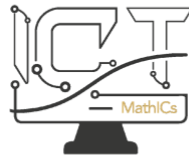


NEWSLETTER

RELEASE DATE:
30.10.2024

CONTACT INFORMATION:
Dissemination Committee



MathICs e-NEWSLETTER #7 (April-September 2024)

CONTENT:

1. News about MathICs project.....	2
2. Management: Consortium Meeting.....	2
3. Follow up of MathICs caravan.....	4
4. Dissemination events.....	7
5. Upcoming events	12
6. Annex.....	13

Follow us :



www2.ual.es/MathICs/
mathics@ual.es

Co-funded by the
Erasmus+ Programme
of the European Union



1. News from MathICs project

In recent months, the MathICs project has made significant strides in advancing the integration of ICT in mathematics education across Morocco and beyond.

The consortium meeting held from April 22-24, 2024, in Lisbon, brought together key stakeholders to assess the progress of the project. Participants engaged in valuable exchanges, sharing best practices and practical skills, including video editing techniques. Feedback from the event was overwhelmingly positive, with 94% of attendees reporting a successful experience, highlighting the value of these collaborative efforts.

The MathICs Caravan, a central initiative of the project, continues its successful journey through various Moroccan cities, promoting the use of ICT in math education. The Caravan has reached over 574 participants, including students, professors, and education professionals, in 13 events held between 2023 and 2024. Survey results show a high level of satisfaction, with over 75% of attendees rating the events as very useful for their educational development. The Caravan has been praised for its practical workshops and focus on modern teaching tools, reflecting the project's core mission of modernizing math education through technology.

Looking ahead, the MathICs project will host several dissemination events in November, aiming to further showcase the impact of the initiative. These events will highlight the successes of the MathICs Caravan and the results of various training programs. With upcoming sessions in Beni Mellal, Kenitra, and Rabat, educators, students, and stakeholders will gather to explore how ICT continues to transform mathematics education in Morocco, culminating in a final conference scheduled for January 2025 in Rabat.

2. Management: Consortium Meeting

22-24 April: WP5, QC and DC meeting in IST, Lisbon (Portugal)

Técnico Lisboa proudly hosted a consortium meeting for the MaThICs project, focusing on its innovative approaches to mathematics education, the key challenges faced, and the current status of the project. Participants engaged in an enriching exchange of best practices, gained valuable video editing tips from European and Moroccan Trainers.

In conjunction with this meeting, the evaluation event organized by the Instituto Superior Técnico (IST/ULisboa) took place from April 22nd to April 24th, 2024, in Lisbon. Eighteen staff members, including professors, PhD students, and technical staff, participated in this comprehensive evaluation of the project's progress and outcomes.

Follow us :



Event Agenda



Email MathICs : mathics@ual.es
www2.ual.es/MathICs/

MathICs: 22 - 24 April 2024			
Hours (PT)	Monday, 22/04	Tuesday, 23/04	Wednesday, 24/04
8:00 - 8:30			
8:30 - 9:00			
9:00 - 9:30			
9:30 - 10:00	Civil Building (room 02.3) Natacha Moniz and Luis Alcalá- Welcome and exchange of feelings/expectations	Civil Building (room 02.3) AMSantos- Best practices of MOOC videos	Civil Building (room 02.3) Driss Bennis- Caravan and Club MathICs overview
10:00 - 10:30			
10:30 - 11:00			
11:00 - 11:30	Coffe Break- Civil Building Hall 2	Coffe Break- Civil Building Hall 2	Coffe Break- Civil Building Hall 2
11:30 - 12:00	Civil Building (room 02.3) Luis Alcalá- Best practices ICT	Civil Building (room 02.3) AMSantos- Best practices of MOOC videos	Civil Building (room 02.3) AMSantos- next steps
12:00 - 12:30			
12:30 - 13:00	Lunch- Civil Buiding (Pingo Doce restaurant)	Lunch- Civil Buiding (Pingo Doce restaurant)	Lunch- Civil Buiding (Pingo Doce restaurant)
13:00 - 13:30			
13:30 - 14:00			
14:00 - 14:30			
14:30 - 15:00	Civil Building (room 02.3) Driss Bennis- WP5 report	Civil Building (room 02.3) AMSantos- Best practices of pedagogical classes	Civil Building (room 02.3) Luis Alcalá e AMSantos- wrapping up and Dissemination Events
15:00 - 15:30			
15:30 - 16:00	Short break	Short break	
16:00 - 16:30	Civil Building AMSantos- Studio ("Being in the studio Natacha Moniz- Quality meeting)	Civil Building (room 02.3) Natacha Moniz- Quality meeting	
16:30 - 17:00			
17:00 - 17:30			
17:30 - 18:00			

Fig.1- Evaluation Programme

The evaluation programme was executed as planned, and feedback was collected through a questionnaire at the end of the event. Results indicated high levels of satisfaction among participants, with 83.3% agreeing that the event was well-organized and 88.9% feeling that the venue and working conditions were adequate.

The survey also highlighted strong approval for the event's content and alignment with project objectives, with 77.8% of participants praising the substance of the presentations. Overall, 94% of attendees left the meeting with a positive experience, demonstrating the success of both the meeting and the evaluation event.

Representatives from all Partners were present alongside the project coordinators: Professor Driss Bennis from Mohammed V University in Rabat and Professor Luis Oyonarte Alcalá from the University of Almeria.

Follow us :



3. Follow up of MathICs Caravan

The MathICs Universities Caravan, a core initiative within the MathICs Erasmus+ project, was designed to disseminate innovative approaches to teaching mathematics through ICT (Information and Communication Technologies). Spanning across Morocco in both 2023 and 2024, these Caravan events successfully reached 574 participants from various educational institutions and cities, making a significant impact on the modernisation of math education in the region.

Table 1- Event Summary by Location and Date:

Year	Institution	Location	Participants	Date(s)
2023	Lycée Mohamed El Bouaanani	Tamesna	31	26/04/2023
2023	Groupe Scolaire ASSIDIQ	Kenitra	20	28/04/2023
2023	Centre Régional des Métiers de l'Education et de la Formation (CRMEF) of region Marrakech-Safi, Safi	Safi	79	09/05/2023
2023	CRMEF of region Marrakech-Safi; Annexe Almachouar	Marrakech	59	10/05/2023
2023	Faculty of Sciences of the University Sidi Mohamed Ben Abdellah	Fès	44	01/06/2023
2023	Higher School of Education and Training of the University Mohammed the First	Oujda	45	12/06/2023
2023	Engineering Private school - HESTIM (in AMESUP)	Casablanca	44	06/07/2023
2023	Engineering Private school - ILCS (in AMESUP)	Rabat	24	11/07/2023
2024	Ecole Normale Supérieure (ENS)	Meknès	74	08/03/2024
2024	Faculty of Sciences of Chouaib Doukkali University	El Jadida	33	07/05/2024
2024	ENSA of Khouribga	Khouribga	22	08/05/2024
2024	Faculté Polydisciplinaire of Larache	Larache	39	14/05/2024
2024	CRMEF of region Tanger-Tétouan-Al-Hoceima	Tanger	149	17-18/05/2024
Total Participation:			574	Total Events: 13

- Conclusion: Survey Results of 2023 & 2024 Events

The MathICs Caravan surveys conducted in both 2023 and 2024 revealed consistent positive outcomes, highlighting the effectiveness and impact of these events:

Follow us :



Overall Satisfaction: Over 75% of participants in 2023 and 70.7% in 2024 were "very satisfied," with the remaining respondents expressing satisfaction. No dissatisfaction was reported in either year.

Usefulness of the Event: Nearly all participants found the events highly beneficial for their studies or professional work. In 2024, 99.4% of respondents reported finding the event useful.

Participant Demographics: Both years saw a diverse group of attendees, with 63% being students and 13% professors in 2024, emphasizing the broad appeal of the workshops.

Gender Balance: The gender distribution was balanced, with 54% female participants in 2024, reflecting the project's commitment to gender equity.

Communication Channels: Professors played a key role in spreading the word, with 63.5% of participants in 2024 learning about the event through academic networks.

- **Feedback & Suggestions**

Participants overwhelmingly praised the organization and content of the Caravan events. However, some suggestions for improvement included:

- ✓ More time for workshops
- ✓ Expanding events to more locations
- ✓ Incorporating online sessions

The MathICs High School Caravan is an outreach initiative aimed at sparking interest in STEM (Science, Technology, Engineering, and Mathematics) among high school and middle school students across Morocco. Designed to introduce young people to the excitement and potential of mathematics and computer science, the caravan travels to various cities, organizing interactive workshops, hands-on activities, and inspiring lectures. Through these activities, the MathICs Caravan creates a fun and engaging environment for students to explore mathematical concepts and discover potential career paths in STEM fields.

Each stop of the MathICs Caravan is structured to maximize student engagement and learning. The program typically includes:

- **Workshops:** Two core workshops are held at each location
- **GeoGebra Workshop:** Students are introduced to GeoGebra, which allows them to visualize and interact with mathematical concepts, making abstract ideas more accessible and enjoyable.
- **Problem-Solving Workshop:** Focused on mathematical problem-solving techniques, this workshop encourages logical thinking and collaborative problem-solving, key skills for any STEM career.
- **Competitions:** Group-based competitions, such as The Magic of Numbers, engage students in fun, challenging activities that test their understanding and encourage teamwork. These competitions add a dynamic and motivating element to the caravan, as students work together to solve problems and earn recognition for their efforts.

Follow us :





Fig. 2- MathICs caravan @ Lycée Ibn Al-Haytham in Kenitra

Summary of Key Steps in the 2024 MathICs Caravan Meknes (March 4, 2024):

Held at Moulay Ismail High School, this event attracted 96 participants, 56% of whom were female.

Participants ranged from younger high school students to those nearing their baccalaureate exams, allowing for diverse engagement.

The satisfaction rate was high, with most students expressing that the caravan exceeded their expectations and that they enjoyed the workshop formats and competition.

Kenitra (May 14, 2024):

The Kenitra event, held at Ibn Al-Haytham High School, attracted 70 students, with a majority of female attendees (66%).

Despite the event taking place toward the end of the school year, it saw enthusiastic participation.

The feedback indicated that over 85% of the students were pleased with the activities, noting that the hands-on workshops and competitions were particularly engaging.

Azrou (May 25, 2024):

Hosted at Tarek ibn Ziad High School, this event brought in the largest group, with over 118 students participating.

The satisfaction survey showed that over 85% of attendees enjoyed the experience, even as many were preparing for exams.

Students appreciated the opportunity to explore math concepts outside the traditional classroom setting, making the learning experience both memorable and effective.

Follow us :



Lectures and Q&A Sessions: The MathICs Caravan includes lectures by academics and professionals who discuss the practical applications of mathematics, inspiring students to see the broader implications of their studies. These sessions also feature Q&A segments, allowing students to ask questions about STEM fields and career possibilities. The MathICs Caravan has made a significant impact on students and educators alike by:

- **Boosting STEM Interest:** Students left with a greater interest in STEM fields and an understanding of how mathematical skills could benefit their futures.
- **Providing Resources and Guidance:** The caravan equipped students with tools and resources, such as GeoGebra, that they could continue to explore independently.
- **Encouraging Inclusivity in STEM:** The caravan reached a balanced demographic of male and female students, promoting diversity in STEM engagement and empowering all students to pursue math-related fields confidently.

The MathICs Caravan proved to be an incredibly successful initiative, reaching hundreds of students and educators across Morocco. The high levels of satisfaction and practical usefulness reported by participants highlight the Caravan's crucial role in promoting the use of ICT in mathematics education. With this foundation, the MathICs Consortium looks forward to expanding its reach, refining the event structure, and continuing its mission to modernize math education in the region.

4. Dissemination events

We're thrilled to share updates on the MathICs caravan, dedicated to sharing experiences from the MathICs project through workshops focusing on best practices in using ICT in mathematics education. Following a series of successful stops in various Moroccan cities, we're pleased to provide information on the events of the MathICs Caravan at the higher education institutions:

◆ Faculty of Sciences, El Jadida: May 7th (El Jadida)

Link to LinkedIn post:

https://www.linkedin.com/posts/driss-bennis-0018b015_tic-ia-enseignementdesmathaezmatiques-ugcPost-7194223939198304256-krwZ?utm_source=share&utm_medium=member_desktop

We had the pleasure of organizing our exciting workshops at the Faculty of Sciences, Chouaib Doukkali University in El Jadida, on May 7, 2024. The event began with inspiring words from the Vice-President of the University, Professor Mohamed Sahabi, the Dean of the Faculty of Sciences, Professor Hafid Saber, and Professor Mohamed AMOUCH, each highlighting the importance of innovation in mathematics education.

Following a brief break, we moved into the workshop sessions. The participants, especially the professors and doctoral students from the Faculty of Sciences, ESEF, and EST of El Jadida, were highly engaged. The discussions were extremely fruitful, focusing on various models and best practices for integrating ICT into mathematics education, paving the way for promising advancements in the field.

Follow us :



Special recognition goes to Professor Houda Amzil, a former participant in MathICs training during her PhD studies and now a professor at the Faculty of Sciences in El Jadida. Along with Professor Mohamed AMOUCH, she made exceptional efforts in organizing and hosting the Caravan, significantly contributing to the success of this event.

◆ ENSA de Khouribga: May 8th (Khouribga)

Link to LinkedIn post:

https://www.linkedin.com/posts/driss-bennis-0018b015_mathics-tic-ia-ugcPost-7194394322971054081-p4QG?utm_source=share&utm_medium=member_desktop

A Major Step Forward for the MathICs Caravan with a Captivating Session at the National School of Applied Sciences (ENSA) in Khouribga on May 8, 2024 !

This MathICs Caravan edition was marked by an exceptional collaboration between participants from diverse backgrounds in engineering and applied mathematics, enriched by in-depth discussions on the use of ICT and AI in modern educational practices. We were pleased to see future teachers from ENS, doctoral students and engineering students from ENSA, as well as PhD candidates from the Faculty of Sciences and Technology (FST) of Beni Mellal participate in this event.

A particularly inspiring highlight of the day was the intervention of our guest of honor, Mr. Mohammed Ajoulou Rahmouni, General Director of "citiZchool - Let's Be the Change," a French association dedicated to helping young students explore career paths by connecting them with professionals from various sectors. His background as a former student at the Faculty of Sciences in Rabat, coupled with his achievements in social and educational innovation, inspired everyone present, offering valuable insights on professional integration and education.

Some of the day's key moments included:

- Highlighting the educational challenges associated with integrating AI.
- Warnings on the importance of aligning with international guidelines for the integration of ICT and AI in education.
- Emphasizing the importance of digital skills for optimal integration into the educational world.
- The inspiring address by our guest of honor, Mr. Mohammed Ajoulou Rahmouni, who discussed motivational models such as the competence-autonomy model and the rebellion-escape model, providing valuable insights for understanding and improving student engagement in their learning.

◆ Polydisciplinary Faculty of Larache: May 14th (Larache)

Link to LinkedIn post:

https://www.linkedin.com/posts/driss-bennis-0018b015_mathics-innovationpaezdagogique-tic-ugcPost-7196590282023337985-E0HJ?utm_source=share&utm_medium=member_desktop

We are delighted to announce that the MathICs Caravan successfully made a stop in Larache on May 14, 2024, under excellent conditions, fostering a highly conducive atmosphere for exchange. The participants expressed great interest in the activities offered and a deep appreciation for the efforts made, reaffirming the importance of our mission to integrate ICT and AI into mathematics education. Their enthusiasm and commitment continue to inspire and motivate our entire community.

Follow us :



We would also like to highlight the exceptional participation of Mr. Brahim EL ALAOUI, President of the MathICs Club FSR-Rabat. His ongoing involvement plays a crucial role in the success of our initiatives for the benefit of our students.

Professors Driss Bennis and Brahim Fahid were deeply honored to receive a certificate of appreciation and gratitude from the Dean of the Faculty, recognizing their efforts and the richness of the activities they helped organize. This not only marks the success of the event but also reflects our team's commitment to enhancing mathematics education through modern technologies. This certificate stands as a testament to the hard work of the entire MathICs Caravan team and the academic community that supports our initiatives. A big thank you to everyone who participated and contributed to making this event a resounding success!

We would also like to express our gratitude to the local organizing committee, coordinated by our dear colleague Chakir Tajani, as well as to the administration, particularly the Dean and Vice-Dean, whose efforts and dedication ensured that the MathICs Caravan workshops were held under exemplary conditions.

◆ CRMEF Tanger-Tétouan-Al-Hoceima: May 17th-18th (Tanger)

Link to LinkedIn post:

https://www.linkedin.com/posts/driss-bennis-0018b015_mathics-innovationpaezdagogique-tic-ugcPost-7197504298467962881-a6Y0?utm_source=share&utm_medium=member_desktop

At this stop of the caravan, we had the pleasure of welcoming more than 140 participants. To maximize interaction and engagement during the sessions, we divided them into two groups, assigning each group a specific day.

The program began with memorable opening speeches that emphasized the critical importance of digital awareness in mathematics education.

We kicked off the caravan workshops with the first group, consisting of motivated students from the center and their professors, who demonstrated remarkable enthusiasm and active participation. The discussions and interactions highlighted how the MathICs Caravan continues to play a vital role in training future teachers, equipping them to effectively integrate ICT and AI into their pedagogical practices.

Day Two:

Link to LinkedIn post:

https://www.linkedin.com/posts/driss-bennis-0018b015_mathics-innovationpaezdagogique-tic-ugcPost-7197989532292567040-782w?utm_source=share&utm_medium=member_desktop

An excellent conclusion to the MathICs Caravan – Strengthening Mathematics Education at the CRMEF in Tangier on May 18, 2024!

The second day at CRMEF Tangier was marked by a series of enriching activities that greatly benefited the participants. An interactive discussion on digital skills sparked deep reflection and exchanges of ideas.

Follow us :



Participants also excelled during quizzes using a mathematical equation editor, showcasing the effectiveness of digital tools in knowledge assessment.

Another highlight was the interactive workshop on Mayer's principles for optimal multimedia learning. The analysis of a video developed by members of the MathICs team vividly demonstrated how these principles can be applied to enhance teaching and learning.

We would like to express our deep gratitude to the director of CRMEF for his dedication and inspiring closing remarks, emphasizing the critical importance of such events for the development of mathematics education. A big thank you also to the local organizing committee, coordinated by Marhine Hassan, for their exemplary commitment and continuous efforts.

◆ Our MathICs Moroccan Professors published a research paper

Link to LinkedIn post:

https://www.linkedin.com/posts/driss-bennis-0018b015_aineducation-digitaltransformation-ict-activity-7211841545736482816-7c3Q?utm_source=share&utm_medium=member_desktop

We are delighted to announce that the article titled "*Promoting the Integration of AI-Based Tools in Education through ICT Foundations*", co-authored by Driss Bennis, Khalid Berrada, and Fahid Brahim, has been accepted as a chapter in the upcoming Springer book "*Radical Solutions for Artificial Intelligence and Digital Transformation in Education*."

This article aims to offer a holistic view of effective methods and practices to enhance AI's role in education, building upon the successes of integrating ICT.

In this paper, the MathICs training experience is highlighted as an example of effective training for integrating ICT in education.

In the Acknowledgement part of the paper, the authors expressed their gratitude to the MathICs trainers, Prof. Fouad Bennis and Prof. Frédéric Dorel from École Centrale Nantes, for their invaluable advice during the preparation of the paper. This work was partially developed during the training sessions on pedagogical approaches for using ICT, conducted within the framework of the MathICs project.

◆ Updates on MathICs Club-FSR activities :

Several workshops have been organized for the benefit of the students at the Faculty of Sciences. Among these were the workshops held on April 7 and April 27, where participants explored new dimensions of learning mathematics through brainstorming techniques using a platform dedicated to collaborative pedagogy.

For more details see LinkedIn posts :

Link 1

https://www.linkedin.com/posts/club-mathics-fsr-rabat_mathicsfsr-tic-mathaezmatiques-activity-7178870102371500032-K8iG?utm_source=share&utm_medium=member_desktop

Follow us :



Link 2 :

https://www.linkedin.com/posts/club-mathics-fsr-rabat_mathicsfsr-mathaezmatiques-concentration-activity-7186313062176432128-Kmpk?utm_source=share&utm_medium=member_desktop

Finally, in preparation for the exam period, the MathICs Club, under the leadership of Professor Driss Bennis, organized a workshop titled "How to Understand and Solve Problems? - Polya's Approach" on Saturday, June 1, 2024.

For more details see LinkedIn post :

https://www.linkedin.com/posts/club-mathics-fsr-rabat_mathaezmatiques-aezducation-atelier-activity-7206262460482252800-1826?utm_source=share&utm_medium=member_desktop

◆ Participation in the event the Second International Spring School for Doctoral Students
<https://lnkd.in/eaAgSaB2>

Link to LinkedIn post:

https://www.linkedin.com/posts/driss-bennis-0018b015_aicompetencies-ictineducation-digitaltransformation-ugcPost-7200238119168659457-QDim?utm_source=share&utm_medium=member_desktop

Professor Driss Bennis, the Moroccan Coordinator of the MathICs Project, was invited to lead a successful workshop at the Second International Spring School for Doctoral Students.

He conducted a workshop titled "Exploring Essential AI Competencies for Social Science Researchers: A Hands-on Introduction to Basic AI Tools." The participants, primarily PhD students engaged in cutting-edge research on new trends in education, benefited greatly from the session.

The focus of the workshop was on the effective use of ICT, highlighting best practices and exploring both numerical and AI competencies crucial for modern researchers.

Professor Bennis was impressed by the depth of discussion and the insightful contributions from all attendees, which even introduced new perspectives. The positive feedback and recognition received are a testament to the workshop's success.

5. Upcoming Events

This November, the MathICs project will host a series of dissemination events to highlight the project's impact on integrating ICT in mathematics education across Morocco. These events will bring together educators, students, and stakeholders to share the latest project outcomes, insights, and future goals. Below is the proposed agenda for the day:

Follow us :



Program Overview:

9:00 - 9:30

Registration

Attendees are invited to register and network before the sessions begin.

9:30 - 10:00

Welcome Speeches

Delivered by institutional leaders such as the Dean, President, or Head of Department, this session will open the event with remarks on the significance of the MathICs initiative and its role in modernizing mathematics education.

10:00 - 10:15

Presentation of the MathICs Project

Speaker: Prof. Luis Oyonarte

Prof. Oyonarte will provide an overview of the project, its goals, and progress made to date in enhancing math education through ICT in Morocco.

10:15 - 10:30

MathICs: Training Experience and Results

Speaker: Prof. Driss Bennis

Prof. Bennis will present the outcomes of the training sessions conducted as part of the MathICs initiative, discussing the skills developed and the results achieved in various educational contexts.

Workshop: MathICs Experience – Enhancing Numerical Competencies and Integrating ICT in Morocco's Educational System

Lead by: Local MathICs Member

This interactive session will feature key insights from MathICs activities, particularly focusing on how ICT tools and numerical competencies are being incorporated into the Moroccan educational system.

Interventions:

Numerical Competencies – Prof. Driss Bennis

MathICs Caravan in Higher Institutions – Prof. Brahim Fahid/Prof. Driss Bennis

MathICs Caravan in High Schools – Prof. Ibtissam Medahri

❖ Dissemination Events:

- Dissemination event at Beni Mellal: 1 November 2024.
- Dissemination event at Club MathICs: 2 November 2024.
- Dissemination event at Rabat: 4 November 2024.
- Dissemination event at Kenitra: 5 November 2024.

The workshop will conclude with a Q&A Session where attendees can ask questions and engage with the speakers.

These dissemination events will provide valuable opportunities to learn from the MathICs project's achievements and explore how ICT can continue to transform the teaching of mathematics in Morocco. Attendees will gain insights into innovative educational practices, as well as the results of the MathICs training programs and Caravan outreach efforts.

❖ Final Event:

- Final Conference Rabat : 9-10 January 2025.

Follow us :



Annex:

- ✓ [Mathics Caravan video](#)
- ✓ [Mathics meeting@ Lisbon video](#)
- ✓ [Mathics Club video](#)

Follow us :



[www2.ual.es/MathICs/
mathics@ual.es](http://www2.ual.es/MathICs/mathics@ual.es)

Co-funded by the
Erasmus+ Programme
of the European Union

