ansprechpartnerinnen

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Testing the Math-GAMES lessons in real situations, e.g. in schools for adults.

vhs Bayerischer Volkshochschulverband e.V.

Die Grundbildungswoche

Die Grundbildungswoche schafft den Rahmen für sowohl kreatives als auch ergebnisorientiertes Arbeiten. Von der Idee zur Umsetzung. In der täglichen beruflichen Praxis bleibt oftmals kein Raum, um Ideen aufzugreifen und zu einem konkreten Vorhaben weiterzuentwickeln.

Das Ziel

Wir schaffen gemeinsam die Voraussetzungen, um Erwachsene in ganz Bayern zu erreichen und an der Grund- und Weiterbildung zu beteiligen.

Impulsvorträge, Workshops und der Austausch untereinander bestimmen das Programm. Wir entwickeln zukunftsfähige Ideen und erkunden ihre Umsetzung.

Die Themen

- **Arbeitswelt:** Grundbildung für Beschäftigte und Arbeitssuchende, Betriebe und das betriebliche Personalwesen, am Arbeitsplatz und im kollegialen Netzwerk, am Übergang von der Schule in den Beruf.
- **Verbraucherbildung:** Schuldenprävention, finanzielle Grundbildung, g'scheit haushalten, g'scheit telefonieren, g'scheit durch den Behördendschungel, g'scheit essen, g'scheit heizen, Lebensqualität und Nachhaltigkeit
- **Erstellen, Teilen, Aktivieren:** Erfahrungen in der Praxis – wie findet digitales Lernen erfolgreich statt?
- **Von und mit Europa lernen – math-games.eu** Mathematik für Erwachsene aus neun Ländern
- **Europäische Agenda – Stark für Erwachsenenbildung** Wege ebnen zur gesellschaftlichen Teilhabe und Chancengleichheit

Programm

Montag, 12.06.2017

10:00 Uhr Empfang und Erfrischungen

11:00 Uhr Begrüßung

11:10 Uhr Grundbildung - Stand der Entwicklungen

11:30 Uhr Projekte und Initiativen in der Arbeitswelt:

→ BasisKomPlus, Raul Vitzthum, Arbeit und Leben gGmbH, Weiden

→ Mento, Renate Schiefer, DGB Bildungswerk e.V., München

→ Kooperation mit Jobcentern, Hella Krusche, Bayerischer Volkshochschulverband e.V., München

13:00 Uhr Mittagessen

14:30 Uhr Kreativ – Workshop

→ Nutzen generieren in lokalen und regionalen Netzwerken: Welche Kooperationen bieten sich vor Ort an? Wie lassen sich diese Kooperationen initiieren und auf Dauer stellen?

→ Konzepte und Materialien aus dem Transfer-Projekt AlphaKommunal

15:30 Uhr Kaffeepause

16:00 Uhr Stimme und Yoga

→ Atmung

18:00 Abendessen und informeller Austausch

Dienstag, 13.06.2017

09:00 Uhr Innenansicht Arbeitswelt

→ Grundbildung für Betriebe und das betriebliche Personalwesen, Werner Kotschenreuther, Beirat im PERSONET, Oberfranken

11:00 Uhr Kaffeepause

11:30 Uhr Kreativ – Workshop

→ Konzepte und Formate für Betriebe – Materialien aus dem Transfer-Projekt GRUBIN "Grundbildung für die berufliche Integration"



Participants of the aim group "Under skilled adult learners" during the test-lessons playing games and having fun.

Programm

Fortsetzung Dienstag, 13.06.2017

13:00 Uhr Mittagessen

14:30 Uhr Stimme und Yoga

→ Resonanz, Artikulation, Sprechspannung

16:30 Uhr Kaffeepause

17:00 Uhr Erster Impuls-Workshop Verbraucherbildung

→ Kombi-Angebote aus der „g'scheit …" Reihe, Tobias Bumblat, Münchner Volkshochschule

18:00 Uhr Abendessen und informeller Austausch

Mittwoch, 14.06.2017

09:00 Uhr Lebensweltbezogene Grundbildung

→ Weitere Konzepte aus der Verbraucher-, Gesundheits- und Umweltbildung, Tobias Bumblat, Münchner Volkshochschule

10:30 Uhr Kaffeepause

11:00 Uhr Mathematik für Erwachsene

→ Konzepte, Spiele und Materialien – math-games.eu, Roland Schneidt, Projektleiter und Vorstand der vhs Schrobenhausen

13:00 Uhr Mittagessen

14:30 Uhr Zweiter Impuls-Workshop Verbraucherbildung

→ Schuldenprävention in einfacher Sprache, Melina Welscher, Schuldner- und Insolvenzberaterin

16:00 Uhr Kaffeepause

16:30 Uhr Kreativ-Workshop

→ Resümee der bisherigen Vorträge und Workshops für die Umsetzung von Konzepten im eigenen Semesterprogramm

18:00 Uhr Abendessen

19:00 Uhr Stimme und Yoga

→ Atmung

Stimme und Yoga

Von Montag bis Freitag erwartet Sie ein Begleitprogramm der besonderen Art am Vormittag, Nachmittag oder auch am Abend für Atmung, Resonanz, Artikulation, Sprechspannung und Stimmtraining mit Sandra Kroemer und Barbara Luderer.

Programm

Donnerstag, 15.06.2017

09:00 Uhr Europäische Agenda Erwachsenenbildung

→ Wege ebnen zur gesellschaftlichen Teilhabe und Chancengleichheit, Hans Georg Rosenstein, Nationale Koordinierungsstelle beim BIBB

10:30 Uhr Kaffeepause

11:00 Uhr Finanzielle Grundbildung

→ Impuls-Vortrag, Sabine Schwarz, Projektleiterin Lernende Region - Netzwerk Köln e.V

13:00 Uhr Mittagessen

14:00 Uhr Stimme und Yoga

→ Resonanz, Artikulation, Sprechspannung

16:00 Kaffeepause

16:30 Uhr Arbeitsorientierte Grundbildung

→ Erfahrungen im Projekt ABAG „Arbeitsplatz-bezogene Alphabetisierung und Grundbildung Erwachsener in der Region Köln", Sabine Schwarz, Projektleiterin Lernende Region - Netzwerk Köln e.V.

18:00 Uhr Abendessen und informeller Austausch

Freitag, 16.06.2017

09:00 Uhr Impuls-Workshop zum digitalen Lernen

→ Erfahrungen, Beispiele und Ergebnisse zur Frage, wie Lehrkräfte und Teilnehmende Angebote für das digitale Lernen nutzen, Dr. Peter Westebbe, Samanthanet GmbH & Co.KG, Seeshaupt

11:00 Uhr Stimme und Yoga

→ Vertiefte Artikulation

13:00 Uhr Gemeinsames Mittagessen zum Ausklang

Flyer to announce the dissemination conference in Buchenried.

Multiplier Event E3.2 in Munich

Erasmus+ Project MathGAMES
Multiplier Event E3.2:
Dissemination Conference in Germany
(Tagung zur Verbreitung von Unterrichtsmaterial)

Date: Friday, 15.09.2017
Time: 14:00 - 18:00
Venue: Meeting rooms of the Bavarian Adult Education Association, Munich
Number of participants: 12
Speaker: Roland Schneidt (roland.schneidt@web.de)

Invited were all lecturers of folk high schools in Bavaria, who are active in the field of basic education (especially in arithmetic). The focus is on using games to teach individual topics of basic mathematical education more motivating. The materials and content of the training have been developed and tested in the European Erasmus + project Math-GAMES (www.math-games.eu) and are now available to all free of charge.

The conference was limited to 30 participants, just 12 persons took part. The conference and the materials handed out were free of charge. If proof is provided, the participants will be reimbursed for the travel costs (2nd class train). To do so, you must enter the name, address, bank details and e-mail address and confirm your presence by signing the list of meetings.
At the end of the session a participant certificate will be issued.

Flyer to announce the dissemination conference in Munich.

Multiplier Event E3.3

Erasmus+ Project MathGAMES Multiplier Event E3.3 and Workshop for Teacher in Adult Education: Young people in vhs, in full-time school or at the transition school and work
Meeting for the dissemination of ideas and teaching materials

Date: 07.12.2017
Time: 10:00 - 17:00
Location: Tagungsräume des Bayerischer Volkshochschulverbandes, München
Number of participants: 30
Speaker: Roland Schneidt (roland.schneidt@web.de) u.a.

Programme

10:00 Reception
10:15 am: Welcome
10:30 am: Key data for the restart in talentCAMPus
11:00 am: Four parallel workshops:

- talentCAMPus: practical examples
- How does the world come to my table? Globalization and World Trade, commit e.V.
- Who am I? And who would I like to become? Value Dialogue Integration - Academy Philosophize children
- Math Games: playfully learning how to calculate

12:30: Lunch
1:30 pm: Metacognitive sound teaching and learning
2:15 pm: KESS - Competence Extern for School and School Life
14:45: Short Presentation Youth Online Event
3:00 pm: Coffee break and change to the next three parallel workshops:

- arguing against the right, N.N. Trainer network parsnips
- simulation Bayern election 2018 (bvv)
- debt prevention for young adults

4:15 pm: Anja Schäfer, BR; "This is how media works" (topic: How do I recognize fake news?)
16:30 clock: Review with a difference
17.00 clock end of the event

Multiplier Event E3.4

Erasmus+ Project MathGAMES Multiplier Event E3.4: Dissemination Conference in Germany (Tagung zur Verbreitung von Unterrichtsmaterial)

Date: Monday, 22.01.2018
Time: 10:00 - 15:00
Venue: Conference rooms of the Niedersächsische Volkshochschulverband, Hannover
Number of participants: 12
Speaker: Roland Schneidt (roland.schneidt@web.de)

Topic: Mathematics and Games - Results of the European Erasmus + project Math-GAMES for motivating teaching in basic mathematical education

This innovative training is aimed at all lecturers who are active in the field of basic education (especially in arithmetic learning). The focus is on using games to teach individual topics of basic mathematical education more motivating. Among other things, a specially developed Math-GAMES methodology and the short curriculum "Learning to Compute in Adult Education" are presented. Practical exercises will be conducted and reflected to make the training fit and effective for the participants.

The materials and content of the training have been developed and tested in the European Erasmus + project Math-GAMES (www.math-games.eu).

The participants of the training receive the Math-GAMES Compendium and the handbook with materials that can be used in class for free (worth about 50 EUR).

Z 180225
Mathematik und Spiele
Ergebnisse des Europäischen Erasmus+ Projektes Math-GAMES zum motivierenden Unterrichten im Bereich der mathematischen Grundbildung
22.01.2018
Hannover

Agentur für Erwachsenen- und Weiterbildung
Postfach 4 73
30004 Hannover

Was Sie beachten müssen (Verfahrensregelungen)

1. Die Teilnahme an den Fortbildungsveranstaltungen der AEWB ist in der Regel für alle Mitarbeiter/-innen in der niedersächsischen Erwachsenen und Weiterbildung offen. Tagungsthema und Angabe eines Adressatenkreises verdeutlichen, für welchen Teilnahmekreis die Veranstaltungen in besonderer Weise geeignet sind.
2. Für die Teilnahme an Fortbildungsveranstaltungen wird ein Teilnahmebeitrag erhoben. Dieser ist gemeinsam mit einer Leistungsbeschreibung der Veranstaltung im Programmheft und den Einladungen ausgewiesen.
3. Anmeldungen zur Mitarbeiterfortbildung müssen schriftlich erfolgen und schließen die Anerkennung dieser Verfahrensregelungen ein. Die zur Bearbeitung und Durchführung der Fortbildungen erforderlichen Angaben werden unter Beachtung der Datenschutzbestimmungen gespeichert.
4. Anmeldungen von Privatpersonen werden nur berücksichtigt, wenn sie eine Einzugsermächtigung für den Teilnahmebeitrag enthalten. Der Lastschrift-Einzug erfolgt durch den Niedersächsischen Bund für freie Erwachsenenbildung (nbeb) nach Durchführung der Veranstaltung. Für Organisationen/ Einrichtungen erfolgt die Rechnungsstellung. Der jeweils angegebene Teilnahmebeitrag kann nicht reduziert werden (auch nicht bei zeitweiser Teilnahme oder Verzicht auf Verpflegung/Übernachtung). Bei mehrteiligen Veranstaltungen wird der Teilnahmebeitrag nach Durchführung des ersten Teils eingezogen.
5. Gebühren, die bei Rücklastschriften auf Grund fehlerhafter oder unvollständiger Angabe zur Bankverbindung entstehen, müssen wir Ihnen leider berechnen. Bitte teilen Sie uns Ihre aktuellen Daten umgehend mit.
6. Die Veranstaltungen finden in der Regel statt, wenn zehn verbindliche Anmeldungen vorliegen. Bei Überbelegung entscheidet die Reihenfolge des Posteingangs über die Annahme. Über die Durchführung einer Fortbildung wird in der Regel 14 Tage vor Veranstaltungsbeginn entschieden.
7. Alle Teilnehmer/-innen erhalten rechtzeitig vor der Veranstaltung eine Bestätigung ihrer Anmeldung sowie Hinweise über Anfahrtsmöglichkeiten und Angaben zum Tagungsort. Falls eine Veranstaltung nicht zustande kommt, erfolgt eine rechtzeitige Absage.
8. Die Anmeldebestätigung gilt in Verbindung mit dem Kontoauszug als Zahlungsnachweis gegenüber dem Finanzamt.
9. Bei Rücktritt von der Anmeldung innerhalb von 10 Tagen vor Veranstaltungsbeginn bzw. Nichterscheinen trotz Anmeldung erhebt die AEWB eine Gebühr in Höhe von 80% des ausgewiesenen Teilnahmebeitrags. Absagen sind direkt an die Agentur zu richten. Bei Rücktritt während eines Lehrgangs kann auf Antrag ein Teil des Teilnahmebeitrags, höchstens jedoch 50%, erstattet werden.
10. Sonderregelungen für einzelne Veranstaltungen sind jeweils dort ausgewiesen.

Bitte teilen Sie uns Änderungen Ihrer Adresse bzw. Bankverbindung umgehend mit, damit keine unnötigen Bankgebühren für Sie entstehen.

AEWB Agentur für Erwachsenen- und Weiterbildung

Die AEWB ist eine organisatorisch selbstständige Stelle nach dem Niedersächsischen Erwachsenenbildungsgesetz (NEBG), die vom Niedersächsischen Bund für freie Erwachsenenbildung (nbeb) getragen wird.

Geschäftsführer: Dr. Martin Dust

Postfach 4 73
30004 Hannover
Bödekerstraße 16
30161 Hannover
Tel. 0511 300330-10
Fax 0511 300330-81
info@aewb-nds.de
www.aewb-nds.de

AEWB Agentur für Erwachsenen- und Weiterbildung

Mathematik und Spiele

Ergebnisse des Europäischen Erasmus+ Projektes Math-GAMES zum motivierenden Unterrichten im Bereich der mathematischen Grundbildung

22.01.2018

Fortbildung
für Mitarbeiterinnen und Mitarbeiter in der niedersächsischen Erwachsenen- und Weiterbildung

Mathematik und Spiele
Ergebnisse des Europäischen Erasmus+ Projektes Math-GAMES zum motivierenden Unterrichten im Bereich der mathematischen Grundbildung

Diese innovative Fortbildung richtet sich an alle Dozentinnen und Dozenten, die im Bereich der Grundbildung (besonders im Rechnen-Lernen) tätig sind.

Der Schwerpunkt liegt darauf, mittels des Einsatzes von Spielen einzelne Themen der Mathematischen Grundbildung motivierender unterrichten zu können. Es wird unter anderem eine speziell entwickelte Math-GAMES Methodik und das Kurz-Curriculum „Rechnen lernen in der Erwachsenenbildung“ vorgestellt.

Praktische Übungen werden durchgeführt und reflektiert, um die Fortbildung passgenau und effektiv für die Teilnehmenden zu gestalten.

Die Materialien und Inhalte der Fortbildung wurden in dem Europäischen Erasmus+ Projekt Math-GAMES (www.math-games.eu) entwickelt und getestet. Die Teilnehmer/-innen der Fortbildung erhalten das Math-GAMES Kompendium und das Handbuch mit Materialien, die im Unterricht eingesetzt werden können kostenlos (im Wert von ca. 50 EUR).

Leitung: Roland Schneidt (Realschuldirektor a. D., stellvertr. Vorstand der VHS Schrobenhausen, europäischer Erasmus+ Projektkoordinator des Projektes Math-GAMES)
Termin/UStd.:
Montag, 22.01.2018,
10:30 Uhr – 15:00 Uhr (6 UStd.)
Ort: Hannover
Kosten: 49,00 EUR (inkl. Verpflegung)
Adressatenkreis: Lehrende, Kursleitende, Trainer/-innen neue Mitarbeiter/-innen in EB-Einrichtungen Pädagogische Mitarbeiter/-innen

Ansprechpartner/-in für diese Veranstaltung:
Oksana Janzen, Tel.: 0511 300330-38
E-Mail: janzen@aewb-nds.de (Inhalte)
Gabriele Pfitzner, Tel.: 0511 300330-15
E-Mail: pfitzner@aewb-nds.de (Organisation)

Das aktuelle Fortbildungsprogramm der AEWB finden Sie unter: **www.aewb-nds.de**

Meine Anmeldung für Z 180225 Pf
Mathematik und Spiele, 22.01.2018

☐ Herr ☐ Frau
Name, Vorname: .....
Meine Postanschrift
☐ privat (Kursleitende bitte immer Privatanschrift angeben)
☐ dienstl.: .....
Straße: .....
PLZ/Ort: .....
Tel.: p.: ..... Tel.: d.: .....
E-Mail: .....
Ich arbeite/Ich unterrichte
☐ an einer öffentl. geförderten EB-Einrichtung (z.B. vhs, eeb, …)
Name der Einrichtung .....
PLZ/Ort: .....
als ☐ Päd. Mitarbeiter/-in ☐ Verwaltungsmitarbeiter/-in
als ☐ Seminar-/Kursleiter/-in ☐ Projekt ☐ anderes
.....
Haupt-Arbeits-/Kursbereich: .....
☐ im Bereich Erwachsenen- und Weiterbildung bei
☐ einer KiTa, Schule ☐ einer Universität, (Fach-)Hochschule
☐ einem Verein, einer gemeinnützigen Einrichtung
☐ einem privaten Anbieter
☐ anderes
.....
Bemerkungen .....
Bitte schicken Sie mir Ihr neues Programm regelmäßig zu: ☐

SEPA-Lastschriftmandat
(Für Organisation/Einrichtung erfolgt die Rechnungsstellung)
Gläubiger-Identifikationsnummer: DE40ZZZ00000361835
Mandatsreferenz: Wird in der Anmeldebestätigung ausgewiesen.
Ich ermächtige den Niedersächsischen Bund für freie Erwachsenenbildung (nbeb), einmalig eine Zahlung bzw. bei Ratenzahlungen wiederkehrend von meinem Konto mittels Lastschrift einzuziehen. Zugleich weise ich mein Kreditinstitut an, die vom Niedersächsischen Bund für freie Erwachsenenbildung (nbeb) auf mein Konto gezogene(n) Lastschrift(en) einzulösen. **Hinweis:** Ich kann innerhalb von acht Wochen, beginnend mit dem Belastungsdatum, die Erstattung des belasteten Betrages verlangen. Es gelten dabei die mit meinem Kreditinstitut vereinbarten Bedingungen.

Vorname u. Name Kontoinhaber/-in

Kreditinstitut/Ort

IBAN: DE _ _ | _ _ _ _ | _ _ _ _ | _ _ _ _ | _ _ _ _ | _ _

Datum, Ort und Unterschrift Kontoinhaber/-in

Flyer to announce the dissemination conference in Hannover.

Z 180188
Angebote in einfacher Sprache – von der Idee zur Umsetzung Praktische Beispiele des Regionalen Grundbildungszentrums Göttingen

Die Alltagskompetenzen Lesen und Schreiben sind nicht für alle Menschen selbstverständlich. Daher gibt es zunehmend Angebote in einfacher Sprache, um diese Menschen zu erreichen.

An drei praktischen, im Regionalen Grundbildungszentrum Göttingen umgesetzten, Beispielen werden die Herangehensweise, die Gewinnung der Kooperationspartner, die Schritte der Umsetzung, die „Produkte" und die Resonanz auf die Angebote vorgestellt und besprochen. Es handelt sich um:

- die Erstellung einer monatlich erscheinenden, regionalen Zeitungsbeilage in einfacher Sprache – die Einrichtung einer Abteilung Leichtes Lesen in der Stadtbibliothek
- das Angebot LEA-Leseklub® – Lesen Einmal Anders – der inklusive Leseklub, entwickelt von KuBus e.V.

Das Seminar soll Anregungen vermitteln und dem Austausch aller Anwesenden dienen, um neue Impulse für die Planung von Aktivitäten in einfacher Sprache zu geben. Ein Fokus liegt dabei auf der verbesserten gesellschaftlichen Teilhabe von Personen mit Problemen in der Grundbildung.

Zeitrahmen: ca. 4 Ust.
(2 ½ – 3 ½ Stunden)

Leitung: RGZ Göttingen
Leitung: Dr. Caroline Kurz
(Koordinatorin Regionales Grundbildungszentrum Göttingen, Projektleiterin KOMPASS²
(Schwerpunkt Grundbildung)),
Gundula Laudin
(Fachbereichsleitung Sprachen und Grundbildung VHS Göttingen)
Adressatenkreis: Lehrende, Kursleitende, Trainer/-innen neue Mitarbeiter/-innen in EB-Einrichtungen, Pädagogische Mitarbeiter/-innen
Info: Gabriele Pfitzner, Tel.: -15

Z 180225
Mathematik und Spiele Ergebnisse des Europäischen Erasmus+ Projektes Math-GAMES zum motivierenden Unterrichten im Bereich der mathematischen Grundbildung

Diese innovative Fortbildung richtet sich an alle Dozentinnen und Dozenten, die im Bereich der Grundbildung (besonders im Rechnen-Lernen) tätig sind. Der Schwerpunkt liegt darauf, mittels des Einsatzes von Spielen einzelne Themen der Mathematischen Grundbildung motivierender unterrichten zu können. Es wird unter anderem eine speziell entwickelte Math-GAMES Methodik und das Kurz-Curriculum „Rechnen lernen in der Erwachsenenbildung" vorgestellt. Praktische Übungen werden durchgeführt und reflektiert, um die Fortbildung passgenau und effektiv für die Teilnehmenden zu gestalten. Die Materialien und Inhalte der Fortbildung wurden in dem Europäischen Erasmus+ Projekt Math-GAMES (**www.math-games.eu**) entwickelt und getestet.

Die Teilnehmer/-innen der Fortbildung erhalten das Math-GAMES Kompendium und das Handbuch mit Materialien, die im Unterricht eingesetzt werden können kostenlos (im Wert von ca. 50 EUR).

Leitung: Roland Schneidt
(Realschuldirektor a.D., stellvertr. Vorstand der VHS Schrobenhausen, europäischer Erasmus+ Projektkoordinator des Projektes Math-GAMES)
Montag, 22.01.2018
10:30 – 15:00 Uhr (6 UStd.)
Hannover
Kosten: 49,00 EUR (inkl. Verpflegung)
Adressatenkreis: Lehrende, Kursleitende, Trainer/-innen neue Mitarbeiter/-innen in EB-Einrichtungen
Pädagogische Mitarbeiter/-innen
Info: Gabriele Pfitzner, Tel.: -15

Z 180181
Lernpatenschaften Einbindung von Ehrenamtlichen in die Grundbildungsarbeit

Das Regionale Grundbildungszentrum Weserbergland stellt das Projekt „Lernpatenschaften" vor. Ehrenamtliche Paten unterstützen in diesem Projekt Lerner beim Lesen, Schreiben und Rechnen.

Die Themen im Überblick:
- Gewinnung und Schulung von Ehrenamtlichen
- Gestaltung von Lernpatenschaften, auch unter besonderen Bedingungen (Jugendanstalt)
- Materialien, Ideen und Anregungen

Leitung: Sabine Herbst
(pädagogische Mitarbeiterin RGZ Weserbergland),
Susanne Schäfer-Dewald
(pädagogische Mitarbeiterin RGZ Weserbergland)
Donnerstag, 08.02.2018
10:00 – 13:30 Uhr (4 UStd.)
Hameln
keine Kosten (ohne Verpflegung)
Adressatenkreis: Pädagogische Mitarbeiter/-innen, Lehrende
Info: Gabriele Pfitzner, Tel.: -15

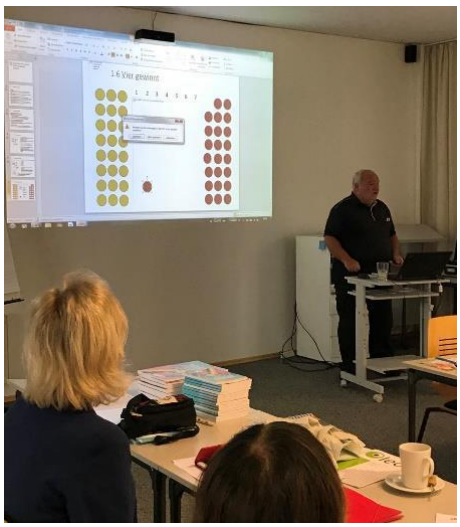
Page 105 of the official teacher training offer in Niedersachsen (Lower Saxony), Germany

Multiplier Event E3.5

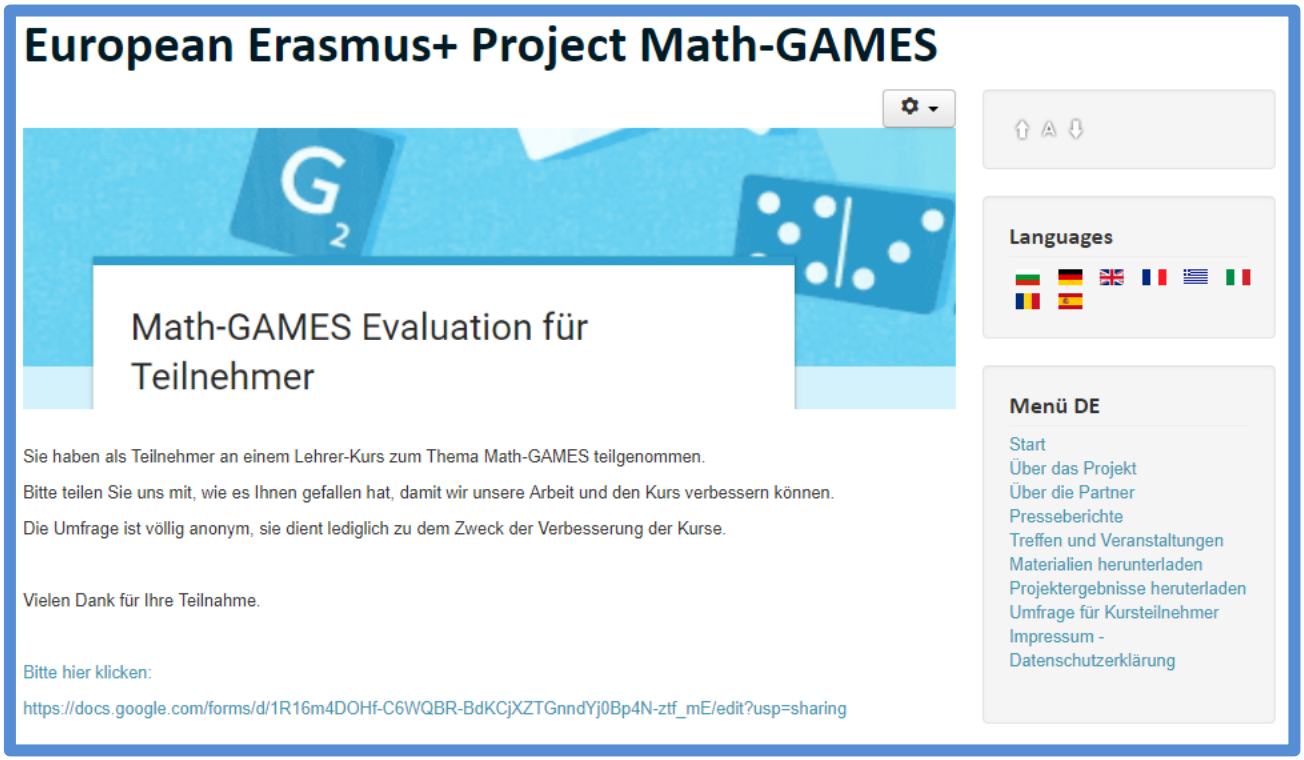
Erasmus+ Project MathGAMES
Multiplier Event E3.5 and Workshop:
Symposium on
"Living in multi-generation houses in Bavaria"
special emphasis on basic education

Exchange meeting on Thursday, May 17, 2018
Welcome: 10.30
Start of the event: 11.00
Lunch: 12:30 - 13:15
End: 4:00 pm
Venue: Meeting rooms of the Bavarian Adult Education Association, Munich
Number of participants: 18
Speaker: Roland Schneidt

Pictures:



Evaluation of the Multiplier Events in Germany



Above you can see the start page for the online evaluation tool. This tool is available in every language and all participants and people involved in the Math-GAMES project used the evaluation tool. The results are shown below for the different dissemination conferences. Also, you can download the results from www.math-games.eu

The online evaluation tool will remain accessible so that our project team can continue to ask users for their opinions.

In Germany, more than 50 persons take part in the above online evaluation, 25 answers are shown in the table.

Evaluation Questions in DE

Evaluation der Fortbildungsveranstaltung zum Projekt Math-GAMES durch die teilnehmenden Lehrkräfte

Stellungnahmen der teilnehmenden Lehrkräfte des Projekts Math-GAMES

Hinweise für die Beantwortung der Fragen

0	hierzu kann ich keine Aussage machen	
1	Zustimmung zur Aussage 0% - 20%	Ich kann selten der Aussage zustimmen
2	Zustimmung zur Aussage 20% - 40%	Ich kann manchmal der Aussage zustimmen
3	Zustimmung zur Aussage 40% - 60%	Ich kann in der Regel der Aussage zustimmen
4	Zustimmung zur Aussage 60% - 80%	Ich kann fast immer der Aussage zustimmen
5	Zustimmung zur Aussage 100% - 80%	Ich kann voll der Aussage zustimmen

Bewertungen des Lernprozesses während der Lehrerfortbildung.

Der Zeitplan des Kurses war mir immer bekannt.
Ich wusste immer was während des Kurses zu tun ist.
Ich fand die vorgegebenen Zeiten für die jeweiligen Arbeitsphasen ausreichend.
Der Referent hat mir immer bei Problemen und Schwierigkeiten geholfen, wenn dies nötig war.
Ich hatte immer Zugriff auf das Lernmaterial des Kurses und auf die Math-GAMES Website.
Ich konnte meine eigenen Ideen einbringen.
Die Zusammenarbeit mit den anderen Kursteilnehmern war sehr vertrauenswürdig.

Bei dieser Fortbildung konnte ich neue Fähigkeiten und Fertigkeiten erwerben.
Ich verstehe jetzt die Math-GAMES Methodik.
Die Lern- und Arbeitsatmosphäre in dieser Fortbildung war für mich angenehm.
Für den Lernprozess während des Kurses möchte ich noch Folgendes sagen: _____

Bewertungen der Bücher und der Ergebnisse der Fortbildung (aus Ihrer persönlichen Sicht)
Das Math-Games-Kompendium ist besonders gut.
Das Math-Games-Guidebook gefällt mir besonders gut.
Die Materialien von Math-Games kann ich in meinem Bereich der Erziehung und Ausbildung verwenden.
Ich bin mir sicher, dass die Materialien in meinem Unterricht langfristig verwendet werden.
Ich glaube, dass die Mathe-Games Materialien anderen Lehrkräften helfen können, Menschen leichter in Mathematik zu unterrichten.
Ich bin mir sicher, dass die Math-GAMES Materialien betroffene Personen motivieren wird, Mathematik zu lernen.
Ich finde die Math-Games Methodik innovativ, da es nichts Vergleichbares gibt.
Ich werde nach meinen Möglichkeiten die Math-Games Idee weiterverbreiten.
Zur Fortbildung möchte ich noch Folgendes sagen: _____

Allgemeine Bewertungen der Lehrerfortbildung.
Ich wurde über das europäischen Erasmus + Programm informiert.
Ich hatte die Möglichkeit, mich mit anderen KursteilnehmerInnen auszutauschen.
Die Räumlichkeit der Lehrerfortbildung war hilfreich für ein gutes Lernklima.
Die eingelegten Pausen waren sinnvoll geplant.
Das angebotene Catering hat die Fortbildung angenehm ergänzt.

Translation of the evaluation questions in EN

Evaluation of the Teacher Training Event in the project Math-GAMES by the participating teachers

Statements by the participating teachers of the Math-GAMES project

You participated as a participant in a teacher course on Math-GAMES.
Please let us know how you liked it so that we can improve our work and the course.
The survey is completely anonymous; it serves only for the purpose of improving the courses.
Thank you for your participation.

Instructions for answering the questions:

0	I cannot make a statement about this	
1	Approval to the statement 0% - 20%	I can seldom agree with the statement
2	Approval to the statement 20% - 40%	I can sometimes agree with the statement
3	Approval to the statement 40% - 60%	I can usually agree with the statement
4	Approval to the statement 60% - 80%	I can almost always agree with the statement
5	Approval to the statement 100% - 80%	I can fully agree with the statement

Assessments of the learning process during teacher training
The schedule of the course was always known to me.
I always knew what to do during the course.
I found the given times for the respective working phases sufficient.
The speaker has always helped me with problems and difficulties, if necessary.
I always had access to the course material and the Math-GAMES website.
I could bring in my own ideas.
The cooperation with the other students was very trustworthy.
With this advanced training, I was able to acquire new skills and skills.
I now understand the Math-GAMES methodology.
The learning and working atmosphere in this advanced training was pleasant for me.
To the learning process during the course, I would like to note the following: _____

Reviews of the books and the results of the training from my personal point of view

The Math Games Compendium is especially good.
I like the Math Games Guidebook especially well.
The materials of Math Games can be used in my area of education and training.
I am sure that the materials used in my lessons will be used in the long term.
I believe the math games materials can help other teachers to teach people more easily in mathematics.
I am sure Math-GAMES materials will motivate affected individuals to learn mathematics.
I find the Math Games methodology innovative, since there is nothing comparable.
I will continue to distribute the Math Games idea as far as I can.
For further training I would like to say the following in general: _____

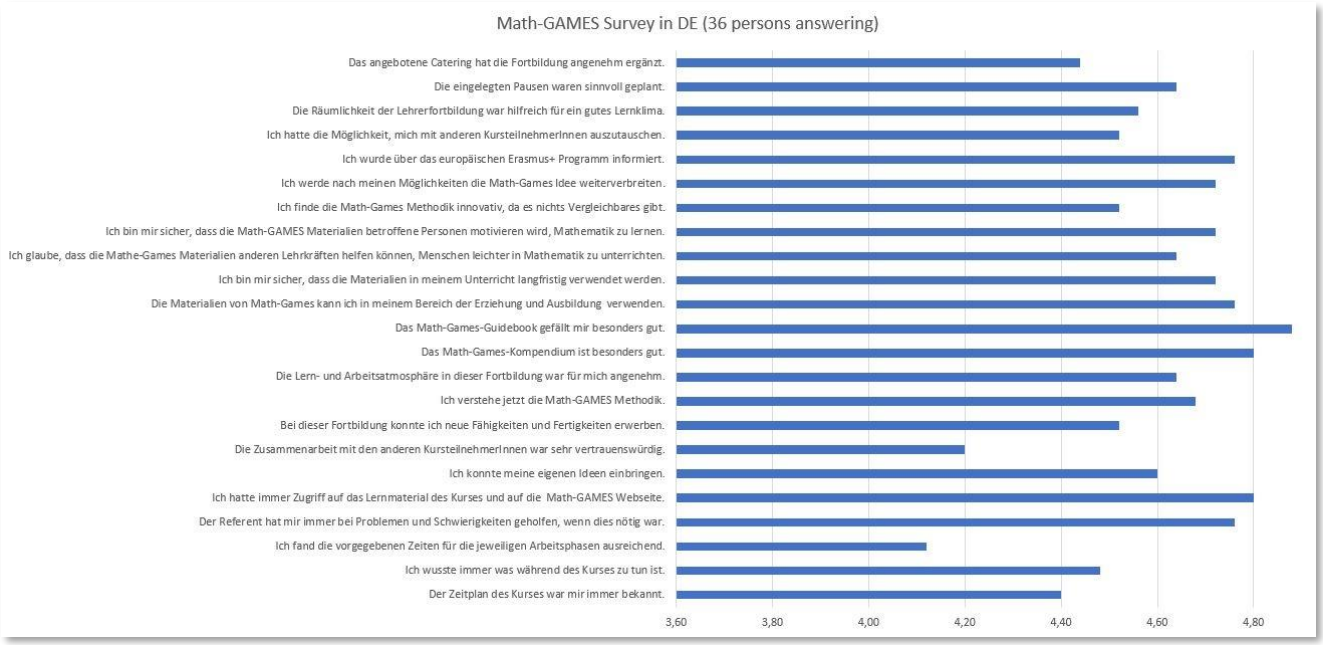
General assessments of this teacher training

I was informed about the European Erasmus+ program.
I had the opportunity to exchange with other participants.
The spaciousness of the teacher training was helpful for a good learning climate.
The breaks were sensibly planned.
The offered catering has very well supplemented the training.

Answers of the online evaluation
Shown are only 25 answers from 50, the order of the questions is reversed.

Questions	Average	Answers																							
Der Zeitplan des Kurses war mir immer bekannt.	4,40	5	5	5	4	4	5	1	5	5	4	5	5	5	4	4	5	5	4	5	1	5	5	5	4
Ich wusste immer was während des Kurses zu tun ist.	4,48	5	5	5	5	3	5	2	5	5	5	4	5	4	4	5	5	5	5	5	2	5	5	5	3
Ich fand die vorgegebenen Zeiten für die jeweiligen Arbeitsphasen ausreichend.	4,12	4	3	3	4	3	5	4	5	4	4	4	5	4	5	5	4	4	4	5	4	5	4	4	3
Der Referent hat mir immer bei Problemen und Schwierigkeiten geholfen, wenn dies nötig war.	4,76	5	5	5	5	5	5	4	5	5	5	5	4	4	4	4	5	5	5	5	4	5	5	5	5
Ich hatte immer Zugriff auf das Lernmaterial des Kurses und auf die Math-GAMES Webseite.	4,80	5	5	5	5	5	5	4	5	5	5	5	4	5	4	4	5	5	5	5	4	5	5	5	5
Ich konnte meine eigenen Ideen einbringen.	4,60	4	5	5	5	5	5	3	5	5	5	4	5	5	5	5	5	4	5	5	0	5	5	5	5
Die Zusammenarbeit mit den anderen KursteilnehmerInnen war sehr vertrauenswürdig.	4,20	4	5	5	4	3	5	2	5	5	4	4	4	4	4	4	5	4	4	5	2	5	5	5	3
Bei dieser Fortbildung konnte ich neue Fähigkeiten und Fertigkeiten erwerben.	4,52	5	5	5	5	5	5	2	5	5	4	4	4	4	4	4	5	5	5	5	2	5	5	5	5
Ich verstehe jetzt die Math-GAMES Methodik.	4,68	5	5	5	5	5	5	3	5	5	4	5	5	5	5	5	5	5	5	5	0	5	5	5	5
Die Lern- und Arbeitsatmosphäre in dieser Fortbildung war für mich angenehm.	4,64	5	5	5	5	4	5	3	5	5	5	4	5	5	5	4	5	5	5	5	2	5	5	5	4
Das Math-Games-Kompendium ist besonders gut.	4,80	5	5	5	5	5	4	5	5	5	5	4	5	4	4	5	5	5	5	4	5	5	5	5	5
Das Math-Games-Guidebook gefällt mir besonders gut.	4,88	5	5	5	5	5	5	5	5	4	4	5	4	5	5	5	5	5	5	5	5	5	5	5	5
Die Materialien von Math-Games kann ich in meinem Bereich der Erziehung und Ausbildung verwenden.	4,76	5	5	5	5	5	5	3	5	5	5	5	4	5	5	4	5	5	5	5	3	5	5	5	5
Ich bin mir sicher, dass die Materialien in meinem Unterricht langfristig verwendet werden.	4,72	4	5	5	5	5	5	4	5	5	5	5	4	5	4	4	5	4	5	5	4	5	5	5	5
Ich glaube, dass die Mathe-Games Materialien anderen Lehrkräften helfen können, Menschen leichter in Mathematik zu unterrichten.	4,64	5	5	5	5	4	4	3	5	5	5	4	5	5	5	5	5	5	5	4	3	5	5	5	4
Ich bin mir sicher, dass die Math-GAMES Materialien betroffene Personen motivieren wird, Mathematik zu lernen.	4,72	5	5	5	5	5	4	4	5	5	4	4	5	5	4	5	5	5	5	5	4	4	5	5	5	5
Ich finde die Math-Games Methodik innovativ, da es nichts Vergleichbares gibt.	4,52	5	5	5	5	3	4	3	5	5	4	5	5	5	5	4	5	5	5	5	4	3	5	5	5	3
Ich werde nach meinen Möglichkeiten die Math-Games Idee weiterverbreiten.	4,72	4	5	5	5	5	4	4	5	5	5	5	5	4	5	5	5	4	5	4	4	4	5	5	5	5
Ich wurde über das europäischen Erasmus+ Programm informiert.	4,76	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5
Ich hatte die Möglichkeit, mich mit anderen KursteilnehmerInnen auszutauschen.	4,52	3	5	5	5	4	5	5	5	5	4	4	4	4	4	4	5	3	5	5	5	5	5	5	4
Die Räumlichkeit der Lehrerfortbildung war hilfreich für ein gutes Lernklima.	4,56	4	5	5	5	3	5	4	5	5	5	4	5	4	4	4	5	5	4	5	5	4	5	5	5	3
Die eingelegten Pausen waren sinnvoll geplant.	4,64	5	5	5	5	2	5	5	5	5	4	5	4	5	4	5	5	5	5	5	5	5	5	5	2
Das angebotene Catering hat die Fortbildung angenehm ergänzt.	4,44	5	4	4	5	0	5	5	5	5	4	5	4	5	5	5	5	5	5	5	5	5	5	5	0

Answers of the online evaluation in a diagram



Summary of the online evaluation

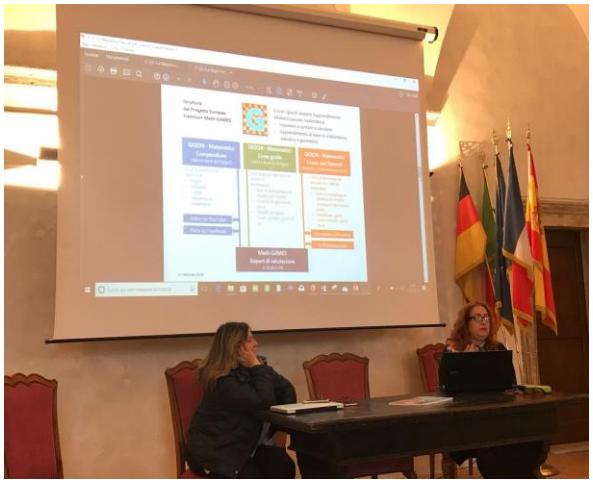
- In all countries involved in the Math-GAMES project Bulgaria, Germany, France, Greece, Italy, Romania, Spain and Cyprus, the content-identical questionnaires were offered online in the respective national language and answered by the participants in the Multiplier Events.
- The evaluation given here was made on the key date 15.04.2018
- The questionnaires are still online, so new answers can be added.
- Coincidentally, there was an overwhelming satisfaction with the project, the project contents and the respective event.
- Each question had scores **between 1 and 5**, which would be an average of 3.0. In the real answers in Germany, however, the **average was between 4.12 and 4.88**, which means that an overly large approval of the questions could be achieved.
- It was particularly pleasing that the largest approvals lay in the material produced. Thus, the Math GAMES compendium reached an approval of **4.8** and the manual even **4.88** of 5 as a maximum.
- The worst value of 4.12 on average of the answers was the question of whether there was always enough time available in the work phases. But still this value is very satisfactory.

REPORT ABOUT THE IMPLEMENTATION, TESTING AND EVALUATION OF THE MATH-GAMES MULTIPLIER EVENT (DISSEMINATION CONFERENCE) E4 IN ITALY

Logo and official Name of the Math-GAMES-Project-Partner:
ISTITUTO COMPRENSIVO CENA
Name and e-Mail-Address of the contact person:
DOMELITA DI MAGGIO, domelita.dimaggio@gmail.com

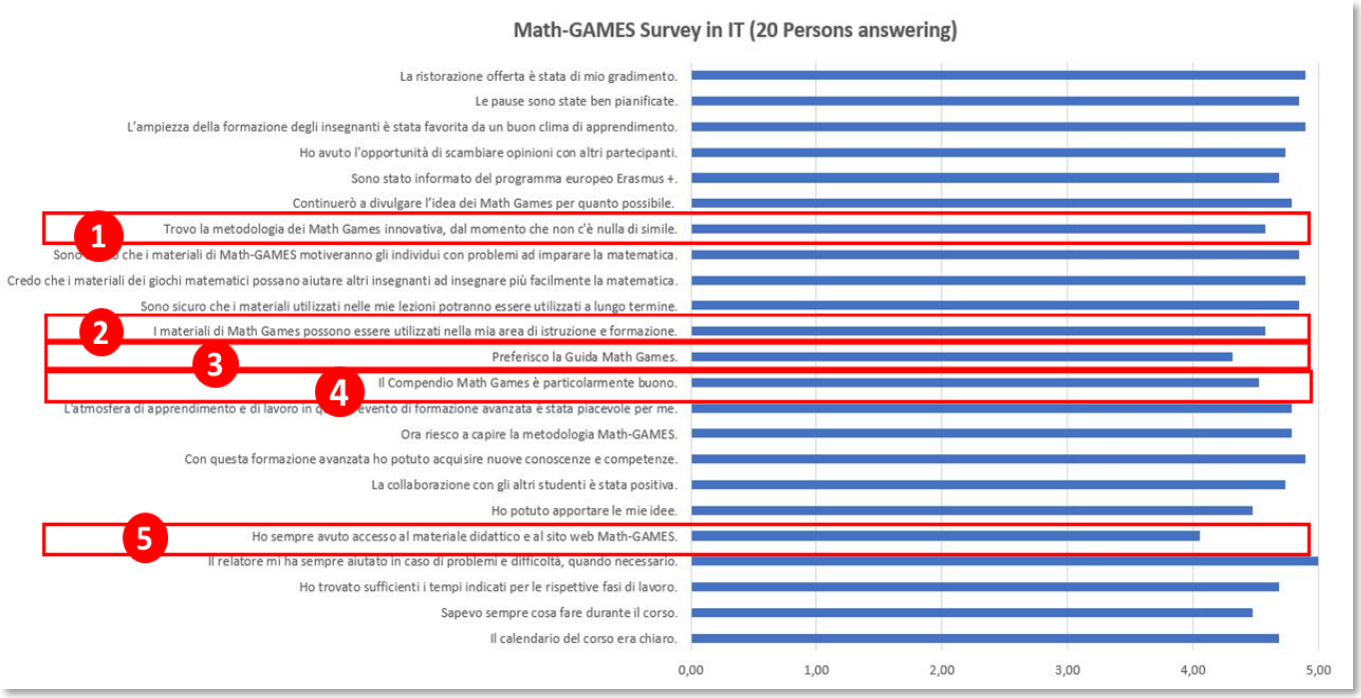
The following Multiplier Event/Events E4 took place in Italy on 17.02.2018

Date: 17.02.2018 Place: Cerveteri/Roma/Italy Number of Persons: 25



Evaluation of the Multiplier Event

Results of the online-evaluation (Diagram)



Summary of the online evaluation

Most of the answers are high value rated, despite expectations. These values are even more impressive if we consider that the conference took place on Saturday, when most of the schools are closed. The items that have received a slightly lower evaluation are the following:

1. I find the Math Games methodology innovative since there is nothing comparable
2. The Math games materials can be used in my education and training area
3. I prefer the Math Games guide
4. The Math Games Compendium was especially good
5. I have always had access to the course material and the Math-Games website

In relation to point 1 everyone doesn't agree because there are many theories about the educational dimension of the game, so many teachers use the strategy of the game for educational and didactic purposes even if not in a structured way.

In relation to point 2, it should be noted that in Italy not all primary school teachers are involved in Maths teaching; in addition, the percentage of those who gave a lower value is congruent to the percentage of participants who are secondary school teachers of other disciplines: even if interested in the conference, they will not be able to use the material in their lessons.

Regarding the points 3 and 4, it is necessary to consider that most of the participants come from the primary school where a Maths lesson starts from far away, especially if it is a game: from information, from experience... so the compendium itself can be useful for several reasons:

A. The teacher wants to be sure of choosing the right game that he will develop with the pupils: instructions for the game, objectives, strategies but also history, curiosity, such as other information, are all useful items
B. The teacher who does not need the lesson ready, can find in the compendium many ideas and the information to prepare the lesson
C. Teachers who gave the value 3 to the item "I prefer the Math Games Guide", gave 5 to the item "The Math Games Compendium was particularly good", so we can deduce that this is a personal choice of teaching approach.

Regarding the point 5 we can observe that - due to the lack of internet connection during the conference - the contents of the website were shown through a personal connection with the mobile. The participants therefore did not have access except from their own devices.

REPORT ABOUT THE IMPLEMENTATION, TESTING AND EVALUATION OF THE MATH-GAMES MULTIPLIER EVENT (DISSEMINATION CONFERENCE) E5 IN SPAIN

Official Name of the Math-GAMES Project Partner:
Centre de Formació de Persones Adultes FPA Beniassent

Name and e-mail address of the contact person:
Cristina Llorens Berenguer, cristillobe@hotmail.com

The following Multiplier Event E5 took place in Spain on 17th of November 2017

Date: 17.11.2017 **Place:** Cocentaina, Casa de la Joventut **Number of Persons:** 30

Report and Evaluation about the Math Games Conference FPA Beniassent–Spain 17.11.2017

PROGRAMME OF THE MATH-GAMES CONFERENCE IN SPAIN

- 09.00 - 09.30 Reception and delivery of materials
- 09.30 - 09.45 Welcome by Cefire / FPA Beniassent
- 09.45 - 11.15 Presentation of the Project Math-Games
- 11.15 - 11.45 Coffee break
- 11.45 - 14.00 Examples of how the games have been worked out and how to work with students
- 14.00 - 15.30 Lunch
- 15.30 - 19.00 Working in groups and with practical experiences
- 19.00 - 19.30 Evaluation and proposals for improvement

Development

We started the conference program at 9:00 a.m. handing out the Math-GAMES materials to the participants and introducing the training day with a few words of welcome from the headmaster of FPA Beniassent, Jaume Llopis and the adult education training advisor in the CEFIRE-Gandia (Teacher Training Service), Aurelia Rubio.

The participants (5 from our institution and 25 from other institutions) were all teachers but from diverse backgrounds: Adult Education Centres (FPA), Secondary Education Schools (IES), Primary Education Schools (CEIP), Adult Training Service (CEFIRE), and Technicians from Educational Services (Conselleria d'Educació). They had one thing in common: all of them were involved in the teaching of mathematics and all of them were interested in knowing the methodology of Math-Games.

After the speech, we invited all the participants to take part in a funny competition. They had to learn to play the game NIM and then play this game against the same opponent 3 times. Those who won the first phase of the game, could play against another opponent and so on, until only two participants played the grand finale.

This beginning caused a good atmosphere among the participants: they knew each other, they relaxed and they became more receptive to understand the following information.

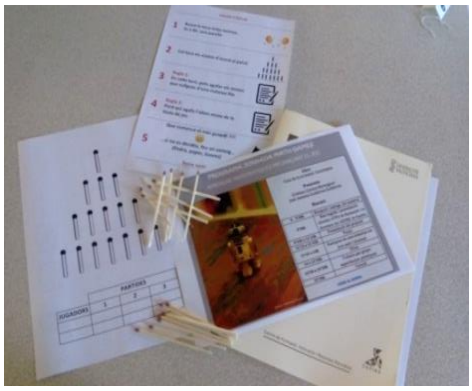
Then we showed the ppt presentation of the game NIM and they could look at the correspondent pages in the Guidebook.When all the questions from the participants were answered, we had a coffee break. After the coffee break, we made the presentation of the whole project and the web-page.

During the midday break we had lunch and we did a short visit to the Public Library that was next to the place for the training course.

In the afternoon we presented the work done in our school using the Math-Games methodology in some groups of students from various levels during the school years 2015-2016 and 2016-2017.

Later, they were organized in groups, couples or individuals for playing some of the games proposed in the Guidebook, so they could experience the work for themselves. They had to build their own materials to play some games and they also filled the worksheets.

Finally, we promoted a debate about how to use the Math-Games methodology in their lessons.



Evaluation

The participants did their evaluation on-line. After the Multiplier Event E5, the organizers also did their own evaluation about the conference with these conclusions:

- Participants enjoyed playing the games.
- The participants showed they were interested in the Math-Games methodology by making questions about the project.
- Some of the participants appreciated the work done in the development of the conclusive results.
- Some of the participants made questions about the use of Math-Games methodology in our lessons.
- We hadn't enough time to explain more about our experience in an Erasmus+ project.
- Most of the participants were interested in applying this methodology in their own lessons.
- The teacher training course finished with the commitment for using and spreading the methodology of Math-Games Project in our region.





Pictures from the Dissemination-Conference

Almost all the participants from outside or inside our organization filled in the evaluation printed on paper. Due to the lack of computers in the conference room, we printed the evaluation form and we made copies for everybody participating in the conference. So, after it, we transferred the answers into the on-line form.

Avaluació del Curs de Formació del Professorat del projecte Math-GAMES per al professorat participant

Vosté ha participat en un curs de formació per al professorat del projecte Math-GAMES. Per favor, faça'ns saber la seua opinió perquè puguem millorar el nostre treball i el curs de formació. L'enquesta és completament anònima; es realitza amb l'únic propòsit de millorar els cursos. Gràcies per la seua participació.

Instruccions per a respondre les preguntes:

0	No puc fer cap declaració sobre açò	
1	D'acord amb l'enunciat 0% - 20%	No estic totalment d'acord amb aquest enunciat
2	D'acord amb l'enunciat 20% - 40%	A vegades estic d'acord amb aquest enunciat
3	D'acord amb l'enunciat 40% - 60%	Habitualment estic d'acord amb aquest enunciat
4	D'acord amb l'enunciat 60% - 80%	Quasi sempre estic d'acord amb aquest enunciat
5	D'acord amb l'enunciat 80% - 100%	Estic totalment d'acord amb aquest enunciat

Declaracions del professorat participant en el curs de formació del projecte Math-GAMES

Avaluació del procés d'aprenentatge durant el curs de formació del professorat	**0**	**1**	**2**	**3**	**4**	**5**
L'horari del curs sempre ha sigut conegut per mi.						
Sempre he sabut què fer durant el curs.						
Els temps donats per a les respectives fases del treball han sigut suficients.						
El ponent sempre m'ha ajudat amb els problemes i dificultats, si ho he necessitat.						
Sempre he tingut accés al material del curs i al portal web de Math-GAMES.						
He pogut aportar les meues idees.						
La cooperació amb els altres participants ha sigut eficaç.						
Este curs de formació m'ha ajudat a adquirir noves destresses.						
Ara entenc la metodologia de Math-GAMES.						
L'ambient d'aprenentatge i treball durant el curs m'ha paregut agradable.						
Respecte al procés d'aprenentatge durant el curs, voldria dir el següent:						

Revisió dels llibres i dels resultats de la formació des del meu punt de vista personal	**0**	**1**	**2**	**3**	**4**	**5**
El Compendi de Jocs Matemàtics és especialment bo.						
M'agrada especialment la Guia de Jocs Matemàtics.						
Els materials del projecte Math-GAMES es poden utilitzar en la meua àrea d'educació i formació.						
De segur que els materials utilitzats en les meues classes seran útils a llarg termini.						
Crec que els materials del projecte poden ajudar d'altres docents a fer més fàcil l'aprenentatge de les matemàtiques.						
De segur que els materials del projecte Math-GAMES motivaran l'alumnat amb dificultats per a aprendre matemàtiques.						
La metodologia del projecte Math-GAMES és innovadora, perquè no hi ha res comparable.						
Continuaré difonent la idea del projecte Math-GAMES sempre que siga possible.						
Sobre els materials utilitzats, voldria dir el següent:						

Avaluació general del curs de formació	**0**	**1**	**2**	**3**	**4**	**5**
He sigut informat sobre el Programa Europeu Erasmus+.						
He tingut l'oportunitat d'intercanviar informació amb d'altres participants.						
L'espai on s'ha realitzat el curs de formació ha contribuït a crear un bon clima d'aprenentatge.						
Els descansos han estat planificats de forma adequada.						
El càtering oferit ha complementat favorablement la formació.						

Vaig participar en el curs de formació del professorat del projecte Math-GAMES en este dia: _____

This is the evaluation form in Valencian language that was handed out to the participants in the course.

Results of the online-evaluation (Table and Diagram)

This is the table with the questions and the answers given by 23 participants in the conference that took place in Spain.

Questions	Average	Answers																						
El horario del curso siempre fue conocido por mí.	4,77	4	5	5	5	5	5	5	5	5	5	5	5	4	5	5	3	5	5	4	5	5
Siempre supe qué hacer durante el curso.	4,50	4	4	5	4	5	5	5	5	5	5	4	5	4	4	3	4	3	5	5	5	5	5
Encontré suficientes los tiempos dados para las respectivas fases de trabajo.	4,68	4	4	5	5	5	5	5	4	5	5	4	5	5	5	5	5	3	5	5	5	5	4
El orador siempre me ayudó con los problemas y dificultades, si lo necesité.	4,91	5	5	5	5	5	5	5	4	5	5	4	5	5	5	5	5	5	5	5	5	5	5
Siempre tuve acceso al material del curso y al sitio web de Math-GAMES.	4,95	5	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Pude aportar mis propias ideas.	4,45	5	3	4	5	5	5	5	5	5	5	4	4	0	5	5	5	5	5	5	4	5	4
La cooperación con los otros estudiantes fue eficaz.	4,82	4	4	5	5	5	5	5	5	5	5	4	4	5	5	5	5	5	5	5	5	5	5
Este curso de formación me ayudó a adquirir nuevas destrezas.	4,27	1	3	5	5	4	5	5	5	5	5	3	5	5	3	3	4	4	5	5	5	4	5
Ahora entiendo la metodología de Math-GAMES.	4,68	3	4	5	5	4	5	5	5	5	5	4	4	5	4	5	5	5	5	5	5	5	5
El ambiente de aprendizaje y trabajo durante el curso me pareció agradable.	4,82	2	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
El Compendio de Juegos Matemáticos es especialmente bueno.	4,27	1	5	5	5	5	5	4	4	5	3	5	4	4	3	3	4	5	5	5	5	4
Me gusta especialmente la Guía de Juegos Matemáticos.	4,27	0	5	4	5	5	5	5	4	5	5	3	5	4	4	3	3	4	5	5	5	5	5
Los materiales del proyecto Math-GAMES se pueden utilizar en mi área de educación y formación.	4,32	0	5	5	5	5	5	5	4	4	5	3	5	5	3	3	4	5	5	5	5	4	5
Estoy seguro de que los materiales utilizados en mis lecciones serán útiles a largo plazo.	4,27	0	5	4	5	4	5	5	5	4	5	3	5	5	3	3	4	4	5	5	5	5	5
Creo que los materiales del proyecto pueden ayudar a otros profesores a hacer más fácil el aprendizaje de las matemáticas.	4,55	1	5	4	5	4	5	5	4	5	5	4	5	5	4	5	4	5	5	5	5	5	5
Estoy seguro de que los materiales del proyecto Math-GAMES motivarán a las personas para aprender matemáticas.	4,50	2	5	4	5	5	5	5	5	5	5	3	5	5	4	5	4	3	5	5	5	4	5
La metodología del proyecto Math-GAMES es innovadora, ya que no hay nada comparable.	4,00	3	5	5	4	3	5	5	4	3	5	2	5	4	4	3	3	5	5	4	4	4	3
Continuaré difundiendo la idea del proyecto Math-GAMES en la medida de lo posible.	4,64	4	5	4	5	4	5	5	5	4	5	3	5	5	4	5	4	5	5	5	5	5	5
Me informaron sobre el Programa Europeo Erasmus+.	4,55	4	4	4	5	5	5	5	5	4	5	3	4	5	4	5	4	5	5	5	5	5	4
Tuve la oportunidad de intercambiar información con otros participantes.	4,32	1	4	4	5	5	5	5	3	5	5	5	5	5	4	3	3	5	5	4	5	5	4
El espacio donde se realizó el curso de formación ayudó a crear un buen clima de aprendizaje.	4,82	2	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Los descansos fueron planificados con sensatez.	4,64	3	4	5	4	5	5	5	5	5	5	5	5	5	3	5	5	3	5	5	5	5	5
El almuerzo ofrecido complementó favorablemente el entrenamiento.	4,91	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5

Summary of the online evaluation

- The results of the online evaluation show a very good general acceptance of the conference. The average in every question is punctuated over 4 in a maximum of 5.
- The most valued was the environment created during the conference and the collaboration among the participants themselves and with the trainers.
- Other answers show a good feeling about the materials, especially those materials that are accessible from the webpage.

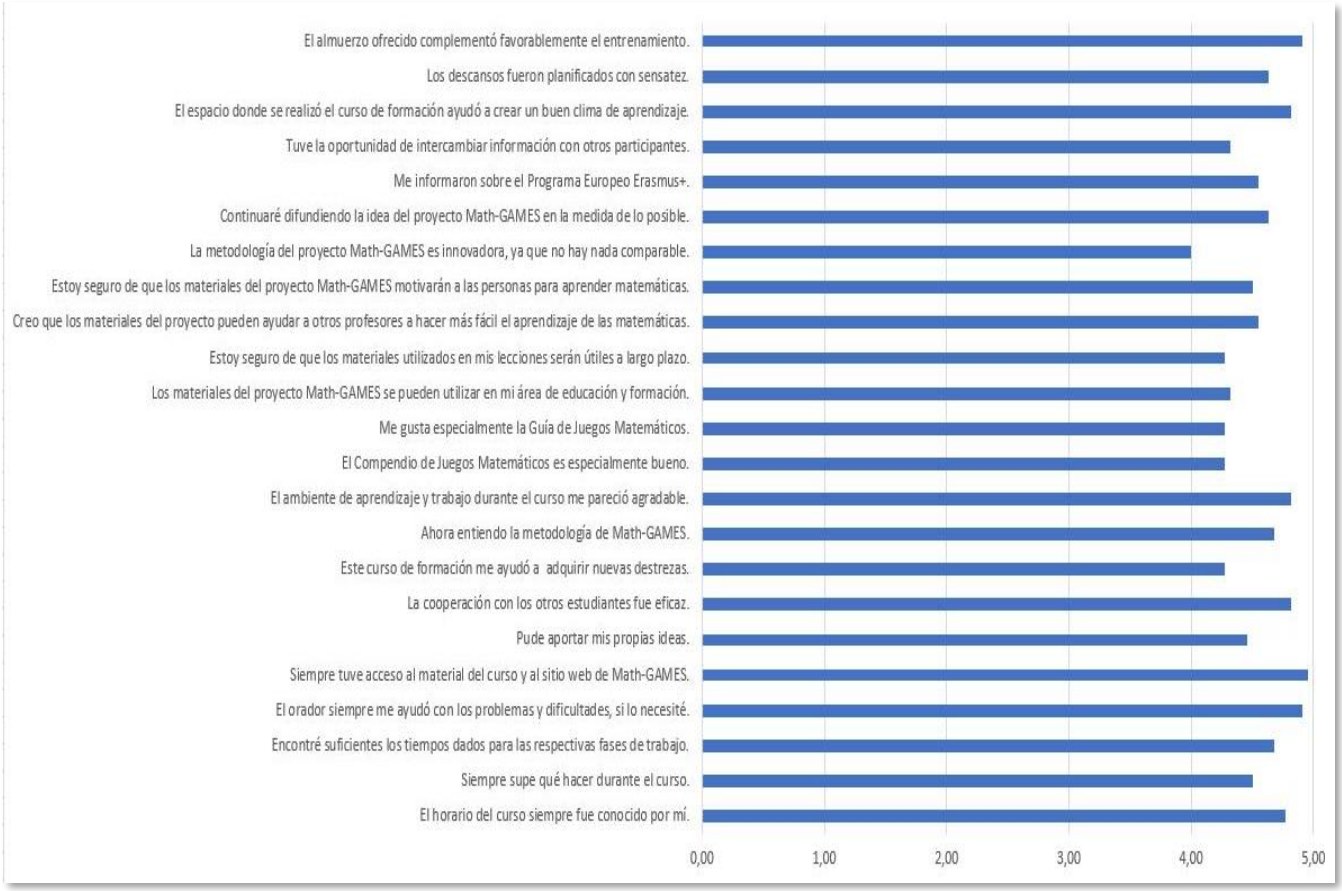


Diagram with the results of the on-line evaluation of the conference in Spain

Summary of the online evaluation

The results in the graphics above are consistent with our impressions during the development of the conference.

- Participants enjoyed playing the games.
- The participants showed they were interested in the Math-Games methodology by asking questions about the project.
- Some of the participants appreciated the work done in the development of the conclusive results.
- Some of the participants asked questions about the use of Math-Games methodology in our lessons.
- We hadn't enough time to explain more about our experience in an Erasmus+ project.
- Most of the participants were interested in applying this methodology in their own lessons.
- The teacher training course finished with the commitment for using and spreading the methodology of Math-Games Project in our region.

In general, people were interested in the topic of the conference. I would especially emphasize the good atmosphere caused by playing the games that allowed a relaxed and participatory relationship among the attendees.
The results were very satisfactory, and we can say that the Teachers Training Course in Spain was successful and fulfilled our expectations.

REPORT ABOUT THE IMPLEMENTATION, TESTING AND EVALUATION OF THE MATH-GAMES MULTIPLIER EVENT (DISSEMINATION CONFERENCE) E7 IN FRANCE

Official Name of the Math-GAMES-Project-Partner:
Connexion Roumanie
Name and e-Mail-Address of the contact person:
Catalina Voican, catalinavoican@gmail.com

The following Multiplier Event took place in France on the 07.11.2017

Date: 07.11.2017 Place: Paris, Maison des associations du VIIIème arrondissement Number of Persons: 29

Description of the Multiplier Event

EVENT PREPARATION

The printing of the Compendium and the Guide allowed us to start preparing the Dissemination Meeting.
For the conference besides the classic dissemination materials (e.g. poster, logo), we prepared Math-Games CDs with the project materials and the French version of the books in paper and electronic format. For the conference day our facilitators prepared the presentation of the pétanque and Rock, paper, scissors games.

DETAILS OF THE DISSEMINATION CONFERENCE

Location: Paris, Maison des associations du 8ème arrondissement.
Date: Tuesday, November 7, 2017, 17.00-21.00
Organizer: Connexion Roumanie Association, French partner in the project.
Participants: 29 participants, mostly persons involved in adult education activities like for example adult alphabetisation and math students, members of other Parisian NGOs. The French coordinator, Catalina Voican, made the general presentation of the project and of the used methodology. The practical cases were presented in collaboration with Robert Adam as trainer and Robert Owstroski as facilitator.
The conference was organised in the wake of another conference organized by Connexion Roumanie the same day, to create synergies. The multiplier event was organized in a closed format, only for registered participants.

CONFERENCE PROGRAM

17.00 Registration of participants
17.30 Opening of the dissemination event
18.00 Presentation of the Math-Games project, exercises, presentation and launch of the books „Compendium" and „Guide Mathematical Games in Adult Education".
20.30 The on-line survey evaluation of the event.

CONCLUSIONS

The dissemination conference was a success and the assistance appreciated the quality of the presentation items.
The participants with background in the adult education had two main observations:

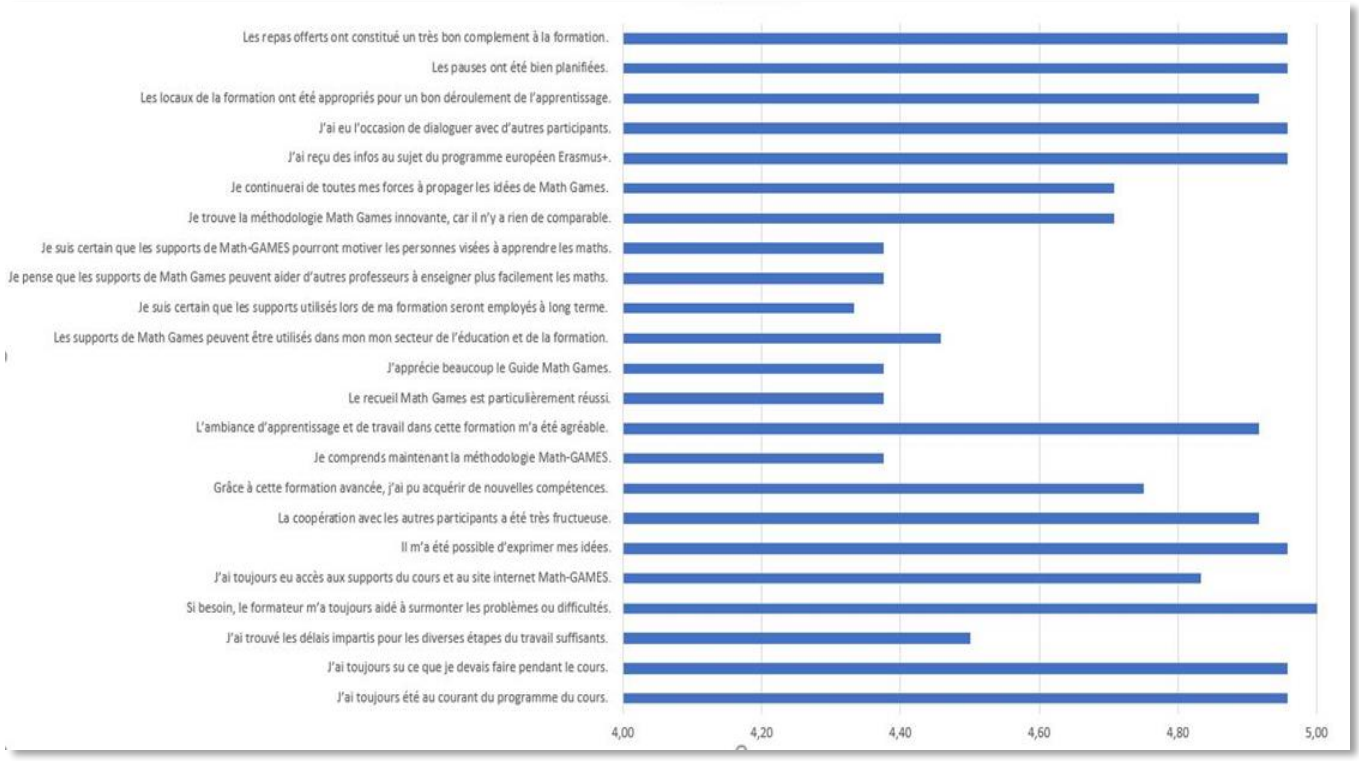
1. They appreciated the social and socialisation aspect of the exercise. They considered that the petanque exercises for instance can be used as an ice breaker, to stimulate the adult participants in a class interact easier and quicker, and to teach foreign participants, like migrants, something about the French customs.
2. They found that the linguistic aspect of the exercise is more useful than the mathematical one. The mathematical content is generally known to an adult and facilitates the learning of the specific vocabulary.

The participants with a maths background found the books and the methodology useful in teaching to young children. The basic info and skills are presented in a ludic and joyful manner.

Evaluation of the Multiplier Event

Results of the online-evaluation (Table and Diagram)

Questions	Average	Answers
J'ai toujours été au courant du programme du cours.	4,96	5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
J'ai toujours su ce que je devais faire pendant le cours.	4,96	5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
J'ai trouvé les délais impartis pour les diverses étapes du travail suffisants.	4,50	4 4 4 5 4 3 5 5 5 5 4 5 5 5 5 4 5 5 4 3 5 4
Si besoin, le formateur m'a toujours aidé à surmonter les problèmes ou difficultés.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
J'ai toujours eu accès aux supports du cours et au site internet Math-GAMES.	4,83	4 4 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Il m'a été possible d'exprimer mes idées.	4,96	5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
La coopération avec les autres participants a été très fructueuse.	4,92	5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5
Grâce à cette formation avancée, j'ai pu acquérir de nouvelles compétences.	4,75	5 5 5 5 5 5 5 5 5 5 5 5 5 3 5 5 5 3 5 5 4 4 5 5
Je comprends maintenant la méthodologie Math-GAMES.	4,38	5 4 4 4 3 4 5 5 5 5 3 5 3 5 5 5 4 5 5 4 4 4 4
L'ambiance d'apprentissage et de travail dans cette formation m'a été agréable.	4,92	5 5 5 5 5 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5
Le recueil Math Games est particulièrement réussi.	4,38	4 4 4 4 3 5 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4
J'apprécie beaucoup le Guide Math Games.	4,38	4 4 4 4 4 5 4 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4
Les supports de Math Games peuvent être utilisés dans mon mon secteur de l'éducation et de la formation.	4,46	5 5 4 4 4 4 4 5 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4
Je suis certain que les supports utilisés lors de ma formation seront employés à long terme.	4,33	4 4 4 4 4 4 4 5 5 5 5 4 4 4 3 5 5 5 4 5 5 4 4 4 4
Je pense que les supports de Math Games peuvent aider d'autres professeurs à enseigner plus facilement les maths.	4,38	4 4 4 4 4 5 4 5 5 5 5 4 4 4 3 5 5 5 4 5 5 4 4 4 4
Je suis certain que les supports de Math-GAMES pourront motiver les personnes visées à apprendre les maths.	4,38	4 4 4 4 4 5 4 5 5 5 5 4 4 4 3 5 5 5 4 5 5 4 4 4 4
Je trouve la méthodologie Math Games innovante, car il n'y a rien de comparable.	4,71	5 5 5 5 5 5 5 5 5 5 5 5 5 5 3 5 5 5 4 5 5 4 4 4 4
Je continuerai de toutes mes forces à propager les idées de Math Games.	4,71	5 5 5 5 5 5 4 5 5 5 5 5 5 5 3 5 5 5 4 5 5 4 5 4 4
J'ai reçu des infos au sujet du programme européen Erasmus+.	4,96	5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
J'ai eu l'occasion de dialoguer avec d'autres participants.	4,96	5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Les locaux de la formation ont été appropriés pour un bon déroulement de l'apprentissage.	4,92	5 5 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Les pauses ont été bien planifiées.	4,96	5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Les repas offerts ont constitué un très bon complement à la formation.	4,96	5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5



Summary of the online evaluation

In general, the results were very good. The notation was over 4,50/5 for all the questions except 7:

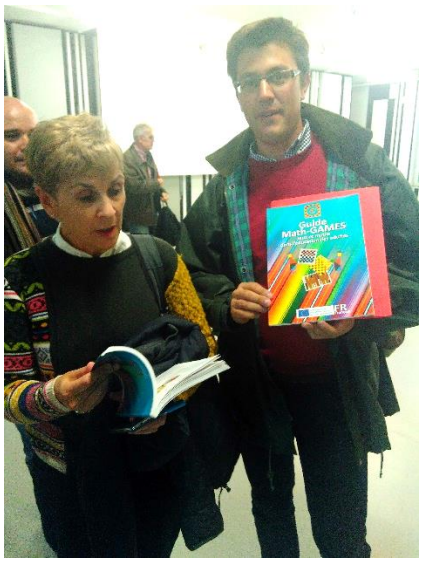
Je comprends maintenant la méthodologie Math-GAMES.	4,38
Le recueil Math Games est particulièrement réussi.	4,38
J'apprécie beaucoup le Guide Math Games.	4,38
Les supports de Math Games peuvent être utilisés dans mon secteur de l'éducation et de la formation.	4,46
Je suis certain que les supports utilisés lors de ma formation seront employés à long terme.	4,33
Je pense que les supports de Math Games peuvent aider d'autres professeurs à enseigner plus facilement les maths.	4,38
Je suis certain que les supports de Math-GAMES pourront motiver les personnes visées à apprendre les maths.	4,38

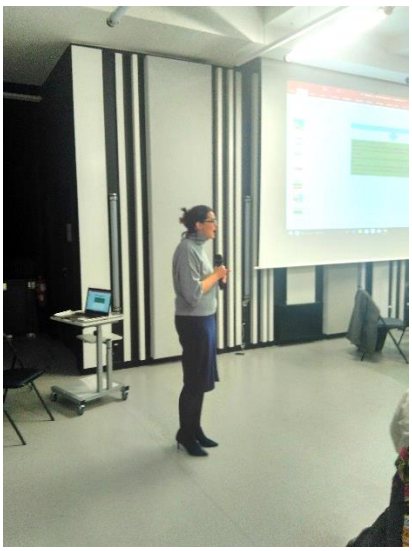
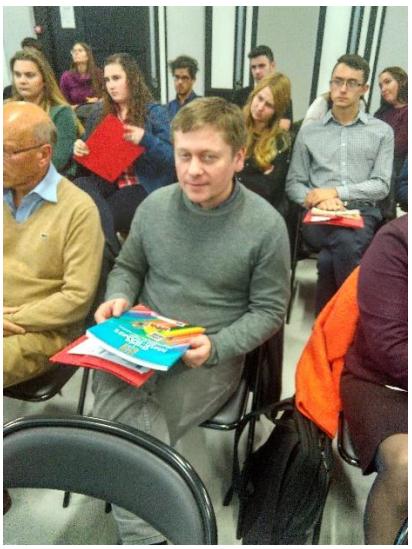
Those results can be explained by several elements:

- Even working in adult's education our participants had in general a social sciences and literature background and mathematics was a subject unfamiliar for them. It was difficult for them to see the utility of our products for their day to day work
- Everybody understood the project restrictions but agreed that the given time maybe could have been longer. It was suggested a three days training.
- The majority found the methodology innovative, but the time allocated could have been longer for everybody to fully understand it. So, maybe part of the difficulty of the methodology was transferred to the subject.

The venue for the meeting was really appreciated because it was easy to reach it with the local transportation and it was central. Also, the meeting hall was big enough for everybody to be comfortable and the space was modulable, so it was possible to work in small groups.
From the survey results we can see that the participants appreciated the conference and the project results especially the Guidebook. From the comments we concluded that the practical part was the most attractive.

Photos from the Event in Paris on 07.11.2017:



REPORT ABOUT THE IMPLEMENTATION, TESTING AND EVALUATION OF THE MATH-GAMES MULTIPLIER EVENT (DISSEMINATION CONFERENCE) E8 IN ROMANIA

Official Name of the Math-GAMES-Project-Partner:
Asociatia Femeilor Jurnaliste din Romania "Ariadna"

Name and e-Mail-Address of the contact person:
Georgeta Adam, georgeta.adam4@gmail.com

The following Multiplier Event E8 took place in Romania

Event Preparation

After publishing the two books (Compendium and Math-Games Guide) in Romanian, we started preparing the Multiplier Event E8 (Dissemination Conference) in Romania.
The Dissemination Meeting was thoroughly prepared by the elaboration of 40 CDs with project materials: poster, logo, Math-Games project presentation, and examples of mathematical games (8.3. Romanian Hora and 1.6. Connect Four). We also inserted the books in pdf format: Compendium Math-Games and Guidebook in Romanian.
The CDs were printable and featured the Math-Games logo.

Details of the meeting

Location:	Constanta County Cultural Center "Theodor T. Burada", Bd. I.C. Bratianu, no. 68, Constanţa
Date:	Saturday, November 4, 2017, 9.30 - 14.00
Organizer:	Association of Women Journalists from Romania "Ariadna", Romanian partner in the project
Participants:	36 teachers and trainers in adult education in Constanta
Coordinator:	Dr. Georgeta Adam presented the structure of the project, of the books, the methodology of these works, the target audience, the use of games in teaching mathematics in adult education.
Tutors:	Two other members of AFJR Ariadna: Dr. Ioan Adam, Math-Games trainer and Dr. Aurelia Lăpuşan, editor-in-chief of the magazine "Datina", associate professor at Ovidius University, Constanţa, participated in the event.

Conference program:

10.00	Registration of participants
10.30	Opening of the dissemination event
11.30	Presentation of the project Math-Games, mathematical games, exercises, presentation and launch of the books „Compendium" and „Guide Mathematical Games in Adult Education"
13.30	The online survey evaluation of the event

Conclusion

- The dissemination conference was a real success, being already recorded in the „Ziua de Constanta" publication (see: http://www.vmsmedien.de/mathgames/index.php/en/press-releases)
- The 36 teachers and trainers (librarians, actors, journalists) appreciated the innovation, the quality of CD presentation, power-point presentations, posters, logo, books).
- This Teacher-Training-Course with its resources (books, CDs, posters, flayers) was appreciated by the participants for the novelty of the elements in didactic activity, in adult mathematics training, of the real-life ties, the innovative games use.
- Each participant got 1 Compendium, 1 Guidebook in Romanian language and 1 CD with the Teacher-Training-Course.
- Each participant received a diploma of participation from the Association of Journalists "Ariadna".

- We quote an appreciation of the young research teacher Flavia Alexandra Petrov: "Thank you for the invitation. It was a very enjoyable and useful meeting and I wish you remarkable success in your projects. Personally, it pleased me. "
- The photo gallery is made by the Romanian team Math-Games (Georgeta Adam), the young journalist Daniela Cojocea and the teacher Flavia Petrov.
- The dissemination action also benefited by a pleasant environment, catering, sound, video, internet connection.
- All participants completed the on-line Evaluation Survey in Romanian on the Project Math-Games site.

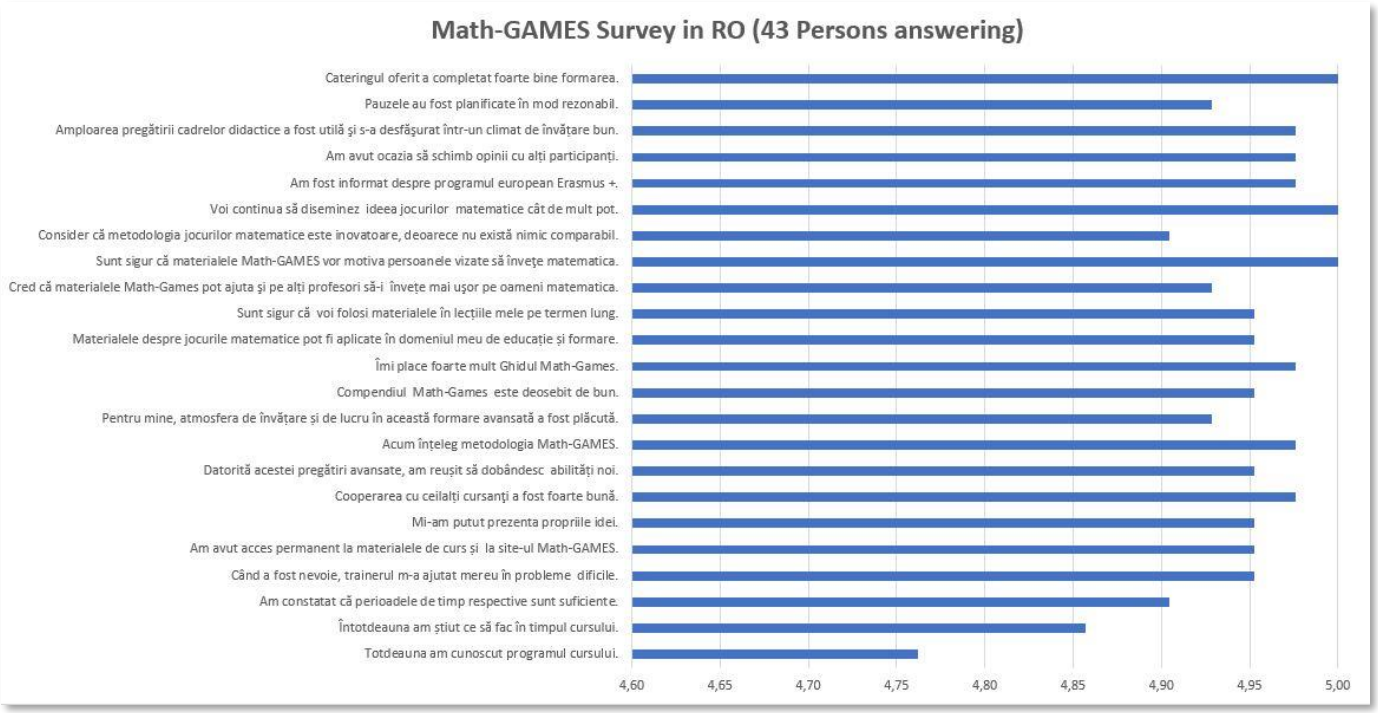
Evaluation of the Multiplier Event

All participants evaluated the E8 dissemination Multiplier Event online. The evaluation questions in Romanian language are the same as the questions in English, just translated.

Results of the online-evaluation (Tables and Diagram)

Questions	Average	Answers
Totdeauna am cunoscut programul cursului.	4,76	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 1 5 5 5 5 5 5 1 4 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5
Întotdeauna am știut ce să fac în timpul cursului.	4,86	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 5 5 5 4 5 4 4 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5
Am constatat că perioadele de timp respective sunt suficiente.	4,90	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 4 5 5 4 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5
Când a fost nevoie, trainerul m-a ajutat mereu în probleme dificile.	4,95	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5
Am avut acces permanent la materialele de curs și la site-ul Math-GAMES.	4,95	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5
Mi-am putut prezenta propriile idei.	4,95	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5
Cooperarea cu ceilalți cursanți a fost foarte bună.	4,98	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5
Datorită acestei pregătiri avansate, am reușit să dobândesc abilități noi.	4,95	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5
Acum înțeleg metodologia Math-GAMES.	4,98	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Pentru mine, atmosfera de învățare și de lucru în această formare avansată a fost plăcută.	4,93	5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Compendiul Math-Games este deosebit de bun.	4,95	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5
Îmi place foarte mult Ghidul Math-Games.	4,98	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Materialele despre jocurile matematice pot fi aplicate în domeniul meu de educație și formare.	4,95	5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Sunt sigur că voi folosi materialele în lecțiile mele pe termen lung.	4,95	5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Cred că materialele Math-Games pot ajuta și pe alți profesori să-i învețe mai ușor pe oameni matematica.	4,93	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Sunt sigur că materialele Math-GAMES vor motiva persoanele vizate să învețe matematica.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Consider că metodologia jocurilor matematice este inovatoare, deoarece nu există nimic comparabil.	4,90	5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Voi continua să diseminez ideea jocurilor matematice cât de mult pot.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Am fost informat despre programul european Erasmus +.	4,98	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Am avut ocazia să schimb opinii cu alți participanți.	4,98	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Amploarea pregătirii cadrelor didactice a fost utilă și s-a desfășurat într-un climat de învățare bun.	4,98	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Pauzele au fost planificate în mod rezonabil.	4,93	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 5 5
Cateringul oferit a completat foarte bine formarea.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5

Question	Average	Answers
The schedule of the course was always known to me.	4,60	5 4 1 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 5 5 4 5 4 5 4 4 4 4 4 5 5 5 5 5 5 4 5 5 2 4 4 5 5 4 5 4 4 4 4 4 5
I always knew what to do during the course.	4,66	5 4 3 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 4 5 5 5 5 5 5 5 3 5 5 5 4 5 5 4 4 5 5 3 4 4 5 5 5 5 4 4 3 4 5
I found the given times for the respective working phases sufficient.	4,48	4 4 4 4 4 4 4 5 4 3 5 5 5 5 5 4 5 5 5 5 5 4 5 5 5 4 3 5 4 4 4 4 5 5 4 5 5 4 4 5 5 5 5 5 5 5 5 4 5 5 5 3 5 5 5 5 3 3 4 3 5
The speaker has always helped me with problems and difficulties, if necessary.	4,85	5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
I always had access to the course material and the Math-GAMES website.	4,81	5 4 5 4 4 4 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
I could bring in my own ideas.	4,76	5 5 4 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5
The cooperation with the other students was very trustworthy.	4,71	4 4 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 5 5 5 5 5 5 4 4 5 5 5 3 5 5 5 5 5 5 4 5 5 4 5 4 5 4 5 3 5 4 5 4 5
With this advanced training, I was able to acquire new skills and skills.	4,58	5 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 3 5 5 5 3 5 5 4 4 5 5 4 4 5 5 5 3 5 4 3 3 5 4 5 5 5 4 5 5 4 5 5 5 5 4 4 5 5 4 5 4 4 4 4 5
I now understand the Math-GAMES methodology.	4,66	5 5 5 5 5 4 4 4 3 4 5 5 5 5 5 3 5 3 5 5 4 5 5 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 5 4 5 5 5 5 4 4 4 5
The learning and working atmosphere in this advanced training was pleasant for me.	4,77	4 4 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 4 4 5 4 5 4 4 4 5
The Math Games Compendium is especially good.	4,56	5 5 5 5 4 4 4 4 3 5 5 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 4 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 4 5 4 5 5 5 5 5 5 3 5 3 5 3 5
I like the Math Games Guidebook especially well.	4,52	5 4 5 5 4 4 4 4 4 5 4 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 5 5 4 5 5 5 5 5 5 5 4 5 5 5 5 5 5 3 5 4 2 4 4 4 5 5 4 5 4 5 5 5
The materials of Math Games can be used in my area of education and training.	4,26	4 5 5 4 5 5 4 4 4 4 4 5 5 5 5 5 4 3 5 5 5 4 5 5 4 4 4 4 4 5 5 4 5 5 4 5 3 4 3 3 3 5 4 5 5 5 5 5 5 3 4 5 5 3 4 4 4 4 4 3 5 4 2 3 5
I am sure that the materials used in my lessons will be used in the long term.	4,23	4 4 4 5 4 4 4 4 4 4 4 5 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 4 5 4 5 4 3 5 3 4 4 3 3 5 4 5 5 5 5 5 5 3 4 3 5 4 5 4 4 4 4 5 4 2 4 5
I believe the math games materials can help other teachers to teach people more easily in mathematics.	4,50	5 4 5 4 4 4 4 4 4 5 4 5 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 4 5 5 4 5 5 5 4 5 5 5 5 5 5 5 5 5 3 5 5 4 5 5 4 4 5 4 5 4 4 4 5
I am sure Math-GAMES materials will motivate affected individuals to learn mathematics.	4,53	5 5 5 5 5 4 4 4 4 4 5 4 5 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 4 5 4 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 3 5 4 4 5 5 4 4 5 5 4 4 4 4 5
I find the Math Games methodology innovative, since there is nothing comparable.	4,58	4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 3 5 5 5 4 5 5 4 4 4 4 4 4 5 4 5 5 5 4 5 5 5 5 5 5 5 3 5 4 5 5 4 4 4 4 5 5 5 4 3 4 5
I will continue to distribute the Math Games idea as far as I can.	4,68	5 4 4 4 5 5 5 5 5 5 4 5 5 5 5 5 5 3 5 5 5 4 5 5 4 4 4 5 5 5 4 5 5 4 5 5 5 5 5 5 5 5 5 5 3 5 5 5 3 4 5 4 4 4 5 5 5 4 5 5
I was informed about the European Erasmus+ program.	4,85	5 5 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 5 5 5 5 5 5 4 4 5 4 5
I had the opportunity to exchange with other participants.	4,71	2 4 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 3 5 5 5 4 3 3 5
The spaciousness of the teacher training was helpful for a good learning climate.	4,71	3 4 5 4 5 5 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 5 5 4 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 4 3 5 5 5 5 4 3 4 5
The breaks were sensibly planned.	4,68	4 4 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 5 5 3 5 5 3 3 5 5 5 5 5 5 5 5 4 5 4 4 4 5 4 4 5 5 5 4 4 3 4 5
The offered catering has very well supplemented the training.	4,66	5 4 5 4 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 2 4 4 2 2 5 5 5 5 5 5 5 5 4 5 5 5 5 4 5 5 5 5 4 4 4 4 5



Summary of the online evaluation

- The Online evaluation shows, that the dissemination event in Romania was very good.
- The evaluation score, ranging from 4.60 to 5.00, on a sample of 43 respondents, shows the great interest of the learners in the presented materials (related to the project methodology, to the Power Point presentations of the games, to the Flyer of the Math- Games Project, but especially to the Math-Games Compendium and Guidebook, to the CD, to the poster, to the project site).
- It is a record number of ratings, surpassing the number of the participants by 7, which proves that they immediately shared the E8 success.

REPORT ABOUT THE IMPLEMENTATION, TESTING AND EVALUATION OF THE MATH-GAMES MULTIPLIER EVENT (DISSEMINATION CONFERENCE) E9 IN GREECE

2nd Gymnasium of Messini

Logo and Official Name of the Math-GAMES-Project-Partner: 2nd Gymnasium of Messini

Name and e-Mail-Address of the contact person: Thodoris Zevgitis, tzevgit@gmail.com

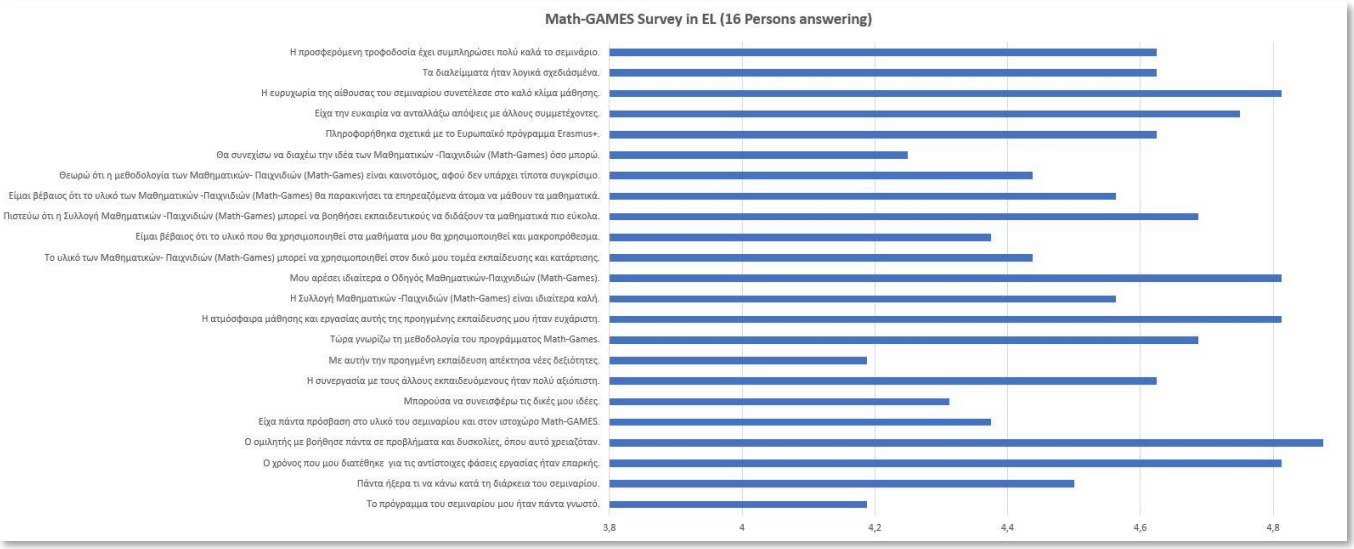
The following Multiplier Event/Events E9 took place in Greece on 21.02.2018

Date: 21/2/2018 Place: Areadne Lifelong Learning Centre Number of Persons: 25

We prepared and held the E9 Dissemination Conference, which took place in Kalamata on 21-02-2018. 25 teachers of Messenia's region participated in the Conference. At the conference we presented the Math-Games project and we had the opportunity to play some of the games and to discuss possible ways to use those games at school. The above participants were teachers from primary schools, teachers from special needs schools and teachers from adult education.

Invitation and some pictures from the event:

Evaluation of the Multiplier Event E9, Diagram, Table and Summary (16 persons)



Questions	Average	Answers														
Το πρόγραμμα του σεμιναρίου μου ήταν πάντα γνωστό.	4,1875	4	5	3	5	1	4	3	5	5	5	5	4	5	5	4	4
Πάντα ήξερα τι να κάνω κατά τη διάρκεια του σεμιναρίου.	4,5	5	5	3	5	4	4	3	5	5	5	5	5	4	5	5	4
Ο χρόνος που μου διατέθηκε για τις αντίστοιχες φάσεις εργασίας ήταν επαρκής.	4,8125	5	5	4	5	5	5	4	5	5	5	5	4	5	5	5	5
Ο ομιλητής με βοήθησε πάντα σε προβλήματα και δυσκολίες, όπου αυτό χρειαζόταν.	4,875	5	5	5	5	5	5	4	5	5	5	5	5	4	5	5	5
Είχα πάντα πρόσβαση στο υλικό του σεμιναρίου και στον ιστοχώρο Math-GAMES.	4,375	5	5	5	5	1	5	3	5	5	5	5	3	4	4	5	5
Μπορούσα να συνεισφέρω τις δικές μου ιδέες.	4,3125	5	5	4	5	1	5	2	5	5	5	5	4	4	4	5	5
Η συνεργασία με τους άλλους εκπαιδευόμενους ήταν πολύ αξιόπιστη.	4,625	5	5	3	5	4	5	3	5	5	5	4	5	5	5	5	5
Με αυτήν την προηγμένη εκπαίδευση απέκτησα νέες δεξιότητες.	4,1875	4	5	4	4	5	4	3	5	4	5	2	4	5	5	4	4
Τώρα γνωρίζω τη μεθοδολογία του προγράμματος Math-Games.	4,6875	5	5	5	5	5	4	4	5	4	5	5	4	4	5	5	5
Η ατμόσφαιρα μάθησης και εργασίας αυτής της προηγμένης εκπαίδευσης μου ήταν ευχάριστη.	4,8125	5	5	4	5	5	4	4	5	5	5	5	5	5	5	5	5
Η Συλλογή Μαθηματικών -Παιχνιδιών (Math-Games) είναι ιδιαίτερα καλή.	4,5625	5	5	5	4	5	5	4	5	4	5	4	4	4	5	4	5
Μου αρέσει ιδιαίτερα ο Οδηγός Μαθηματικών-Παιχνιδιών (Math-Games).	4,8125	5	5	5	5	5	5	4	5	4	5	5	5	5	5	4	5
Το υλικό των Μαθηματικών- Παιχνιδιών (Math-Games) μπορεί να χρησιμοποιηθεί στον δικό μου τομέα εκπαίδευσης και κατάρτισης.	4,4375	5	5	5	3	5	3	4	5	5	5	4	4	4	5	4	5
Είμαι βέβαιος ότι το υλικό που θα χρησιμοποιηθεί στα μαθήματα μου θα χρησιμοποιηθεί και μακροπρόθεσμα.	4,375	5	5	4	4	5	3	4	5	5	5	5	3	4	5	3	5
Πιστεύω ότι η Συλλογή Μαθηματικών -Παιχνιδιών (Math-Games) μπορεί να βοηθήσει εκπαιδευτικούς να διδάξουν τα μαθηματικά πιο εύκολα.	4,6875	5	5	4	5	5	5	4	5	4	5	5	5	4	5	5	4	5
Είμαι βέβαιος ότι το υλικό των Μαθηματικών -Παιχνιδιών (Math-Games) θα παρακινήσει τα επηρεαζόμενα άτομα να μάθουν τα μαθηματικά.	4,5625	5	5	5	3	5	5	4	5	3	5	5	4	5	5	4	5
Θεωρώ ότι η μεθοδολογία των Μαθηματικών- Παιχνιδιών (Math-Games) είναι καινοτόμος, αφού δεν υπάρχει τίποτα συγκρίσιμο.	4,4375	5	5	4	4	5	5	3	4	4	5	4	4	5	5	4	5
Θα συνεχίσω να διαχέω την ιδέα των Μαθηματικών -Παιχνιδιών (Math-Games) όσο μπορώ.	4,25	5	5	4	3	5	4	4	5	4	5	5	4	4	4	3	4
Πληροφορήθηκα σχετικά με το Ευρωπαϊκό πρόγραμμα Erasmus+.	4,625	4	5	4	5	5	5	3	5	4	5	5	5	5	4	5	5
Είχα την ευκαιρία να ανταλλάξω απόψεις με άλλους συμμετέχοντες.	4,75	4	5	4	5	5	4	5	5	4	5	5	5	5	5	5	5
Η ευρυχωρία της αίθουσας του σεμιναρίου συνετέλεσε στο καλό κλίμα μάθησης.	4,8125	5	5	4	5	5	4	5	5	5	5	5	5	5	5	4	5
Τα διαλείμματα ήταν λογικά σχεδιάσμένα.	4,625	4	5	4	5	5	4	5	5	5	5	5	5	4	4	4	5
Η προσφερόμενη τροφοδοσία έχει συμπληρώσει πολύ καλά το σεμινάριο.	4,625	4	5	4	5	5	4	4	5	5	5	5	5	5	4	4	5

Summary of the online evaluation

Teachers who took part in the survey stated that their participation in the multiplier event helped them to understand the Math-Games methodology and that they gained knowledge that can be used in their lessons.
The key points of the results are:

- The participants knew what to do at all the stages of the event and they had good knowledge of the schedule.
- They had the necessary time to complete all the given tasks and the speaker helped when needed.
- The participants enjoyed the cooperation with other participants.
- They found the idea of the Math-Games very interesting and they believe that the material will be used in their lessons (4.8/5)
- The participants believe that the Math-Games material will help students to learn and understand mathematics.
- The participants had the chance to learn about the Erasmus+ KA2 strategic partnerships.

In overall, the multiplier event was successful based from the results of the online survey. The average response to all the questions was over 4 and most of them more than 4.5 in a scale from 1 to 5.

REPORT ABOUT THE IMPLEMENTATION, TESTING AND EVALUATION OF THE MATH-GAMES MULTIPLIER EVENTS (DISSEMINATION CONFERENCE) E10.1 AND E10.2 IN BULGARIA

Official Name of the Math-GAMES-Project-Partner:
KRUG Youth Center (KRUG Art Movement), Bulgaria

Name and e-Mail-Address of the contact person:
Radost Nikolaeva, radost.nikolaeva.cohen@gmail.com

The following Multiplier Events E10.1 and E10.2 took place in Kardzhali, Bulgaria

E10.1 Multiplier Event (Dissemination Conference) in Bulgaria: TRAINING FOR TEACHERS, October 3, 2017, 13:30 - 16:30, Place: Business Incubator, Number of Participants: 20

E10.2 Multiplier Event (Dissemination Conference) in Bulgaria: SEMINAR FOR YOUNG MATHEMATICIANS, UNIVERSITY STUDENTS AND YOUNG AWARDS IN MATHEMATICS, October 4, 2017, 14:00 - 17:00, Place: Municipal Hall for education, Number of Participants: 11

Multiplier Event E10.1 in Business Incubator, Kardzhali

Multiplier Event E10.1:
Dissemination Conference in Bulgaria - TRAINING FOR TEACHERS

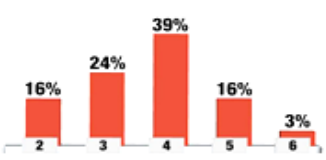
Date:	Tuesday, 03.10.2017
Venue:	Business Incubator, Kardzhali
Participants:	20
Background:	teachers from 4 towns /Kardzhali, Haskovo, Plovdiv, Sofia
Leading lecturer:	PhD Eng. Hrista Kadieva
Speakers:	Radost Nikolaeva, PhD Emil Robert
Working time:	13:30 – 16:30

STEP 1
After the publishing the two books with collections of Math-GAMES, we started preparing the Multiplier Event E10 (Dissemination Conference) in Bulgaria.

STEP 3
At the end, the participants did not give a particularly appreciative estimate of the event and we had to analyze the reasons.
After discussing with our experts, we summarized four main reasons:

1. The audience is very heterogeneous;

STEP 2. In order to discuss how to get to different audiences, we organized a preliminary event with 3 teachers, 2 programmers, 3 lecturers, 3 students, 2 university students - a total of 13 people who we well know. All of them knew they were participating in an experiment, the purpose of which was to understand the strengths and weaknesses in conducting the actual event. It took place on September, 10, for 2 hours in a special small hall of the so-called " Business incubator" in Kardzhali.
The participants got acquainted with the two published books in Bulgarian, the aims of the Math-GAMES project and its methodology, as well as the three developed Bulgarian games as a basis for mathematics training.
At the end, the participants did not give a particularly appreciative estimate of the event and we had to analyze the reasons.



From the filled in questionnaires, the following conclusion can be drawn: about 3% satisfaction is expressed by the youngest participants, about 16% is the satisfaction of the narrow specialists - programmers, lecturers, 24% are those who are interested in participating in a wider forum, with more opportunity for information and discussion, 39% is the satisfaction of the older and more experienced in the field of teaching people. Of course it's not really a representative extract.

2. Younger participants appreciate the structure of the presentation as too complex;
3. The participants - teachers and lecturers - are mainly interested in the methodology of playing games as a learning tool;
4. Experts with narrow specialization in mathematics are mainly interested in the methodology used.

STEP 4

To get to different audiences, we organized two events on two consecutive days (October 3 and 4) aimed not only at presenting the Math-GAMES project and the used methodologies but also to present specific game treatment, algebraic structures of various games included in the project, and how to make them applicable to mathematics training.

WHY TWO?

The first Teacher Training event (October 3, 2017) was attended by mathematics teachers and young programmers from Sofia, Plovdiv, Kardzhali and Haskovo. Some of them have worked with a variety of learners from different ethnic groups, residents of remote rural areas, refugees, unemployed people, etc.

The second event (October 4, 2017) was attended by University students from mathematics specialties from Sofia and Plovdiv and students with achievements and awards in the field of mathematics from Kardzhali.

Both main lecturers have scientific developments in the field of mathematics and have participated in the compilation and mathematical development of the Bulgarian part of the Math-GAMES publications.

In the Training day on October, 3 we presented:

- **the Math-GAMES methodology of playing games as a learning tool;**
- **the possible lesson' structures on the base of Math-GAMES methodology;**
- **the published project books as didactically books** – a collection of ideas and experiences based on the curricula, how these games can help numeracy (learning to count and calculate, learning basics in Mathematics, Statistics and Geometry).

During the second part of the training day the participants had the opportunity:

- **to play the three Bulgarian games** from the published books, and to comment on the mathematical content in them.

The working time, incl. coffee breaks on the first day were 4 hours. Math-GAMES Methodology was presented; the algebraic structures of the 3 Bulgarian games were demonstrated with which we wanted to explain how the methodology works. Two games to play with the participants were prepared. Each participant got 1 Compendium, 1 Guidebook in Bulgarian language and 1 USB stick with the Teacher-Training-Course. All participants completed an on-line Evaluation Survey in Bulgarian on the Project Math-GAMES site.

The conference offered many topics for basic education of low skilled learners from different ages.

The focus was also on the following issues: How feasible, acceptable and suitable for Teachers is this education and development training?

FEASIBILITY - Could Math-GAMES methodology be made to work in practice? Is this idea feasible and do we have the necessary methods Resources, for example? (Time; Human; Energy/equipment; Information, Material and Human Resources).

ACCEPTABILITY - What are the expected outcomes for learners? Are the Stakeholder reactions, for examples, worth the efforts for this project?

SUITABILITY - Does the creation of Math-GAMES methodology address the circumstances under which teachers in schools are currently operating? Is this in line with our strategic position and the wishes of our key stakeholders?

The answers to most of these questions are positive.

Math-GAMES Project

ТРЕНИНГ ЗА УЧИТЕЛИ

3 октомври 2018, 13:30 – 16:30

Място: Бизнес инкубатор, Кърджали

ПРОГРАМА

13:30 – 14:00	Регистрация на участниците и предоставяне на два броя от всяка от учебните книги, публикувани в рамките на Math-GAMES Project;
14:00 – 14:30	Представяне на проекта и неговата методология;
14:30 – 15:00	Как избрахме и разработихме българските игри като учебно съдържание по математика за различни възрастови групи – коментари, обсъждане на идеи и примери за възможни приложения на игрите като базисен инструмент при ученете на Математика, Статистика и Геометрия;
15:00 – 15:40	Игри „на живо" по двойки и тройки, след което участниците коментират математическото съдържание на играта и възможностите й за приложение в учебния процес;
15:40 – 16:15	Обсъждане на варианти на учебен план как играта може да допринесе за по-висока мотивация при ученето на основи на математиката;
16:15 – 16:30	Кафе и сладки за приятели на математиката

ПРИМЕРЕН ПЛАН НА УРОК, БАЗИРАН ВЪРХУ ТРАДИЦИОННАТА ИГРА „СКАМБАЛОВЕ"

Описание на урока

Първа част на урока:

- Обяснение на правилата на играта
- Игралното поле е правоъгълна форма на земята с параметри *3x4m*
- Всеки играч си избира топче
- Учителят обяснява правилата и играта започва.
- Определяне на реда на играчите.
- Играчите се учат как да броят от 1 до 36.
- Играчите се запознават с геометричните фигури правоъгълник, кръг и сфера
- Играчите се учат как да събират числа в комбинация по три

Втора част на урока:

- Раздава се по един работен лист на всеки.
- Следват се инструкциите от работния лист

Полезни бележки

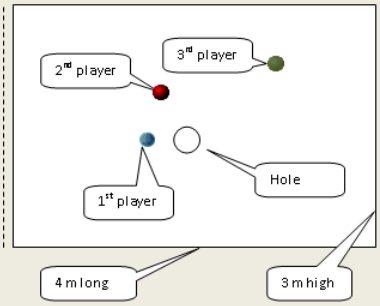
- В края на урока работният лист е изпълнен.
- Ако участниците не могат да четат, учителят трябва да ги напътства.
- Ако участниците срещат затруднения да броят, трябва да ги обучите – може да се наложи да отделите повече време или да разделите групата.
- Участниците трябва да могат да броят до 36.
- Участниците трябва визуално да разпознават геометричните фигури правоъгълник, кръг и сфера.
- Участниците трябва да събират в комбинация по 3 числата от 1 до 36.

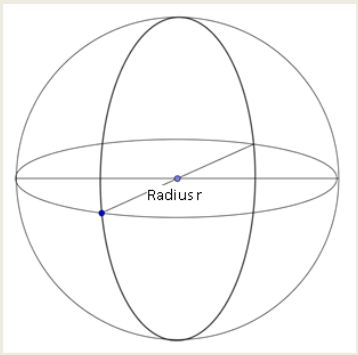
HOW TO ELABORATE LESSON PLAN BASED ON THE MATH GAMES METHODOLOGY?

Discussion between the participants took place. The participants united around the following:

- Math can be a difficult subject, but it is something that everyone is capable of mastering. Math is based on logic and rules that you can study and apply – there isn't any special skill involved. The subject might come easier to others than you feel it does to you, but if you practice and try hard you'll also be good at math.
- In the field of Learning Addition and Subtraction – you could play games with simple math. E.g. you only play to 100 so the numbers never get too high, but it's a fantastic way to learn basic addition. It's much better than doing addition tables for hours!
- The best way to learn math is to learn how to fail productively understanding what it means and possessing the ability to adapt the information.
- For a mathematical lesson based on a game, it is first necessary to do a lesson plan incl. learning strategy.

Title:	**DEVELOPING LOGICAL SKILLS WITH THE HELP OF SCAMBALOVE**
Counting to 36, by three, adding single digit numbers with totals to 36, add single-digit and two-digit whole numbers with total to 36, determining strategies to be used, solving problems and observing rules.	
Length of the Lesson	40 minutes
Lesson Objectives	At the end of this lesson, students will be able to count, by three, add single and two-digit numbers with totals to 36. The participants must sum numbers in combination to 3 the numbers to 36. They should be able to measure and describe the length between two points (between the marble and the hole) in centimeters, recognize and name two dimensional and three-dimensional shapes. The participants must visually recognize geometric shapes rectangles, circle and sphere.
Tool: Synopsis	Counting to 36, by threes, arrangement and comparison of numbers to 36, summing one-digit and two-digits number; Trajectory of moving objects (e.g. the length of the trajectory between two points of it); Rectangular, Circle and Sphere; Determining strategies to be used, solving problems and observing rules.
Game	The marbles in Bulgaria are frequently used in math's logical problems. Here is an example: A math's logical problem for Christmas math's competition There are 5 red, 6 blue and 7 yellow marbles in a bag. How many marbles do you have to subtract at least, with your eyes closed, to be sure that you have at least 2 with an assorted colour? a) 4 b) 18 c) 8 <u>Solution:</u> Seven marbles of one colour are the most to be subtracted; the eighth will be mandatorily of an assorted colour.
Basic rules	The game is played outside in open spaces at a rectangular play area with approximate size 3 x 4 m. A circle hole is dug in the middle of the plain, even surface, without obstacles – with diameter 10-15 cm and depth 5 cm. The hole is usually made by a boot sole. Here you see the play-area: The marbles (mumbles) used in the game may be made of glass or plastic with diameter around 2, 5 - 3 cm. Each player plays with one marble only, called „Skambalove". The Skambalove is normally a bigger mumble. You need as many "Skambaloves" as there are players here.

History	„Skambalove or Skambolove" is a widely spread board race game from the recent past. The rules of the game vary depending on the different regions of the country where it is played. Probably the original of the game is the medieval game "Marbles". We don't know the rules. But probably they played the same basic games of marbles that we know today: one version where you take turns tossing the marbles at a goal (another marble, a hole, or a wall), and another version where you take turns shooting the marbles within a circle drawn in the dirt, trying to get them out of the circle. One version has a series of arches to get the marbles through. The medieval marbles were made of clay, but modern marbles can be substituted by glass or plastic. In Bulgaria the rules are transferred by word to mouth without having a clear definition. The version described here used to be played in the city of Kardzhali with glass marbles in the open space. Kids have been playing marbles and marble-like games for thousands of years. The game of marbles is played with variations from playground to playground around the world.	
Timeline		
Warm up	Start to play. PHASE 1: FIND THE PLAYING ORDER In the beginning of the game the players stand further from the side of the hole in the rectangular. Each of them tosses his marble towards the hole, aiming to move it as close as possible to it or inside of it. The player whose marble is closest to the hole or gets inside of it begins first. Second in turn is the player with the second in distance marble, etc. This rotation order continues until the end of the game. PHASE 2: PLAY MARBLES AND EARN POINTS After settling the sequence, the first task of the players is to place their marbles in the hole. A hit in the hole counts for 3 points. After hitting the hole, the player has the right to hit other players' marbles. Each opponent's marble hit counts for 3 points. Once after an opponent's marble is hit, the player has the right to shoot again at opponents' marbles or to place his own into the hole. The winner is the one who first manages to achieve 36 points. The 33rd and the 36th point cannot be achieved by hitting the hole, but only by two consequent (directly one after the other) hits on opponents' marbles. These consequent hits are named „Drankel" and „Funkel".	*Time:*
Present information  	Arranging the game area. What is the shape of game area? …. rectangle …. What is perimeter of the area? …… 3+3+4+4 = 14 m ……. What is the area of the game field? …… 3x4 = 12 m …… **Exercise**	*How will students know the purpose for this lesson?*

	Each player gets one marble. There are 5 red, 6 blue and 7 yellow marbles in a bag. If you are with your eyes closed, how much marbles at least you must subtract to be sure, that you have at least 2 with an assorted color? a) 4 b) 18 c) 8 **Solution** Seven marbles of one color are the most to be subtracted; the eighth will be mandatorily of assorted color.	
	Questions for the very clever ones What is the shape of the marble? ..... sphere …… What is the volume of the sphere, if π=3,14 and radius r=3 cm? V = 4/3 πr^3 = 4/3 π*3^3=113,04 cm³	
Guided and freer practice	At the beginning the teacher is a tutor and he will edit the worksheet together with the students. Afterwards the students must play alone.	
Conclusion	How will I bring closure and provide opportunities for reflection on and transfer of knowledge/skills?	

To evaluate the project Math-Games, we asked 3 different people for statements:

1. A leading Professor for Mathematics: PhD Georgi GACHEV is a Doctor of Mathematics at the Sofia University until 2003. He currently works for the Institute of Mathematics of Bulgarian Academy of Science. He is a member of MathGAMES project team in Bulgaria.

2. Leading Bulgarian teachers' experience: Valcho Milchev is one of the most famous mathematics teachers in Bulgaria. He works in Kardzhali with various groups of learners from all ages. His works are published in mathematical journals in Europe, Canada and the United States.

3. Young Bulgarian Mathematicians' experience: PhD Eng. Hrista Kadieva is a member of Math-GAMES Bulgarian project team. She is a leading lecturer during the TRAINING FOR TEACHERS on October 3. Hrista Kadieva, born in Kardzhali 1992, is a young mathematician and a Doctor of Mathematics. She has participated in numerous international mathematical competitions and has won dozens of awards from competitions for young mathematicians. Since the summer of 2016 she is a graduate engineer from the Technical University in Sofia.

Georgi GACHEV
Questions:
How can we offer tailored learning opportunities to individual learners by using games and how can we increase incentives for adult training by using games?
Answer:
“Use mathematics in everyday life. When you're getting the change in the supermarket calculate how much money you should get back. If you are buying gas at a gas station, try to multiply the price by the number of gallons it takes to fill your tank. Getting better at mental math is a fantastic way to feel more confident, even if the subjects you are studying in school are much more complex. You will always be using addition, subtraction, and multiplication in one way or another no matter how complicated the subject gets.”
Question:
Mr. Gachev, what is your favorite advise thoughts about Mathematics?
Answer:
The thought of Albert Einstein: “Most teachers waste their time by asking questions that are intended to discover what a pupil does not know, whereas the true art of questioning is to discover what the pupil does know or is capable of knowing.”

Valcho MILCHEV
He says: “All learners can experience success in Math if they are taught in ways that foster the development of a mathematical mindset. This means setting grand expectations for all learners, engaging them in challenging and interesting math tasks, and providing the right kind of support and encouragement.
Math Games are one of the successful ways to develop a mathematical mindset. As it turns out, developing a mathematical mindset is more highly correlated with future success in math than scores on standardized tests!
Something more: In Psychology it is recognized that Play brings joy.”
Question:
Why do so many learners struggle with math problems? Maybe they just don't know where to begin and get overwhelmed at the thought of tackling math problems. Often learners lack experience with diverse types of problems and the strategies for solving them, so they feel defeated and give up before they get started?
Answer:
Finding or creating the right math problem is the first step in developing a rich math task. The simple traditional games are a rich context to make the process of crafting this problem much easier. For ex. play games with simple math for learning addition and subtraction. Bulgarian game-board “Man, don’t get angry” could be a simple game, but in the Math learning process you introduce learners who know numbers from 1 to 6 and a summation of prime numbers to geometric figures cube, rectangle, square and finally participants also learn probability theory. That’s why before you begin, you need to have some idea of their current problem-solving skills.
For example: How do they attack diverse types of problems? What strategies do they use? Are they functioning below grade level, at grade level, or above? If they struggle, is it due to poor computation skills, poor reading skills, or misconceptions about basic math concepts? For many of the mathematical problems you can find a solution in mathematical games.

Hrista KADIEVA
In the end of Teachers Training day Hrista Kadieva offered to discuss a feasible option for constructing a lesson of Basic mathematics.
“MODEL OF LEARNING STRUCTURE” AS A LESSON STRATEGY STEP BY STEP
In the end of discussions PhD Hrista Kadieva summarized all comments, experiences and “good practices” related to the Learning Strategy: “The Math-Games would be used as a perfect instrument to learn Mathematics Fundamentals. For example:

- Start with "+1" facts. Adding 1 to a number takes you to the next highest number on the number line. For example, 2 + 1 = 3.
- Understand zeroes. Any number added to zero equals the same number because "zero" is the same as "nothing."
- Learn doubles. Doubles are problems that involve adding two of the same number. For example, 3 + 3 = 6 is an example of an equation involving doubles.
- Use mapping to learn about other addition solutions. In the example below, you learn through mapping what happens when you add 3 to 5, 2 and 1. Try the "add 2" problems on your own.
- Go beyond 10. Learn to add 3 numbers together to get a number larger than 10.
- Add larger numbers. Learn about regrouping 1s into the 10s place, 10s into the 100s place, etc.”

Multiplier Event E10.2 in KRUG Center for Education and Cultural Industries

Multiplier Event E10.2:
Dissemination Conference in Bulgaria - SEMINAR FOR YOUNG MATHEMATICIANS, UNIVERSITY STUDENTS AND YOUNG AWARDS IN MATHEMATICS

Date:	Wednesday, 04.10.2017
Venue:	Krug Center for Education and Cultural Industries, Kardzhali, Blvd. „Trakia" 3
Number of participants:	11
Workshop leader:	Ivana Gacheva
Speakers:	PhD Georgi Gachev, Emil Robert
Working time:	14:00 – 17:00

The second event (October 4, 2017) was attended by University students from mathematics specialties from Sofia and Plovdiv and students with achievements and awards in the field of mathematics from Kardzhali. Lecturers have scientific developments in the field of mathematics and social development and have participated in the compilation and mathematical development of the Bulgarian part of the Math-GAMES publications.

The working time, incl. coffee breaks on the second day were 3 hours. Math-GAMES Methodology was presented; the algebraic structures of the 3 Bulgarian games were demonstrated with which we wanted to explain how the methodology works. Two games to play with the participants were prepared. Each participant got 1 Compendium, 1 Guidebook in Bulgarian language and 1 USB stick with the Teacher-Training-Course. All participants completed an on-line Evaluation Survey in Bulgarian on the Project Math-GAMES website.

Programme

14:00 – 14:15	Registration of participants
14:15 – 14:45	Presentation of MathGAMES project' methodology and 2 published books
14:45 – 15:30	How to motivate Slow Learners to learn Mathematics using Games? Focus groups' discussion
15:30 – 15:45	Coffee break
15:45 – 16:15	Workshop: Reading books "in live" to determine some of the most interesting examples of playing games as a learning tool
16:15 – 16:45	Ideas how the use of Math games promotes social integration in the trained process
16:45 – 17:00	On-line evaluation

During the discussions and presentations, several focuses were formed:
- Learning Mathematics as a challenge or an opportunity to develop numeracy and for personal development;
- Using games for creating interest and promoting motivation of slow learners;
- Socializing the persons involved – how the interaction in a game creates a better understanding for the learners regarding the objects, concepts, processes and even the other learners involved;
- Using games connecting to real life situations;
- The Math-Games like a competition and challenge element during the learning process.

During the work of the focus groups, several key issues were addressed:
- What is a "slow learner"?
- What are some of the educational challenges for struggling or slow learners?

What is a "slow learner"?
A "slow learner" is not a diagnostic category, it is a term people use to describe a student who could learn necessary academic skills, but at rate and depth below average same age peers. To grasp new concepts, a slow learner needs more time, more repetition, and often more resources from teachers to be successful. Reasoning skills are typically delayed, which makes new concepts difficult to learn. A slow learner has traditionally been identified as anyone with a full-scale IQ one standard deviation below the mean but not as low as two standard deviations below the mean. If a cognitive assessment (IQ test) has a mean (average) of 100, we expect most students will fall within one standard deviation of 100. That means that most students have an IQ of 85 to 115. Those who fall two standard deviations below the mean are often identified as having an Intellectual Disability (IQ below 70). A slow learner does not meet criteria for an Intellectual Disability (previously called mental retardation). However, she/he learns slower than average students and will need additional help to succeed.

What are some of the educational challenges for struggling or slow learners?
Typically, a slow learner has difficulty with higher order thinking or reasoning skills. This suggests that it will be more challenging to learn new concepts. New skills need to be based upon already mastered concepts. This can be difficult when most of the class has already mastered a concept and is moving on, while the slow learner needs more time. This can lead to gaps in knowledge and basic skills. The more gaps in a content area, the more challenging it is for anyone to learn new concepts. It's also important to recognize that these students are typically keenly aware they are struggling, and self-confidence can be an issue. They are prone to anxiety, low self-image, and eventually may be quick to give up. They often feel "stupid" and start hating school. They spend all day doing something that is difficult for them, it can be very draining. Finding other activities that the student can be successful in is very important. There should be emphasis on strengths as well.

One of the most frequently discussed issues was

… because …
developing a happy and joyful environment is a part of the Math-GAMES methodology, because of the joy element is a plus in the learning process.

Five tips to teach and improve slow learners discussed by participants:
1. Using games to set up a positive classroom atmosphere;
2. Fun Math activities for slow learners;
3. FUN Math puzzles with solutions for elementary Math;
4. Math games and apps ideas to make Math FUN;
5. Teaching strategies to set up a positive classroom atmosphere

Participants in the Dissemination Conference in Bulgaria - SEMINAR for young mathematicians, University students and young awards in Mathematics, discussed and united around the idea of developing a model with working titles "Interior for a Fun Classroom in Mathematics" as a part of a series of activities that will provide a teacher (and a teacher of slow learner's adults) the background for using Games as an educational medium in developing mathematical literacy.

Project team of KRUG proposed some ideas: "A Fun classroom interior".
Here some examples:

Interior for a Fun Classroom in Mathematics

Hey guys!

Do you play games in your classroom? Wait... what?! No time? Well... you should make time! Especially during your math time.

Do you know, math and games can go together like Nutella and pretzels. Delicious separate, but amazing together.

Playtime is precious. Play builds brain pathways for thinking, creativity, flexibility, empathy and many other lifelong skills.

Heather Shumaker

This is true for every person either a child or an adult.

Interior for a Fun Classroom in Mathematics

There are so many questions at a practical level. For ex.:

- How to Make Learning Mathematics more fun?
- In Psychology it is recognized that Play brings joy.
- How to understand Math much better?
- You say that one way is to learn mathematics through play? But why is that so?

Indeed, the traditional games are a great way to learn Addition and Subtraction e.g. Play games with simple math. You only play for ex. to 100 so the numbers never get too high, but it's a great way to learn basic addition. It's much better than doing addition tables for hours!

Interior for a Fun Classroom in Mathematics

Today we will do 2 things within the subject "HOW TO UNDERSTAND MATHEMATICS MUCH MORE".

First of all, we will arrange "A FUN CLASSROOM IN MATHEMATICS". In it we will perform the role of... walls, hangers and other design solutions. We'll get stuck with special badges, and some of us will wear "fun math t-shirts". Everyone can comment your own „interior" ☺

Secondly, we will run a long-forgotten Bulgarian game that can be played by a different number of people. It's called "Combination 9". It is not from the so-called "easy games" and introduces us to the world of Combinatorics.

As a Math game, it was developed for the first time by the KRUG Foundation with the help of mathematicians from the Bulgarian Academy of Sciences and was published in our 2 project books.

Interior for a Fun Classroom in Mathematics

Please, „decorate" yourself and a classroom with the „interior devices", which are the fun introduction to our lesson! ...and comment them, please...

CORRESPONDING QUESTIONS OF THE LECTURER in this process:

How would you comment this situation?

Do you think this is true?

Do you like this quote as a part of a Math lesson?

Do you agree with this statement?

Have you been in a situation like this:

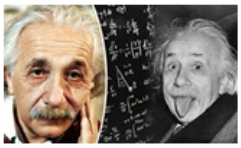
Interior for a Fun Classroom in Mathematics

Dear students, dear learners, dear friends!

Math can be a difficult subject, but it is something that everyone is capable of mastering. Math is based on *LOGIC* and *RULES* that you can study and apply – there isn't any special skill involved. The subject might come easier to others than you feel it does to you, but if you practice and try hard you'll also be good at math.

According our project colleague Andreas Skotinos from Cyprus, It is generally agreed that doing mathematics is a critical skill for all, adults and children, geniuses and people with limited intelligence, persons with high education and individuals with low literacy and knowledge.

According the great Albert Einstein, EVERYBODY IS A GENIUS. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.



Interior for a Fun Classroom in Mathematics

Dear students, dear learners, dear friends!

This is a true - *EVERYBODY IS A GENIUS!*

But never forget this:

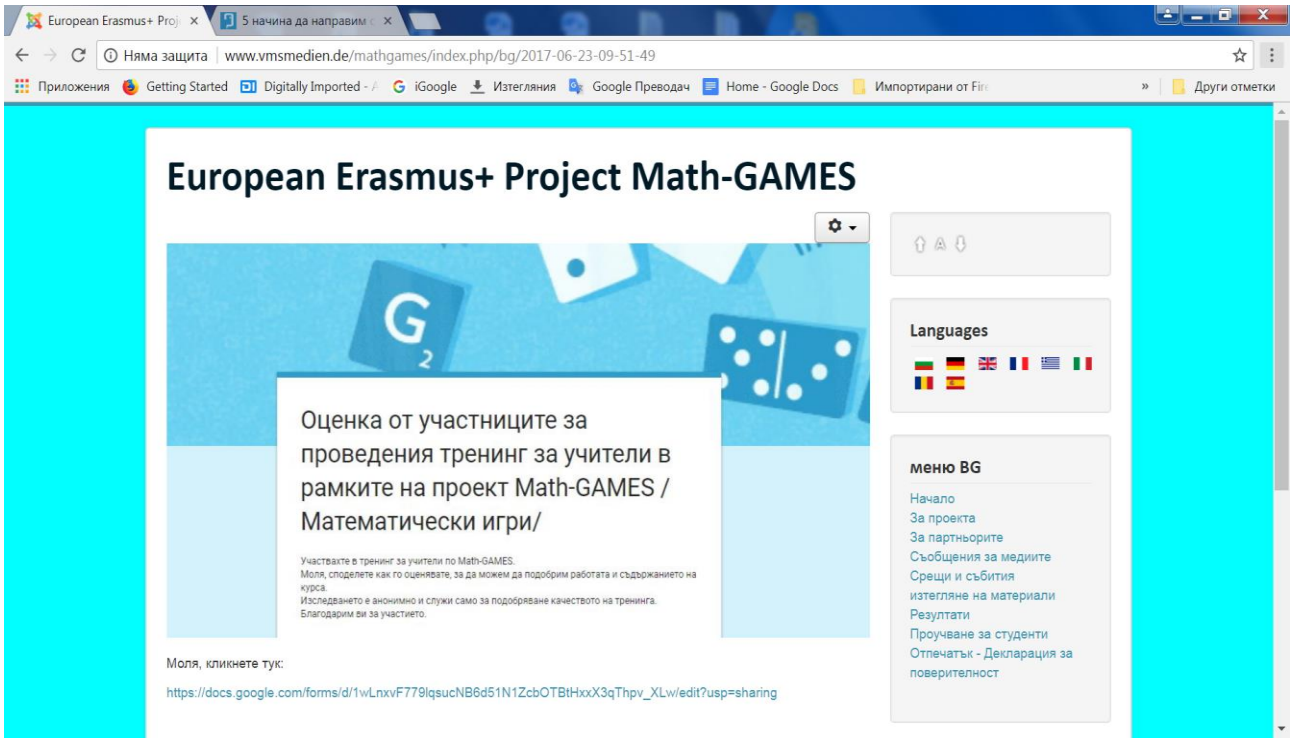
Rule of Math:

If it seems easy, you're doing it wrong.

9LoLs.com

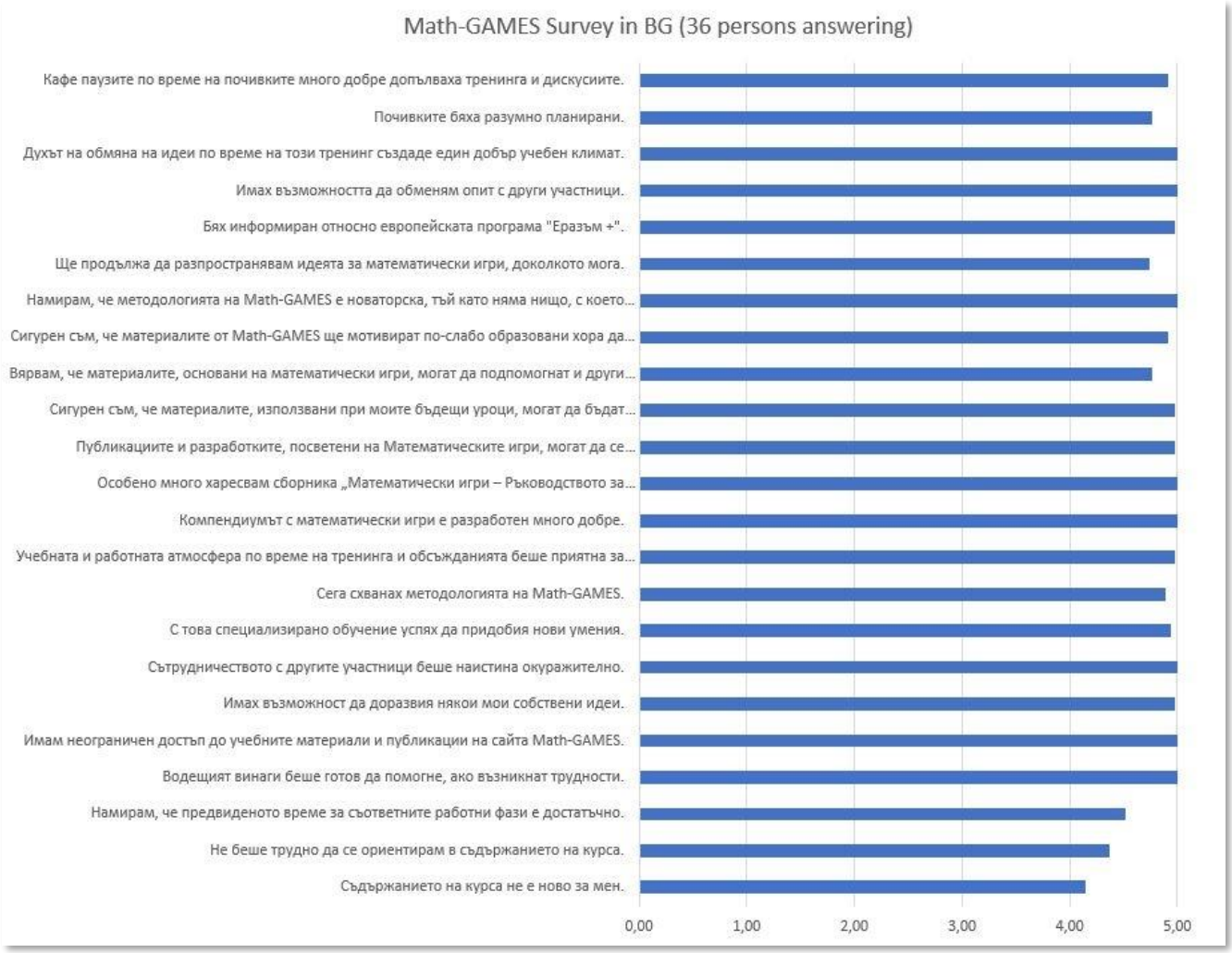
The Photo - documentation from the introduction to the practice of Social integration by using Math-GAMES methodology, presented by KRUG Art Movement during the Learning/Teaching/Training Activity in Cyprus, March 2018

Evaluation of the Multiplier Event



Above you can see the start page for the online evaluation tool. This tool is available in every language and all participants and people involved in the Math-GAMES project used the evaluation tool. The results are shown below. The online evaluation tool will remain accessible so that our project team can continue to ask users for their opinions.

Questions	Average	Answers
Съдържанието на курса не е ново за мен.	4,14	5 4 4 5 4 4 4 4 5 4 4 4 4 4 4 4 4 4 4 4 5 4 4 5 3 5 4 4 4 4 4 4 4
Не беше трудно да се ориентирам в съдържанието на курса.	4,37	4 3 5 4 4 4 4 4 4 4 4 5 4 4 4 4 4 4 4 5 4 5 4 4 5 5 5 4 5 5 4 5 5 5 5 4
Намирам, че предвиденото време за съответните работни фази е достатъчно.	4,51	5 5 4 4 5 5 4 4 4 4 4 4 5 4 4 5 5 5 5 4 5 4 4 4 5 5 4 4 5 5 4 5 5 4 5 5 5
Водещият винаги беше готов да помогне, ако възникнат трудности.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Имам неограничен достъп до учебните материали и публикации на сайта Math-GAMES.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Имах възможност да доразвия някои мои собствени идеи.	4,97	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5
Сътрудничеството с другите участници беше наистина окуражително.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
С това специализирано обучение успях да придобия нови умения.	4,94	5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5
Сега схванах методологията на Math-GAMES.	4,89	5 5 5 5 4 4 5 5 4 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Учебната и работната атмосфера по време на тренинга и обсъжданията беше приятна за мен.	4,97	5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Компендиумът с математически игри е разработен много добре.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Особено много харесвам сборника „Математически игри – Ръководството за инструктора", в която игрите са разработени като методи при обучението по математика за възрастни.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Публикациите и разработките, посветени на Математическите игри, могат да се използват и в моята сфера на обучение и преподаване.	4,97	5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Сигурен съм, че материалите, използвани при моите бъдещи уроци, могат да бъдат използвани в дългосрочен план.	4,97	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Вярвам, че материалите, основани на математически игри, могат да подпомогнат и други учители за по-лесно преподаване на математика.	4,77	4 5 5 5 4 4 5 4 5 5 4 5 5 5 5 4 4 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Сигурен съм, че материалите от Math-GAMES ще мотивират по-слабо образовани хора да научат математика.	4,91	5 5 4 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Намирам, че методологията на Math-GAMES е новаторска, тъй като няма нищо, с което да я сравнявам.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Ще продължа да разпространявам идеята за математически игри, доколкото мога.	4,74	4 4 5 5 5 4 4 5 5 5 5 5 5 4 5 4 5 5 4 5 5 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5
Бях информиран относно европейската програма "Еразъм +".	4,97	5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Имах възможността да обменям опит с други участници.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Духът на обмяна на идеи по време на този тренинг създаде един добър учебен климат.	5,00	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Почивките бяха разумно планирани.	4,77	5 5 5 4 4 5 5 4 4 5 5 4 4 5 5 4 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
Кафе паузите по време на почивките много добре допълваха тренинга и дискусиите.	4,91	5 5 5 5 4 5 5 5 5 5 5 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5



Data from the online survey shows in principle a high degree of approval of the events, which were included in the program 'Multiplier Event E10 – Dissemination Conference in Bulgaria' and also in the preliminary discussion of the methodology, in which fife persons took part. 31 were participants who answered the questions on October 3 and 4 2017. In that way the total number of people who took part in the survey was 36.

For 82, 8% of the participants the content of the two events were not completely new. It is understandable if we bear in mind that the majority of the participants were specially picked up according to their potential to make innovations. It is too important to note that 99,4% of them are convinced that the content of the courses as well as the materials would help their future work. Further 87,4% of them said that it was no problem to orientate in the content of the course. Almost all or more precisely 98,8% of them acknowledged that through the trainings, workshops, discussions and the free exchange of opinions they gained new skills. The answer that the materials would help teachers in mathematics because there is a big necessity of innovations in the very system of education of poor educated adults who represent different specific groups.

99, 4% of the participants are ready to promote the dissemination of the materials of the project and also of the offered methodology. And the support of the participants for the access to the published books is just 100%. The same is concerned also to the content of the site of Math-GAMES project. Also we need to say that the assessment of the published books of project - Guidebook and Compendium – is very high: 100% of the participants said that the books are excellent. These books, as show the data of our survey, attract a big interest among the people who are mathematics teachers.

This percentage is close to the results of the exchange of ideas during the events. A lower estimate is given by the participants for the time provided for the meetings: 90, 2% of the respondents saying that "the time is sufficient" and therefore almost 10% of the respondents consider it insufficient. This result can be interpreted bilaterally - on the one hand, the time was not "quite sufficient", and on the other - that the participants' interest in such discussions, seminars, workshops, etc. was encouraged and they consider that "demand" is greater than "supply". This in fact provides opportunities for subsequent similar events, with the assistance of the participants themselves.

REPORT ABOUT THE TESTING AND EVALUATION OF THE MATH-GAMES LEARNING/TEACHING/TRAINING ACTIVITIES (PILOT OF A TEACHER TRAINING COURSE) C1 IN CYPRUS

Official Name of the Math-GAMES-Project-Partner:
Cyprus Mathematical Society
Name and e-Mail-Address of the contact person:
Gregory Makrides, makrides.g@eaecnet.com

The Pilot C1 of a Math-Gamer Teacher Training Course took place in Cyprus

The Teacher Training Course C1
Date: 25 to 29 March 2018 Place: Larnaca, Cyprus
Number of Persons: 30 from all the participant countries in the project

Report and Evaluation of the Short-term joint staff training events: piloting and evaluating the MathGAMES teacher training course

What we are going to develop must be experimented and evaluated in piloting and training activities. Especially the teacher training course about MathGAMES must be piloted and evaluated: A teacher training course about the project-theme "Mathematics learning by games" was held in Cyprus with participants from all countries. The result of this pilot should be an additional help for the development of the "MathGAMES teacher training course", which will hold in the next ten years regularly.
The pilot was held successfully. Here is the agenda and some photos from the process:

Day 0: Saturday, 24.03.2018	Arrival Day.
Day 1: Sunday, 25.03.2018		
	14:30 - 16:00	Introduction, Project Presentation and website
	16:30 - 18:00	Games and cultural Market Place set up, Presentation of GAMES (partner bring games for display) (the co-ordinator of each country)
	18:00 - 19:00	Learning to play, Methodology
Day 2: Monday, 26.03.2018		
	09:30 - 11:30	Presentation of one Game based on the Math-Games methodology
	12:00 - 14:00	Presentation of one Game based on the Math-Games methodology
	15:00 - 17:00	Homework and Social Activities
Day 3: Tuesday, 27.03.2018		
	09:30 - 11:30	Presentation of one Game based on the Math-Games methodology
	12:00 - 12:30	How to prepare a lesson plan
	12:30 - 14:00	Trainees prepare lessons in 6 small groups of 2-4 persons
	15:00 - 17:00	Homework and Social Activities
Day 4: Wednesday, 28.03.2018		
	09:30 - 11:30	Trainees deliver/present lessons
	09:30 - 11:30	Trainees deliver/present lessons
	15:00 - 17:00	Homework and Social Activities
Day 5: Thursday, 29.03.2018		
	10:00 – 17:00	E1-Seminar in Nicosia to evaluate the pilot, discuss ideas for dissemination and promotion and present one of the lessons to the public by a trainee-group
Day 6: Friday, 30.03.2018: Departure Day		

Report on the Pilot Course C1 of the Teacher Training Course MathGAMES

by evaluator Heinrich Hausknecht

Structure

The pilot course for teacher training took place in the time from Sun., 25.03.2018 to Do., 29.03.2018 in Cyprus and was divided into two parts.

Part 1 of the course, called C1, was conducted in the period from Sun., 25.03.2018 to Wed., 28.03.2018 in Larnaca in the "New York" area of the Palm Beach Hotel.

Part 2 of the course named E1 (International Seminar) was planned as a seminar and took place on Thursday, 29.03.2018 in Nicosia in the room "Akamas" of the Hilton Cyprus hotel. In future, this day will be the final day of teacher training and will be integrated in the further education course.

Member

For the course C1, each project partner could have three persons from his institution participate. Every project partner made use of this possibility. In total, 30 people participated.

Seminar E1 (part 2 of the course) was attended by about 40 participants from course C1 (some of them were also speakers in the seminar), teachers from Cyprus and teachers from Greece and Israel.

Procedure

Course C1 was spread over four days (see schedule above).

The first day of the course included 4.5 hours of work from 2:30 pm to 7:00 pm, the other three days were full time events with a core working time of 9:30 am to 5:00 pm. As the students often worked independently in groups, especially in the afternoons, the students were able to individually extend their working hours on these afternoons to complete the given work on schedule. This was also claimed in many cases.

Seminar E1 was a half-day event with a core time of 09:45 - 12:45.

Aims

In course C1, the participants were to become familiar with the Math Games project. This includes in particular:

- getting to know the homepage (structure, content: for example, additional help and

supplements to the compendium and the manual, download options)
- Getting to know games in the Compendium
- Handling the compendium
- Get to know and understand the Math Games methodology
- Getting to know the teacher's manual (content and structure)
- Planning and conducting lessons with the help of the Compendium and the Teachers Manual
- Independent planning and execution of lessons with the Math Games methodology
- Creating worksheets using the Math Games methodology

The seminar E1 had the following goals:
- Participants should become familiar with the Math Games project and its methodology.
- C1 course participants should present the Math Games lessons developed in the course.
- Evaluation of the pilot project "teacher training" by the participants.

Lessons and content of the C1 course

First day

After a welcome by co-ordinator Roland Schneidt, he informed all participants about the purpose of the C1 and E1 advanced training courses. He gave an overview about the contents of the course. All previously created materials were presented to the students and handed out.

After an ice braking (dance "seven step"), the actual work began in the course.

The co-ordinator presented the Math-Games project to all participants with the help of an extensive presentation including the very well-structured homepage of the project. Here he showed a lot of possibilities, how the content in the download area of the homepage can be used for the preparation and execution of a lesson

In the subsequent marketplace of the games, the participants got to know a selection of games closer. Some games were very complicated, so the proposed time frame had to be expanded considerably.

The participants were divided into six groups at six different game tables. In each group there was one participant who acted as an expert and who introduced and explained the game to the rest of the group. In each group a new expert was trained, who then explained and introduced the game in the next run of a new group. Then the game was played. After 10 minutes, a change took place in a fixed sequence.

After a total of seven rounds, all got to know the six games and each participant has worked in one run as an expert.

These matches have been very well received by the participants. The games were played with enthusiasm and the participants had good opportunities to get to know each other.

Second day

On the second day, the Greek and Bulgarian project participants each presented a lesson in a compendium game. The participants had the opportunity to learn the Math Games methodology as a student and were also able to observe and get to know the teacher and his methodology.

Third and fourth day

On the third day, the project participant from Cyprus made another presentation of a lesson of a game using the Math Games methodology. Afterwards the participants were very clearly informed by the project participant from Italy how to plan, prepare and execute a lesson with the Math Games methodology.

Then the participants were divided into six groups. It was ensured that the seminar participants of a country were in different groups. Each group chose a game from the compendium and then worked out a lesson.

This lesson was then presented to all participants. The presentation took place according to the sample plan:

- Presentation of the game
- Presentation of the lesson plan (preparation of the lesson, timetable, implementation, learning objective control)
- Carrying out the lesson or simulating it

There was a good working atmosphere in the respective working groups and everyone was enthusiastic about the work. The presentations made it very clear that the participants understood the Math Games methodology and can also implement it. Two presentations selected by all participants were then presented to a new audience in the E1 seminar.

Fifth day

Execution of the seminar E1 (see below)

After a short welcome by Professor Dr. Gregory Makrides, the coordinator Roland Schneidt gave a clear introduction to the Math Games project and the methodology behind it. Likewise, he explained the homepage of the project as well as the many aids in the download area of the homepage. The two selected C1 groups from the previous day then presented their lessons. The seminar participants also evaluated the Math Games course.

Rating and Outlook

In summary, it can be stated that the course C1 and the seminar E1 was a complete success for all. The participating speakers worked convincingly in their roles and enthusiastically conveyed the content to the participants.

The participants were enthusiastic about it and worked hard during the entire course phase. The course did not only familiarize participants with the Math Games methodology, but they also understood it after completing the course and are now able to use the materials to independently design lessons using the Math Games methodology to prepare and carry out.

The conversion of the pilot course into a regular training course can be fully recommended from the perspective of the evaluator.

This is also clearly confirmed by the evaluation of the pilot course. The following should be noted:

- The course should be designed for five days with working hours from 09:00 to 17:00.
- The course contents should be taken over from the pilot course. The period for the market place of the games is to be doubled on the first day.
- The contents of the seminar E1 should be taken over as content of the final day of the training course.

Signed by Heinrich Hausknecht
evaluator and participant in the C1 Pilot Course
Bad Kötzting, 22.05.2018

In German (DE)

Evaluation des C1-Pilot-Kurses

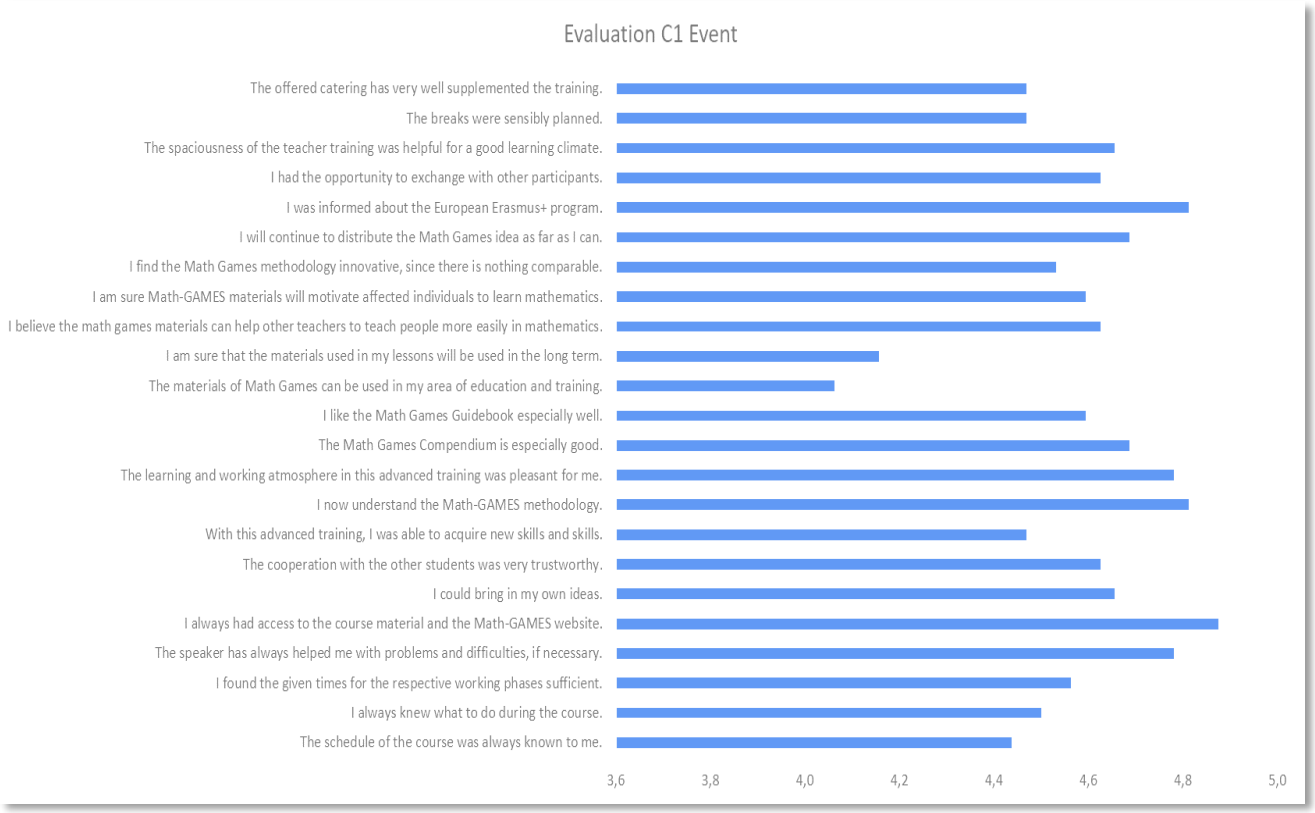
- Alle Teilnehmer des Pilotkurses aus den Ländern Bulgarien, Deutschland, Frankreich, Griechenland, Italien, Rumänien, Spanien und Zypern wurden die inhaltsgleichen Fragebögen online in englischer Sprache angeboten und von den Teilnehmern auch beantwortet.
- Die hier angegebene Auswertung entstand zum Stichtag 15.05.2018
- Übereinstimmend zeigte sich eine übergroße Zufriedenheit mit dem Projekt und den Projektinhalten des Pilotkurses.
- Zu jeder Frage mussten Wertungen zwischen 1 und 5 abgegeben werden, das wäre ein Durchschnitt von 3,0. Bei den reellen Antworten lag jedoch der Durchschnitt zwischen 4,1 und 4,9, das heißt, dass eine übergroße Zustimmung an allen Fragen erzielt werden konnte.
- Besonders erfreulich war, dass die größten Zustimmungen nicht nur bei dem erarbeiteten Material und den Inhalten der Homepage (4,9) lagen, sondern auch, dass die Teilnehmer durch den Kurs die Math-Games – Methodik Kurs verstanden haben (4,8), die Lern- und Arbeitsatmosphäre in diesem Kurs sehr angenehm war (4,8) und die Teilnehmer über das European Erasmus+ Programm informiert wurden (4,8).
- Erwähnenswert ist außerdem, dass das Kompendium und das Guidebook mit einer Zustimmung von 4,6 und 4,7 als sehr gut bewertet wurden und die Teilnehmer mit einer Zustimmung von 4,7 weiterhin die Math-Games-Idee verbreiten werden.
- Den schlechtesten Wert von 4,1 im Durchschnitt der Antworten bekam die Frage, ob das Material im jeweiligen Erziehungs- und Unterrichtsumfeld eingesetzt werden kann. Dies lag vor allem daran, dass ein großer Teil der Teilnehmer aus dem Sekundarbereich I und II kam. Die Zielgruppe des Kurses aber in erster Linie in der Erwachsenenbildung liegt. Aber trotzdem ist dieser Wert immer noch sehr erfreulich.

In English (EN)

Evaluation of the C1 pilot course

- All participants in the pilot course from Bulgaria, Germany, France, Greece, Italy, Romania, Spain and Cyprus were offered the same content questionnaires online in English and answered by the participants.
- The evaluation given here was made on the key date 15.05.2018
- Coincidentally, there was an overwhelming satisfaction with the project and the project contents of the pilot course.
- Each question had to be scored between 1 and 5, that would be an average of 3.0. However, for the real answers, the average was between 4.1 and 4.9, which means that there was an overwhelming approval of all questions.
- It was particularly gratifying that the biggest consents were not only the material and contents of the homepage (4.9), but also that the participants understood the Math Games methodology course (4.8), the learning and working atmosphere in this course was very pleasing (4.8) and the participants were informed about the European Erasmus + program (4.8).
- It is also worth noting that the Compendium and the Guidebook were rated very good with 4.6 and 4.7 and that the 4.7-guess participants would continue to spread the Math Games idea.
- The worst score of 4.1 on average for the answers was the question of whether the material could be used in the respective educational and teaching environment. This was mainly because a substantial proportion of participants came from lower secondary education. The target audience of the course is primarily in adult education. But still this value is very pleasing.

Questions for the 32 participants of the C1 Event	Average																																
The schedule of the course was always known to me.	4,4	4	4	5	5	4	4	5	4	4	5	4	5	5	5	5	5	4	5	5	2	4	4	5	5	4	5	4	4	4	4	5	
I always knew what to do during the course.	4,5	5	4	4	5	5	5	5	5	5	3	5	5	5	4	5	5	4	4	5	3	4	4	5	5	5	5	4	4	3	4	5	
I found the given times for the respective working phases sufficient.	4,6	4	5	5	4	5	5	4	4	5	5	5	5	5	5	5	5	4	5	5	5	3	5	5	5	5	5	3	3	4	3	5	
The speaker has always helped me with problems and difficulties, if necessary.	4,8	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	3	5	5	4	5	5	5	4	5	4	4	5	
I always had access to the course material and the Math-GAMES website.	4,9	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	4	5	5	5	5	5	4	5	4	5	5		
I could bring in my own ideas.	4,7	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	5	4	3	4	5	5	4	5	5	4	4	4	5	
The cooperation with the other students was very trustworthy.	4,6	5	5	5	5	5	4	4	5	5	5	3	5	5	5	5	5	5	4	5	5	4	5	4	4	4	5	5	3	5	4	5	
With this advanced training, I was able to acquire new skills and skills.	4,5	4	5	5	5	3	5	4	3	3	5	4	5	5	5	4	5	5	4	5	5	5	5	5	4	4	5	5	4	5	4	4	4	5	
I now understand the Math-GAMES methodology.	4,8	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	4	5	4	5	5	5	5	5	4	4	4	5	
The learning and working atmosphere in this advanced training was pleasant for me.	4,8	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	4	4	5	5	4	5	4	4	4	5	
The Math Games Compendium is especially good.	4,7	5	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	4	5	5	5	5	5	5	3	5	3	5	3	5		
I like the Math Games Guidebook especially well.	4,6	5	5	4	5	5	5	5	5	5	5	4	5	5	5	5	5	5	3	5	4	2	4	4	4	5	5	4	5	4	5	5	5		
The materials of Math Games can be used in my area of education and training.	4,1	5	5	4	5	3	4	3	3	3	5	4	5	5	5	5	5	5	3	4	5	3	3	4	4	4	4	3	5	4	2	3	5		
I am sure that the materials used in my lessons will be used in the long term.	4,2	5	4	3	5	3	4	4	3	3	5	4	5	5	5	5	5	5	3	4	3	5	4	5	4	4	4	4	5	4	2	4	5		
I believe the math games materials can help other teachers to teach people more easily in mathematics.	4,6	5	5	4	5	5	5	4	5	5	5	4	5	5	5	5	5	5	3	5	5	4	5	5	4	4	5	4	5	4	5	4	4	4	5
I am sure Math-GAMES materials will motivate affected individuals to learn mathematics.	4,6	4	5	4	5	5	5	4	5	5	5	5	5	5	5	5	5	5	3	5	4	4	5	5	4	4	4	5	5	4	4	4	4	5	
I find the Math Games methodology innovative, since there is nothing comparable.	4,5	5	4	4	5	5	4	4	5	5	5	4	5	5	5	5	5	5	3	5	4	4	5	5	4	4	4	4	5	5	5	4	3	4	5
I will continue to distribute the Math Games idea as far as I can.	4,7	5	5	4	5	5	4	5	5	5	5	5	5	5	5	5	5	5	3	5	5	3	4	5	4	4	5	5	5	5	4	5	5		
I was informed about the European Erasmus+ program.	4,8	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	5	5	5	5	5	5	5	4	5	4	4	5			
I had the opportunity to exchange with other participants.	4,6	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	3	5	5	5	5	4	3	3	5		
The spaciousness of the teacher training was helpful for a good learning climate.	4,7	4	4	5	5	5	4	5	5	5	5	5	5	5	5	5	5	5	4	5	5	5	5	4	3	5	5	5	5	4	3	4	5		
The breaks were sensibly planned.	4,5	4	5	5	5	3	5	5	3	3	5	5	5	5	5	5	5	5	4	5	4	4	5	4	4	5	5	5	4	3	4	5			
The offered catering has very well supplemented the training.	4,5	5	5	5	5	2	4	4	2	2	5	5	5	5	5	5	5	5	4	5	5	5	5	4	5	5	5	5	4	4	4	4	5		



Report about the Implementation, Testing and Evaluation of the Math-Games Multiplier Events: Seminar E1 and Dissemination Conference E2 in Cyprus

Official Name of the Math-GAMES-Project-Partner:
Cyprus Mathematical Society
Name and e-Mail-Address of the contact person:
Gregory Makrides, makrides.g@eaecnet.com

The following Multiplier Events E1 (Seminar) and E2 (International Conference) took place in Cyprus

The Seminar E1
Date: 29 March 2018 Place: Nicosia Number of Persons: 60 local, 13 foreign (Greece, Israel)

The International Conference E2
Date: 29 March 2018 Place: Nicosia Number of Persons: 41 local, 13 foreign

Evaluation of the Multiplier Events E1 and E2

Remark
The participants in both events expressed in general very positive comments for the outcomes presented to them. In both events there was an unmistakable evidence that the outcomes can be used in the classroom

Report on the Results of the Evaluation of the Seminar in Cyprus (event E1, Thursday, 29.03.2018 in Nicosia, Cyprus) for the project Math-GAMES by the participating teachers

This event took place in Nicosia, Cyprus, on 29/3/2018 and it was aiming at the presentation and discussion of Math-Games Methodology as well as at the presentation of pilot lessons, the simulation of a game and the assessment of what could be achieved.

The event was delivered in the form of a seminar. The participants of the event were mainly teachers from Cyprus as well as teachers, researchers or other interested persons from the participating countries in the project and from neighboring to Cyprus countries, like Greece and Israel.

The main project co-ordinator Roland Schneidt (left) and the local co-ordinator from Cyprus Gregory Makrides during the E1 Seminar.

The seminar was post-evaluated by the participants and the results for the ones that chose the English version of the assessment forms are summarized here.

Concerning the opinions of the teachers on the seminar the following remarks and comments can be concluded for each statement they are asked to consider.

Results of the Evaluation of the Seminar in Cyprus (event E1 Thursday, 29.03.2018 in Nicosia, Cyprus) for the project Math-GAMES by the participating teachers

0 I cannot make a statement about this

1 Approval to the statement 0% - 20% I can seldom agree with the statement

2 Approval to the statement 20% - 40% I can sometimes agree with the statement

3 Approval to the statement 40% - 60% I can usually agree with the statement

4 Approval to the statement 60% - 80% I can almost always agree with the statement

5 Approval to the statement 100% - 80% I can fully agree with the statement

Assessments of the learning process during the seminar	0	1	2	3	4	5
I found the given time duration sufficient.	-	-	1,9 %	7,7 %	26,9 %	63,5 %
The speaker has always helped with questions, if necessary.	1,9 %	-	-	13,4 %	38,5 %	46,2 %
I always had access to the course material and the Math-GAMES website.	13,5 %	5,7 %	1,9 %	9,6 %	27,0 %	42,3 %
I could bring in my own ideas.	8,6 %	5,2 %	8,6 %	19,0 %	27,6 %	31,0 %

The cooperation with the other participants was very good.	11,5 %	5,8 %	3,8 %	26,9 %	23,1 %	28,9 %
With this seminar, I was able to acquire new knowledge and skills.	3,8 %	1,9 %	1,9 %	19,2 %	38,6 %	34,6 %
I now understand the Math-GAMES methodology.	-	-	1,9 %	19,2 %	36,5 %	42,3 %
The learning and working atmosphere in this seminar was pleasant for me.	-	-	-	11,7 %	27,5 %	60,8 %
Reviews of the books and the results of the training from my personal point of view	0	1	2	3	4	5
The Math Games Compendium is especially good.		-	-	7,7 %	40,4 %	51,9 %
I like the Math Games Guidebook especially well.	-	-	-	9,6 %	34,6 %	55,8 %
The materials of Math Games can be used in my area of education and training.	-	-	1,9 %	9,4 %	32,1 %	56,6 %
I am sure that the materials used in my lessons will be used in the long term.	1,9 %	1,9 %	-	9,6 %	42,3 %	44,3 %
I believe the math games materials can help other teachers to teach people more easily in mathematics.	-	-	1,9 %	13,5 %	36,5 %	48,1 %
I am sure Math-GAMES materials will motivate affected individuals to learn mathematics.	-	-	1,9 %	13,5 %	30,8 %	53,8 %
I find the Math Games methodology innovative, since there is nothing comparable.	5,1 %	-	3,4 %	28,8 %	32,2 %	30,5 %
I will continue to distribute the Math Games idea as far as I can.	-	-	3,8 %	13,2 %	32,1 %	50,9 %
General assessments of this seminar	0	1	2	3	4	5
I was informed about the European Erasmus+ programme.	5,9 %	5,9 %	1,9 %	25,5 %	19,6 %	41,2 %
I had the opportunity to exchange with other participants.	7,8 %	11,8 %	7,8 %	33,3 %	19,6 %	19,7 %
The venue of the seminar was helpful for a good learning climate.	-	-	1,9 %	13,7 %,	37,3 %	47,1 %
The breaks were sensibly planned.	1,9 %	1,9 %	13,5 %	15,4 %	34,6 %	32,7 %
The offered catering has very well supplemented the seminar.	7,8 %	3,9 %	-	3,9 %	37,3 %	47,1 %

Free text answers

To the learning process during the seminar, I would like to note the following:

- It would have been more interesting, if the seminar was more interactive e.g. all the participants should be involved in playing the games. Very explicable.
- The web page and the material are very useful. Given material is very helpful.
- Add activities which include participation of all the participants of the seminar, so it would be more interactive.
- It would be more helpful, if the seminar had workshops for all the participants, to have the chance to plan lessons using Math-GAMES (set the goals in a lesson plan and design their own activities).
- A very interesting topic and suggested materials to be made use of in future with low activity students.

For further training I would like to say the following in general:

- In smaller groups at schools, training as part of teacher's professional development would have been useful.

- It will be helpful for teachers to be guided to connect mathematics goals included in curriculum with the structure of Math-Games.
- The seminar should be more practical. The participants should have the opportunity to play the games at the same time.
- It should be more practical with enough time to play and understand the games.
- More games in detail for us to learn.
-

General comments:

- The seminar was too theoretical. I was expecting more interactive hands-on activities and trying to play the maths games ourselves, excellent organizing
- Everything was best organized. With all this information were given to me, I will have very nice ideas and valuable experience in my life practise.
- Very good organisation and venue.
- Organize more often seminars in which the participants are from different EU-countries. Interactive meetings with teachers from EU-schools help us expand our methods and teaching.
- Excellent. Exceptionally clever work. Can't wait to try them all.

General Conclusions

- The material produced by the project is of high value and, taking into consideration that most of the participants were teachers for learners in other ages or abilities (not only for adult slow learners), the outcomes of the project can be used for other learners as well.
- The material produced is innovative and can be used, with minor adaptations, for many other purposes further to the ones they were designed.
- The material produced provides opportunities for innovative approaches and motivation, thus enriching the learning of mathematics process.
- The participants seem to have been expected higher degree of involvement and participation.
- The participants seem to have been expected higher degree of connection of the games with the goals and approaches for mathematics learning.

Report on the Results of the Evaluation of the Seminar in Cyprus (event E2, Thursday, 29.03.2018 in Nicosia, Cyprus) for the project Math-GAMES by the participating teachers

This event took place in Nicosia, Cyprus, on 29/3/2018 and it was delivered as a dissemination Conference. The conference was aiming at the presentation of the complete Project to the public and to discuss applications, dissemination and exploitation of the results of the Math-Games Project.

The Conference combined presentations covering the Policies of Adult Education in Cyprus, the Math-Games Project, its Methodology, its main outputs and materials.

The conference was attended by educationists at various levels both from the participating countries as well as from neighbouring to Cyprus ones.

The conference was post-evaluated by the participants and the results for the ones that chose the English version of the assessment forms are summarized in the Appendix.

Concerning the opinions of the teachers on the seminar the following remarks and comments can be concluded for each statement they are asked to consider.

Results to the Questionnaire Evaluating the Conference Event E 2, Thursday, 29.03.2018 in Nicosia, Cyprus for the project Math-GAMES by the participants

0 I cannot make a statement about this

1 Approval to the statement 0% - 20% I can seldom agree with the statement

2 Approval to the statement 20% - 40% I can sometimes agree with the statement

3 Approval to the statement 40% - 60% I can usually agree with the statement

4 Approval to the statement 60% - 80% I can almost always agree with the statement

5 Approval to the statement 100% - 80% I can fully agree with the statement

16 persons were answering the questions.

Assessments of the learning process during the seminar	0	1	2	3	4	5
I found the given time duration sufficient.	6,3 %	-	-	12,6 %	6,3 %	75,0 %
The speaker has always helped with questions, if necessary.	-	-	-	11,8 %	29,4 %	58,8 %
I always had access to the course material and the Math-GAMES website.	-	7,6 %	-	-	7,6 %	84,8 %
I could bring in my own ideas.	6,6 %	-	6,6 %	20,0 %	13,3 %	53,5 %
The cooperation with the other participants was very good.	6,6 %	6,6 %	6,6 %	-	33,3 %	46,8 %
With this seminar, I was able to acquire new knowledge and skills.	-	-	6,2 %	6,2 %	12,6 %	75,0 %
I now understand the Math-GAMES methodology.	--	-	-	12,4 %	31,3 §	56,3 %
The learning and working atmosphere in this seminar was pleasant for me.	-	6,1 %	-	6,2 %	18,8 %	68,9 %
Reviews of the books and the results of the training from my personal point of view	0	1	2	3	4	5
The Math Games Compendium is especially good.	-	-	-	6,2 %	31,3 %	62,5 %
I like the Math Games Guidebook especially well.	-	-	-	6,2 %	31,3 %	62,5 %
The materials of Math Games can be used in my area of education and training.	-	-	-	25,0 %	25,0 %	50,0 %
I am sure that the materials used in my lessons will be used in the long term.	-	-	-	25,0 %	25,0 %	50,0 %
I believe the math games materials can help other teachers to teach people more easily in mathematics.	-	-	-	18,2 %	25,0 %	56,3%

I am sure Math-GAMES materials will motivate affected individuals to learn mathematics.	-	-	-	-	25,0 %	75,0 %
I find the Math Games methodology innovative, since there is nothing comparable.	-	-	6,2 %	-	31,3 %	62,5 %
I will continue to distribute the Math Games idea as far as I can.	-	-	-	12,4 %	31,3 %	56,3 %
3. General assessments of this seminar	0	1	2	3	4	5
I was informed about the European Erasmus+ programme.	-	-	25,0 %	12,5 %	-	62,5 %
I had the opportunity to exchange with other participants.	-	6,5 %	6,5 %	20,0 %	13,4 %	53,6 %
The venue of the seminar was helpful for a good learning climate.	-	-	-	12,5 %	6,2 %	81,3 %
The breaks were sensibly planned.	-	-	-	20,0 %	20,0 %	60,0 %
The offered catering has very well supplemented the seminar.	-	-	-	7,1 %	28,6 %	64,3 %

In general, I would like to say the following:

To the learning process during the seminar, I would like to note the following:

- It has been really an enlightening experience and the whole project an excellent job.
- May be, it would be more interesting attending the presentation if it was more interactive with participants.
- Also, the attending time was a bit difficult because we start work at schools at 07:30 a.m. and by 3:00 p.m. we already are very, very tired.

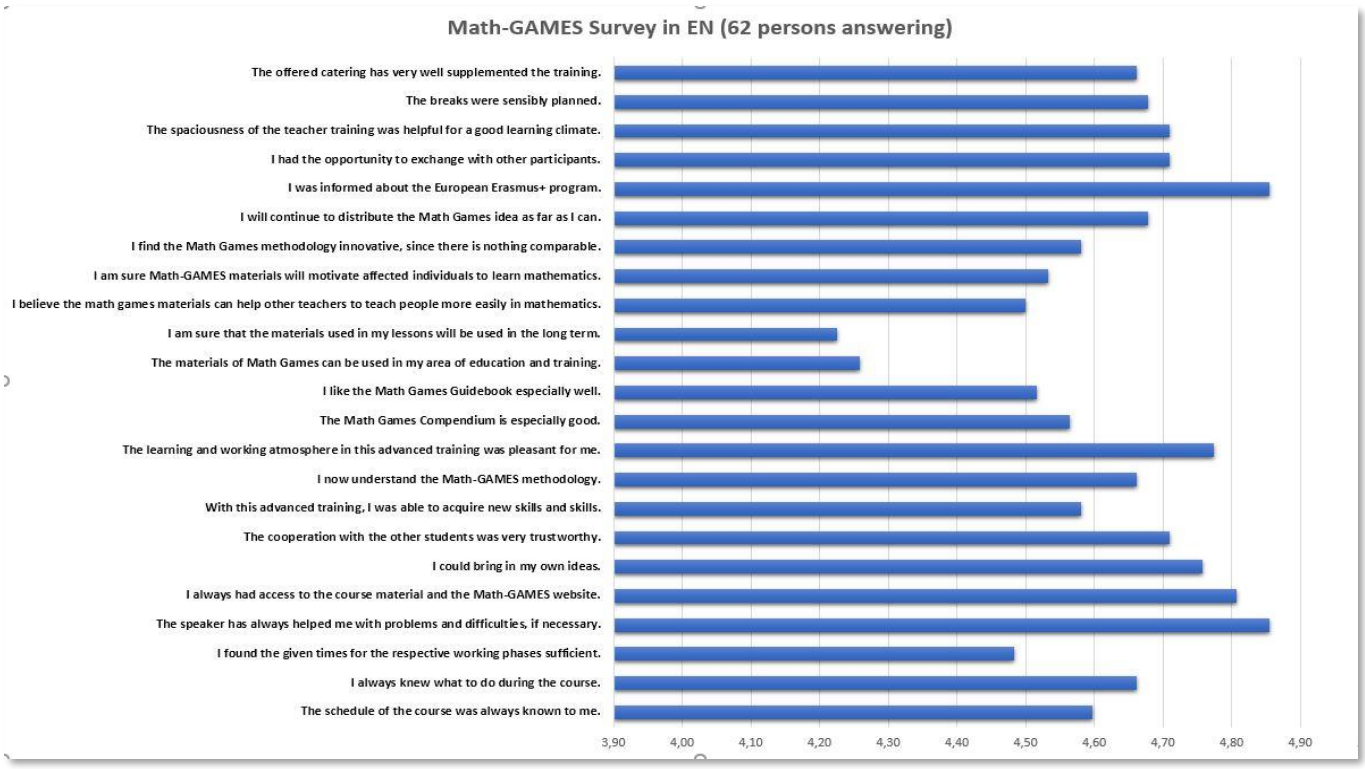
General comments:

- We heard twice about Math-Games as introduction to the project.

During the Seminar E1 and the Conference E2 a camera transferred the activities to a big screen, so that everybody could take part in the shown games.

Results to the Questionnaire Evaluating the Events E1 and E 2, Thursday, 29.03.2018 in Nicosia, Cyprus for the project Math-GAMES by the participants

Question	Average	Answers
The schedule of the course was always known to me.	4,60	5 4 1 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 5 5 4 4 5 4 4 5 5 5 5 5 5 5 4 5 5 2 4 4 5 5 4 5 4 4 4 4 5
I always knew what to do during the course.	4,66	5 4 3 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 4 5 5 4 5 5 5 5 5 5 3 5 5 5 4 5 5 4 4 5 3 4 4 5 5 5 4 4 3 4 5
I found the given times for the respective working phases sufficient.	4,48	4 4 4 4 4 4 4 5 4 3 5 5 5 5 5 4 5 5 5 5 5 4 5 5 5 4 5 5 4 3 5 4 4 4 4 5 5 5 4 5 5 4 4 5 5 5 5 5 5 5 5 4 5 5 5 3 5 5 5 5 3 3 4 3 5
The speaker has always helped me with problems and difficulties, if necessary.	4,85	5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 3 5 5 4 5 5 5 4 5 4 4 5
I always had access to the course material and the Math-GAMES website.	4,81	5 4 5 4 4 4 4 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 4 5 5 5 5 5 4 5 4 5 5
I could bring in my own ideas.	4,76	5 5 4 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 5 4 3 4 5 5 4 5 5 4 4 4 5
The cooperation with the other students was very trustworthy.	4,71	4 4 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 5 5 5 5 5 5 4 4 5 5 5 3 5 5 5 5 5 5 4 5 5 4 5 4 4 5 5 3 5 4 5 4 5
With this advanced training, I was able to acquire new skills and skills.	4,58	5 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 3 5 5 5 3 5 5 4 4 5 5 5 4 4 5 5 5 3 5 4 4 3 3 5 4 5 5 5 5 4 5 5 5 4 5 5 5 4 4 5 5 4 5 4 4 5
I now understand the Math-GAMES methodology.	4,66	5 5 5 5 5 4 4 4 3 4 5 5 5 5 5 3 5 3 5 5 5 4 5 5 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 5 4 5 5 5 5 5 4 4 4 5
The learning and working atmosphere in this advanced training was pleasant for me.	4,77	4 4 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 4 4 5 5 4 5 4 4 4 5
The Math Games Compendium is especially good.	4,56	5 5 5 5 4 4 4 4 3 5 5 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 4 4 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 4 5 5 5 5 5 3 5 3 5 3 5
I like the Math Games Guidebook especially well.	4,52	5 4 5 5 4 4 4 4 4 5 4 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 4 5 5 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 3 5 4 2 4 4 4 5 5 4 5 4 5 5
The materials of Math Games can be used in my area of education and training.	4,26	4 5 5 4 5 5 4 4 4 4 4 5 5 5 5 5 4 3 5 5 5 4 5 5 4 4 4 4 4 5 5 5 4 5 3 4 4 3 3 3 5 4 5 5 5 5 5 5 3 4 5 5 3 4 4 4 4 3 5 4 2 3 5
I am sure that the materials used in my lessons will be used in the long term.	4,23	4 4 4 5 4 4 4 4 4 4 4 4 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 4 4 5 4 3 5 3 4 4 3 3 5 4 5 5 5 5 5 5 3 4 3 5 4 5 4 4 4 4 5 4 2 4 5
I believe the math games materials can help other teachers to teach people more easily in mathematics.	4,50	5 4 5 4 4 4 4 4 4 5 4 5 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 4 5 5 4 5 5 5 4 5 5 5 5 5 5 4 5 5 5 5 5 3 5 5 4 5 5 4 4 5 4 5 4 4 5
I am sure Math-GAMES materials will motivate affected individuals to learn mathematics.	4,53	5 5 5 5 4 4 4 4 4 5 4 5 5 5 5 5 4 4 3 5 5 5 4 5 5 4 4 4 4 4 5 4 5 4 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 3 5 4 4 5 5 4 4 5 5 4 4 4 4 5
I find the Math Games methodology innovative, since there is nothing comparable.	4,58	4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 3 5 5 5 4 5 5 4 4 4 4 4 5 5 4 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 3 5 4 5 5 4 4 4 5 5 5 4 3 4 5
I will continue to distribute the Math Games idea as far as I can.	4,68	5 4 4 4 5 5 5 5 5 5 4 5 5 5 5 5 3 5 5 5 4 5 5 4 4 4 4 5 5 5 4 5 5 4 5 5 5 5 5 5 5 5 5 5 5 3 5 5 3 4 5 4 4 5 5 5 5 4 5 5
I was informed about the European Erasmus+ program.	4,85	5 5 5 4 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 5 5 5 5 5 5 4 5 4 4 4 5
I had the opportunity to exchange with other participants.	4,71	2 4 5 5 5 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 3 5 5 5 5 4 3 3 5
The spaciousness of the teacher training was helpful for a good learning climate.	4,71	3 4 5 4 5 5 5 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 4 4 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 4 3 5 5 5 5 4 3 4 5
The breaks were sensibly planned.	4,68	4 4 5 5 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 3 5 5 3 3 5 5 5 5 5 5 5 5 4 5 4 4 4 5 5 5 4 4 3 4 5
The offered catering has very well supplemented the training.	4,66	5 4 5 4 5 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 5 5 2 4 4 2 2 5 5 5 5 5 5 5 5 4 5 5 5 5 4 5 5 5 4 4 4 4 5



General Conclusions

- The participants in the conference found that the material produced by the project is of high value. It can be used not only for the training of adult slow learners but for other ages and abilities.
- The material produced is innovative and can be used, with minor adaptations, for many other purposes further to the ones they were designed.
- The material produced provides opportunities for innovative approaches and motivation, thus enriching the learning of mathematics process.
- The participants seem to have been expecting higher degree of involvement and participation.
- The participants seem to have been expecting higher degree of connection of the games with the goals and approaches for mathematics learning.

THE MATH-GAMES PROJECT – A REVIEW ABOUT GAMES

EVERYBODY LIKES PLAYING GAMES, DON'T THEY?

by Roland Schneidt, Volkshochschule Schrobenhausen, Germany

When you talk to children or adults and ask them about games, you realize, that everyone likes games. But when you really play, it is immediately clear that everyone understands something different under a "game", in most cases he means his favourite game.

During the Math-GAMES project I once learned from a training that somebody said he likes to play, but only when he does not have to think about it, because otherwise everyone knows that he has failed in case of losing. This does not happen in a pure gambling game.

That's when I realized, that not every person likes to play every game. And that is why the motivation to "learn mathematics through games" has been lost.

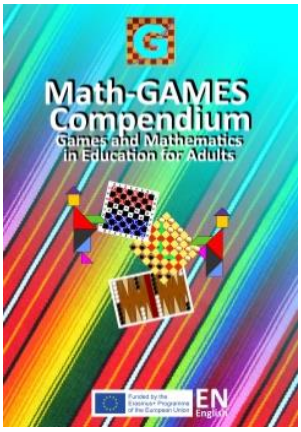
Therefore, one must draw the following conclusion: When choosing the games that should increase the motivation to learn mathematics, you must know your target audience exactly. So, you can only select those games and work with the learners who really enjoy them. You notice this immediately if you insert longer game sequences in the classroom before you start with the Math lesson.

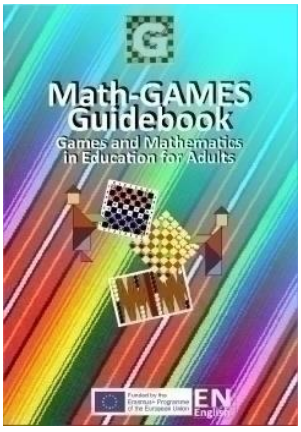
The Math-GAMES-Methodology must therefore be used very carefully, so that it does not do the opposite and even repels the learner. It is true, however, that the fun of playing and the learning success in Math learning is greater.

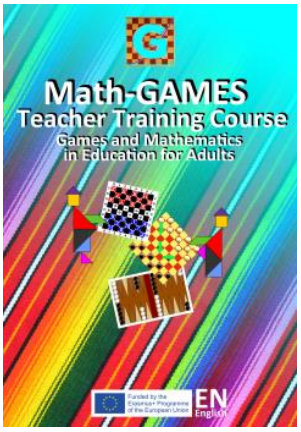
We also enjoyed the implementation of this three-year project because we were breaking new ground and could make our own way. The results are impressive, and we wish all teachers and students a lot of fun and success with the materials of the European Erasmus+ project Math-GAMES.

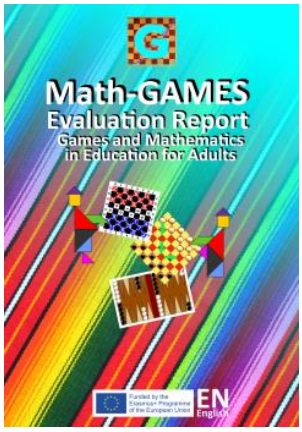
Games						
Sports Games The game is won or done by physical exercise.	**Physical Skill Games** The game is won by physical dexterity.	**Brain, Skill and Combination Solo Games** The game is won by brain dexterity.	**Strategy and thinking games** The game is won by brain dexterity together		**Gambling** The game is won mostly by luck, but although	
			without a luck factor	with a luck factor	with brain dexterity	pure gambling
Football	Mikado	Sudoku	Chess	Monopoly	Black Jack	Dice games
Dancing	Petanque	Tangram	Checkers	Rummikub	Poker	Lotto
Hora	Skambalove	Fifteen-Game	Mill	Don't get angry	Seven and Half	
Seven Steps	Skipping Rope	Magic Square	NIM-Game	Backgammon		
	Hopscotch	Combination 9	Damath	Four Seasons		
	Crow's feet		Tic-tac-toe	Math Scrabble		
			Connect Four	Domino		
			Sea Battle			

Table of the different "Game Ideas" – most of the games are described in the Math-GAMES Compendium









AVAILABLE MATERIAL IN THE MATH-GAMES PROJECT

The four parts of the output of the project Math-GAMES:

- "**Math-GAMES Compendium of Famous Traditional Games**", which are books in nine languages **(BG, DE, EN, ES (Cast., Val.), FR, GR, IT, RO)**. After that the partners of the project proved how traditional games could be implemented in their learning program for a better understanding Mathematics, especially for lower skilled people, for young people and for immigrants, if there are needs.
- The results are the "**Math-GAMES Numeracy Learning Guidebook (Mathematical Literacy)**" in nine languages **(BG, DE, EN, ES (Cast., Val.), FR, GR, IT, RO)**.
- In the third part of the project the partners proved by doing and testing during real courses and seminars that playing games between people with different skills assist in social integration and thus traditional games will be saved by transferring them to other people and they will not be lost. The result is the "**Math-GAMES Teacher Training Course and Seminar**", which is held for the next years in different countries. The e-presentations, the seminar and the teacher-training course are published in English.
- Finally, this "**Math-GAMES Testing and Evaluation Report**" was published. It is a report about the project, the evaluation of the meetings, the evaluation of the dissemination conferences and the evaluation about the pilot teacher training course. The Math-GAMES Project Report is published in English.

Information:
Website: www.math-games.eu

Link to the special Math-GAMES YouTube Channel:
https://www.youtube.com/channel/UCvuYRVDPN WRNO5SwQiRre4g

Math-GAMES Evaluation Report

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EN
English