



Dissemination, Communication and Exploitation Plan

Deliverable 4.1

Project Number: 598587

Project Title: Innovative Teaching Education in Mathematics

Project Acronym: iTEM

Project Coordinator: Hellenic Mediterranean University (HMU)-(P1)

Partners:

| | | |
|-----|--|-----------------|
| P2 | Aalborg Universitet | Denmark |
| P3 | Czech Technical University | Czech Republic |
| P4 | Ss. Cyril & Methodius University | North Macedonia |
| P5 | UMIT | Austria |
| P6 | Holon Institute of Technology | Israel |
| P7 | Hadassah Academic College | Israel |
| P8 | Weizmann Institute of Science | Israel |
| P9 | National University of Uzbekistan | Uzbekistan |
| P10 | Technical University of Uzbekistan | Uzbekistan |
| P11 | University of Mitrovica 'Isa Boletini' | Kosovo |
| P12 | Universum College | Kosovo |
| P13 | Karlstads Universitet | Sweden |
| P14 | Universidad de La Laguna | Spain |
| P15 | University of Pristina | Kosovo |
| P16 | Karshi Engineering & Economics Institute | Uzbekistan |

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1. Executive Summary

The Dissemination, Communication and Exploitation plan explains how the project will (a) disseminate and communicate its progress, its outcomes, its planned actions; (b) how the consortium will ensure the visibility of the project and disseminate of its results though its lifetime and beyond; and finally (c) will explain how the results will be exploited & be sustained among its consortium members and beyond its 'borders'.

Dissemination: *This is defined as a planned process of providing the information on the quality, relevance and impact of the results of programs and initiatives to stakeholders. It occurs as and when the results will become available. This activity happens within a project's consortium, beyond it and in program level*

Exploitation: *Consists of mainstreaming and multiplication. The former regards the transfer of the successful results of the project to appropriate decision makers in local, regional, national and international systems. Multiplication refers to the plan convincing individual stakeholders to adopt and apply the project's results and initiatives. Sustainability is linked with the exploitation since refers to the exploitation of the project's outcomes beyond its funding period*

The Dissemination, Communication and Exploitation Plan identifies key stakeholder groups and establishes the most relevant communication channels and messages for each target audience. It defines the branding and promotion tools, and the channels to be employed, describing the methodology, the timeline to be followed for carrying out and tracking each activity. The Dissemination, Communication and Exploitation Plan assigns roles and responsibilities to all the partners. The aim is to achieve all the envisioned targets, guiding the partners in the implementation of this Workpackage through a coherent, effective in time and use of funds approach. The constant monitoring is necessary requirement to be followed. The regular access, renewal and adaption to the new requirements and opportunities arise will be executed.

2. Part I: Dissemination and Communication Plan

1. Strategy

i. Project Context and Communication Objectives

The motivation to implement iTEM project is triggered by the no or low level of motivation to learn and realisation of the impact of Mathematics mainly by the students. The role and power of Mathematics to solve real life problems is not obvious at all to the students and to the Math Teachers as well. High failure in the 1st year of studies in Mathematics is mainly attributed to the lack of students' motivation to understand and realise the impact of Mathematics during their studies & forthcoming professional careers time. In the majority of the cases, this leads to long period of over extended undergraduate studies and sometimes in quitting them at all. iTEM project targets to fuel students' desire & motivation to learn Mathematics and aware them of the their power to solve real life problems and understand their link with their discipline. This will be accomplished using / adopting (a) modern teaching methods e.g. Problem based Learning; (b) bring to the lecture sessions examples from sciences that are solved and explained using fundamental mathematic tools; (c) exploiting mobile and ICT tools to visualise key mathematic terms; (d) providing support during the teaching semester to the 'weak' students; and (d) by linking mathematics with real life problems led by the market world and Industry and teach students how to apply their knowledge. The main platform to apply project's strategies will be the two core 1st year Mathematics courses: Calculus I and Linear Algebra I. The main outcome of the project are (a) examples from other sciences and real life problems that can be addressed using principles from Linear Algebra I and Calculus I; (b) visualisations of key definitions of the aforementioned modules to assist their understanding and impact; (c) modified Moodle platforms that allow teachers to monitor students engagement & commitment with the courses; and (d) training events for teachers and students.

The need of the iTEM project was the main reason of its funding despite the very low success rate of the multi-regional Capacity Building Projects in 2018 (less than 8%). It is an ethical obligation to succeed and the dissemination & exploitation of the project's outcomes is a very crucial action. Its primary stakeholders are STEM students, teachers of Mathematics, Universities' decision makers (Departments' directors and University Rectors) but also other STEM courses and people from the Industry.

iTEM project's consortium takes very seriously its dissemination across its lifespan. iTEM dissemination team will communicate and aware about its progress and extracted outcomes all the primary and secondary project's stakeholders using all the available tools. The plan will be updated during the project in a yearly base to adapt the project evolution.

The main objectives of the dissemination & communication plan are:

- Define a communication strategy adapted to the different targeted groups
 - To plan communication activities
 - To guide partners throughout communication and dissemination activities
- Prepare a project branding package and set of materials for the dissemination of the project and its outcomes
 - Develop project's logo, website, social media pages, posters, leaflets and banners
 - To raise the awareness of the project's outcomes and solutions
 - To setup a regular flow of information & communication with the project's stakeholders
 - To introduce achievements and results in scientific and specialised publications and events (e.g. Erasmus Weeks, Educational and Scientific Conferences) in regional, national and international level
- Track and monitor the Communication an Dissemination Plan activities. Measure their impact using online and offline tools
- Enhance the reputation and visibility of the Consortium Partners at local, national and international level

ii. Stakeholders targeted

The targeted stakeholders of the iTEM are very dictated by the need analysis performed before and immediately after the kick off meeting of the project. The targeted stakeholders can be segmented into two categories: Primary target group and Secondary target group.

- Primary target group, which aims at potential users: STEM Students, Math Teachers, University's stakeholders

- Secondary target group, which can be reported as ‘communication hub’: Other STEM Teachers & Students (e.g. Physics), STEM Life Long Learners, Erasmus Offices & International Relationship Offices, Other Erasmus Plus Project Coordinators & Networks, The iTEM Associated Partners Network, High School Mathematics Teachers

Table 1 provides a short description of two aforementioned stakeholder groups and the objectives establish a communication with them.

| Primary Target Groups | | |
|---|---|---|
| Target Group Type | Objectives | Description |
| 1 st Year Students following Linear Algebra I & Calculus I | <ul style="list-style-type: none"> • Aware them for the iTEM philosophy and objectives • Get a feedback from them regarding their view for Mathematics in relationship with their studies and future career • Engage them during the application of iTEM tools and teaching strategies – Get their feedback • Teach them how to apply their knowledge to solve real life problems • Request their feedback (satisfaction, comments and suggestions) after the application of iTEM provided solutions and tools | <p>The Consortium Students following the targeted modules within the Test Institutions</p> <p>1st Year Students within and beyond the consortium</p> |
| Academics Teaching the Modules Linear Algebra I & Calculus I | <ul style="list-style-type: none"> • Aware them for the iTEM philosophy and objectives • Get their feedback regarding their view of Mathematics and their power to solve real life problems • Engage them to apply the provided iTEM tools and teaching strategies: Provide them examples from the real life & other sciences, provide them visualisations of the main concepts, provide them training | <p>The Consortium Teachers teaching the targeted modules within the Test Institutions</p> <p>MATH Teachers within and beyond the consortium</p> |

| | | |
|---|--|--|
| | <p>how to apply PBL and POPBL teaching techniques</p> <ul style="list-style-type: none"> • Request their feedback (satisfaction, comments and suggestions) after the application of the iTEM provided solutions and tools | |
| <p>Departments & University Decision Makers</p> | <ul style="list-style-type: none"> • Aware them the problems and challenges regarding Math success rates • Aware them for the iTEM philosophy and objectives • Inform them for our results after the application of the iTEM tools and philosophy • Convince them to apply the same approaches to other STEM courses (e.g. Evidence Based STEM Teaching) | <p>Within the test Institutions (1st stage) Beyond the test Institutions (2nd stage)</p> |

| Secondary Target Groups – Communication Hub | | |
|--|---|---|
| Target Group Type | Objectives | Description |
| <p>1st Year Students following other STEM Courses e.g. Physics I and II</p> | <ul style="list-style-type: none"> • Aware them for the iTEM philosophy and objectives • Get a feedback from them regarding their view for Physics in relationship with their studies and future career • Engage them during the application of iTEM tools and teaching strategies – Get their feedback • Teach them how to apply their knowledge to solve real life problems • Request their feedback (satisfaction, comments and suggestions) after the application of iTEM provided solutions and tools | <p>The Consortium Students following the targeted modules within the Test Institutions</p> <p>1st Year Students within and beyond the consortium</p> |
| <p>Academics Teaching other STEM Courses e.g. Physics I and II</p> | <ul style="list-style-type: none"> • Aware them for the iTEM philosophy and objectives | <p>The Consortium Teachers teaching the targeted</p> |

| | | |
|---|--|--|
| | <ul style="list-style-type: none"> • Get their feedback regarding their view of Introduction Physics Courses and their power to solve real life problems • Engage them to apply the provided iTEM tools and teaching strategies: Provide them examples from the real life & other sciences, provide them visualisations of the main concepts, provide them training how to apply PBL and POPBL teaching techniques • Request their feedback (satisfaction, comments and suggestions) after the application of the iTEM provided solutions and tools | <p>modules within the Test Institutions</p> <p>Physics Teachers within and beyond the consortium</p> |
| <p>International Relationship Offices</p> | <ul style="list-style-type: none"> • Aware them the problems and challenges regarding Math & STEM success rates • Aware them for the iTEM philosophy and objectives • Inform them for our results after the application of the iTEM tools and philosophy • Disseminate through their network iTEM outcomes and successful results • Communicate with them to get informed for the organization of Dissemination Events – Opportunities to disseminate iTEM Project beyond consortium | <p>International Offices of the Consortium Partners</p> <p>Consortium Partners Network</p> |
| <p>Erasmus Plus International Offices</p> | <ul style="list-style-type: none"> • Aware them the problems and challenges regarding Math & STEM success rates • Aware them for the iTEM philosophy and objectives • Inform them for our results after the application of the iTEM tools and philosophy • Disseminate through their network iTEM outcomes and successful results | <p>Erasmus Plus International Offices within the consortium & beyond the consortium</p> |

| | | |
|----------------------------------|---|---|
| | <ul style="list-style-type: none"> • Communicate with them to get informed for the organization of Dissemination Events – Opportunities to disseminate iTEM Project beyond consortium | |
| iTEM Associated Partners Network | <ul style="list-style-type: none"> • Aware them the problems and challenges regarding Math & STEM success rates • Aware them for the iTEM philosophy and objectives • Inform them for our results after the application of the iTEM tools and philosophy • Disseminate through their network iTEM outcomes and successful results • Communicate with them to get informed for the organization of Dissemination Events – Opportunities to disseminate iTEM Project beyond consortium | iTEM Associated Partners Network already described within the project's proposal |
| Industrial Partners Network | <ul style="list-style-type: none"> • Aware them the problems and challenges regarding Math & STEM success rates • Aware them for the iTEM philosophy and objectives • Communicate with them to provide us real life problems that can be solved through the application of fundamental math knowledge | Exploit the Karlstad University (P13) Network and Experience organizing events like Maths Meet the Industry |

Table 1: Primary and Secondary iTEM Stakeholders

iii. **Visual and written identity**

The branding of the iTEM project is of a high importance regarding the identification of its outcomes and its impact. Towards the implementation of this objective the following actions should be planned and executed:

1. The design of eye catching logo that contains the context of the project
2. The launching of a website in English and the formulation of satellite webpages in the partners language that disseminate the context of the project in a local level

3. Templates to be used during presentations and reporting. All the partners logos and iTEM website and social media pages will appear on these templates
4. The design and production of (a) posters; (b) banners; (c) leaflets; and (d) electronic newsletter

By using these templated and logos, the consortium will ensure that the branding is consistent throughout the iTEM lifetime.

iv. Communication channels and tools

Different communication tools will be employed based on the targeted group. These channels and tools can be online and offline. They will be focused on stimulating the various stakeholders interest and engagement with the project. Table 2 contains a summary of the planned tools to launch during the project.

| Communication Channel | Type of Communication Channel | Objective | Targeted Stakeholder |
|---|-------------------------------|--|---|
| iTEM Website | Online | Showcasing all the information available about the project developments Link to various partners webpages Repository area of all the documents related to the project's management | All the primary & secondary stakeholders |
| iTEM Webpages | Online | Webpages in local languages that disseminate the project in local & national targeted communities | Stakeholders in local, National and International Level |
| Webpages in Erasmus International Offices | Online | Webpages where the project is disseminated through the local | Especially important for the case of iTEM project the latter to |

| | | | |
|------------------------------|------------------|--|---|
| | | Erasmus International Offices | appears through the Kosovo, Uzbekistan and Israeli NAs / Stakeholders in the respective countries |
| Social Media | Online | A facebook, Youtube Channel. LinkedIn and a Instagram sites to be created Registering in respective Facebook Group Teams e.g. Erasmus Partner Search Network | Students and Teachers Stakeholders |
| Leaflet, Poster and a Banner | Offline & Online | An Initial version of all of them have been generated and have been uploaded onto the one drive shared file directory | Primary and Secondary Stakeholders |
| Events | Offline | All the partners should participate in at least two different events for disseminating iTEM Events could be: Erasmus Weeks, Educational Conferences, Research Conferences, Events organized by the Erasmus National Offices, Erasmus Info Days organised by the partner Universities, | iTEM Stakeholders |

| | | | |
|-----------------------------|--------------------|---|---|
| | | <p>Meetings with the Industry</p> <p>iTEM will organize its own events / workshops during its lifetime</p> | |
| Stakeholders Emailing Lists | Online | <p>Generate emailing lists with the projects' stakeholders for fast communication</p> | All Project's Stakeholders |
| e-Newsletters | Online | <p>Already the 1st Newsletter has been released</p> <p>Newsletters will be send to the projects' stakeholders when milestones have met – expected in six months base</p> | All Project's Stakeholders |
| Publications | Offline | <p>Publications in high profile National & International Conferences and Journals are very much encouraged</p> | Scientific Community related with the ITEM objectives |
| Press releases | Offline and Online | <p>Press releases regarding the project's context, outcomes and actions in local level are very much encouraged</p> | Local and National Stakeholder Communities |
| Project Videos | Online | <p>To introduce project results and also for commercial purposes the consortium can prepare videos. The latter will be uploaded</p> | All Project's Stakeholders |

| | | | |
|------------------------|--|---|--------------------|
| | | onto the Website and to the Social Media Pages of the project | |
| Internal Communication | Shared One Drive File Repository Skype Group Meetings | Remote Meetings | Project's Partners |

Table 2: Communication Channels to be employed by the iTEM Project

2. Networking with Other Projects

iTEM project will also work in expanding its network by searching other projects in similar themes. Collaboration with peers in the same area or similar topics (e.g. STEM education) should be established. Projects funded by the various Erasmus Plus actions related with the iTEM should be identified and collaboration and sharing of results with them should be implemented. Searching tools could be (a) the beneficiary portal of Capacity Building projects in the EACEA area; (b) the Erasmus National Offices & Websites; and (c) partners' network and other projects.

Some projects related to iTEM are:

- iINNOVATIVE Photonics Education in Nanotechnologies (iPEN)
 - Funded as a National Capacity Building Project by the Erasmus Plus
 - Promotion of photonics education specialised in applications in nanotechnologies
 - Shared topics with the iTEM: modern educational methods to enhance teachers teaching & lecturing performance
 - Network: Europe and Israel
 - <https://ipenche.chania.teicrete.gr>

- Applied Curricula in Technology for East Africa (ACTEA)
 - Funded as a National Capacity Building Project by the Erasmus Plus
 - Shared topics with the iTEM: Teaching STEM sciences
 - Network: Europe and Ethiopia, Uganda and Tanzania
 - <https://www.actea.net>

- Critical Skills for Electronic Engineers for 2020 (CRETE)
 - Funded by the Strategic Alliances Erasmus Plus Call
 - Shared topics with the iTEM: Modern Teaching methods in STEM (e.g. PBL and POPBL)
 - Network: Europe
 - <https://crete2020.chania.teicrete.gr/the-objectives/>

Partners are encouraged to participate in the events organised by these projects and to create contact with these consortia. In order to create cross dissemination, it will be considered to create a joint event with these projects.

3. Monitoring and Tracking

The main monitoring tools to track the project website and social media statistics will be Google Alerts tool.

An Excel sheet has been formulated and have started to be completed to register and track all the dissemination actions along the project's lifetime. The Excel file has been uploaded and shared with the partners in the one drive shared files repository. The information can be registered onto this Excel sheet includes: (a) responsible partner; (b) type of activity; (c) stakeholders; (d) number of audience; (e) countries addressed; (f) interaction with other projects; (g) attachments

The following indicators will be used for evaluation:

- Web statistics – number of visitors and downloads of documents
- Social Media number of followers and engagement received (e.g. number of likes in Facebook)
- Events – number of workshops and other events organized, number of participants and international coverage
- Press impact – number of articles published on website, conferences, workshops and scientific journals

4. Dissemination after the end of the project

Communication and dissemination activities will continue beyond the funding period of the project. The iTEM consortium will keep the website and social media pages alive and continuously updated. The modified existed modules will exist to be taught after the application and modifications required the iTEM policies applied, tested and evaluated during the project's lifetime.

5. Plan

i. Role of Consortium Partners

The collaboration and the active involvement of all the partners in the dissemination and communication activities is essential for the success of the iTEM project. Partners organizations are also crucial since they have already established their networks in local, national and international level; these networks can highly contribute to facilitate and support the exposure of the iTEM project. The latter is their project and thus are the most appropriate part to disseminate and communicate the project's results with its stakeholders.

Dissemination is strongly rely on the effort its partner to present the project and its results. All the partners should contribute to the various planned activities with different roles and actions. For example all the partners should notify the iTEM management committee for the following:

- a. Relevant stakeholders that probable are interested in iTEM results e.g. Departments of Mathematics of other Universities beyond the iTEM consortium within their countries
- b. Dissemination events e.g. Erasmus Weeks, International Days, NA dissemination events and educational conferences taking place; special focus should be given to events taking place in the targeted areas e.g. Israel, Uzbekistan and Kosovo
- c. Establish dissemination contacts with the Associated Partners & Industry

ii. Materials to disseminate to stakeholder groups

Table 3 contains the various dissemination material and tools have been employed or will be employed to reach the various stakeholder of the project.

| | Project Website | Social Media | News Letters | Surveys | Videos | Publications | Curriculum | Posters / Leaflets | Events |
|-----------------------------|-----------------|--------------|--------------|---------|--------|--------------|------------|--------------------|--------|
| Scientific Community | X | X | X | X | X | X | X | X | X |
| Associated Partners | X | X | X | X | | X | X | | X |
| Industrial Partners | X | X | X | X | X | | X | | X |

Table 3: Dissemination tools and stakeholders

iii. Timeline and Workplan

Dissemination of the iTEM project has started from its very beginning. The actions have been taken have been contained into a special excel sheet has been formulated for the needs of the project. The timeline of the dissemination actions will follow the evolvment & implementation of the project's work-packages & timeline. More specifically:

1. **Preparation Phase (WP1, Months 1 – 6):** During this period, need analysis & motivation for the project's necessity, among some selected partners, has been implemented. The Scientific Community (academics teaching maths, students have followed the targeted modules) has been surveyed for the difficulties face during teaching and learning mathematics. During these surveys, the specific stakeholders informed about the iTEM objectives. During this period, the website, the newsletter and the social media started to be constructed and the information between the project and its stakeholders enabled to be established
2. **Development Phase (WP2, Months 6 – 34):** This is the period where the (a) proposed curriculum; (b) the proposed educational tools & methods will be applied, assessed and be modified. Moreover training events for students, teachers will be planned and be implemented. Dissemination materials & tools e.g. posters, banners, newsletters, website, social media, surveys and publications should be prepared and communicated to the respective partners. Dedicative events such as Erasmus Weeks and International Days should be attended and communicate the project's stakeholders for its progress and successes. This phase is expected to progressively

increase both the frequency and the relevance of communicating activities and therefore increase the audience interest and expectations about the project.

3. **Communication of the Project's Results (Months: 24 – 36):** Reports with the findings and the effectiveness of the iTEM tools, methodologies will be highlighted, be released and be sent to the stakeholders. Participation in high profile conferences (sometimes under the self contribution set up) should be attempted and be managed. This will be the peak of the project's communication plan and the beginning of the pre-marketing activities to be conducted up to the adaption of the iTEM solutions in other Institutions and other STEM modules

4. Conclusions

The communication and dissemination plan plays a key role in the success of the project. It is very essential to be set and be discussed among the partners from the very beginning of the project. It provides the consortium partners a guidance about the project's stakeholders and the use of resources and tools to be used to:

- Establish visibility of iTEM
- Establish communication and awareness with project's main stakeholders
- Be visible in the main events related to the project's theme and scopes
- Disseminate the European principles and Erasmus spirits among and beyond the partners' consortium

Project's stakeholders should be stimulated by the project's dissemination actions and get actively involved with it. Their interest for the project should be developed and grow together with the project's evolvement. We aim iTEM solutions to be adopted by other partners in Kosovo, Israel and Uzbekistan but also within the European partners and beyond. Mathematics is the playground of the project but the latter aims all the STEM modules. Therefore is important that all partners contribute to communication and dissemination activities within their country and beyond, whenever is possible. The registration and reviewing of the dissemination actions will be assessed in six months base by the project's coordinator and the dissemination team.

Part II: Exploitation Plan

1. An Introduction

The issue of exploitation of the iTEM's results is very high on the management agenda of the project. The exploitation plan will be continuously revised and be updated.

The main objective of the iTEM project is to enhance the motivation of students in learning Mathematics. This will be implemented by (a) introducing real life based problems that can be solved using fundamental concepts from Linear Algebra I and Calculus I; (b) progress the teaching abilities of the Math teachers using modern, tested teaching methods such as Problem Based Learning and Project Oriented Based Learning Methods; and (c) by introducing teaching & learning online tools that will facilitate the teaching and learning of the targeted modules. iTEM project does not envision to change the existed course curricula in the partner Institutions. It aims to enrich them and provide them with another dimension that will help students to realize the power of mathematics in real life and sciences.

The exploitation of the iTEM's methodologies and tools is supported by the need analysis took place in various test Institutions within the iTEM project. The latter addresses the depicted needs of the project's stakeholders: (a) enhance the motivation of learning mathematics using real life problems and connect them with the rest of the studies; (b) support students' learning support with online & offline tools; and (c) enhance teaching abilities of math lecturers. The expected improvement in students' realization and enhanced motivation to learn mathematics, are results that will help the project's steering committee to communicate with the decision makers (Math teachers, department's directors and rectors) and ask their support & adaption for iTEM tools & methodologies beyond project's lifetime. The awareness of these stakeholders from the very beginning will be chased from the very beginning and at the first chance appears.

2. What to exploit

The iTEM outcomes to be leveraged by the partners and beyond the consortium are the following:

- The modified curricula in Linear Algebra I and Calculus I enriched with real life problems; the latter will be able to handle using fundamental principles from the aforementioned modules
- The concept to link Maths with real life problems will be exploited in other STEM modules as well
- The visualizations will be developed using purchased Mathematica Software or free software based on e.g. Geogebra. These simulations should visualize the main concepts of Linear Algebra I and Calculus I
- The tools will be developed such as moodle platforms enriched with tool that enable the teacher (a) to monitor students' performance and engagement with the courses; (b) to provide continuous assessment of students' understanding and realization of the main concepts; (c) follow students' reporting & assessment
- The teaching methods will be developed based on the applications of PBL and POPBL principles
- The events will take place e.g. Maths Meets Industry; the consortium will plan them beyond project's financial period

All the outcomes (training materials, tools and visualizations) of the project should be intellectual protected. Special discussions among the consortium **will let us decide the intellectual protection scheme to select for our products**. A copyright agreement for the ownership of the projects' outcomes is strongly suggested to be sign. This agreement should describe the following:

- Ownership of the project products
- Duties and Rights of each partner with regard the use of the products after the end of funding
- Processes of modifying jointly developed products
- Information and/or permission duties regarding the use of products
- The duration of the agreement

3. The Plan and the Timeline

The iTEM's timeline plans to apply and test project's practices and tools in two stages. During the 1st stage (M11 – M23) partners P1, P7, P9, P12 and P15 will be the test Institutions. The provided tools (moodle platform, online testing, simulations, support to the weak students, and real life problems to accompany the lectures) will enrich the existed modules' curricula in these Institutions. The results will be evaluated as a function of (a) students' satisfaction and success rates; (b) teachers' satisfaction and success rates. Continuously modifications will be implemented based on the received feedback. In the 2nd stage (from M23 – M34) all the test Institutions, these ones of the 1st stage and P6, P10, P11, P12, P15 and P16, will re-apply the proposed tools and methodologies. The results will be re-evaluated. The plan is the proposed strategies and tools, supported by the good results expected, will be exploited beyond the project's funding period and be applied also to other STEM modules as in Physics facing the similar problems & challenges.

The exploitation activities of the iTEM project will be evaluated as has been previously mentioned. The evaluation of the project's results will be re-assessed in six months base. A proposed list of topics to be discussed could be:

- Have there been obstacles to the implementation of dissemination and exploitation activities?
- How has the needs analysis been carried out in the planning phase of the project and was it sufficient?
- What were the products and other outcomes of the project, how they have been evaluated and what was the received feedback?
- Were all the test and not only Institutions involved in the exploitation activities?
- Were the objectives in creating new contacts and networks reached during the project?

The sustainability of the project's results should address the following parameters:

- *Building a network with stable relationships*: The partners should establish co-operation bonds between them. Moreover the collaboration perspectives beyond

currently projects should be build. The exploitation of partners stakeholder networks should be merged

- *Finding an institutional home*: The project's outcomes and topics should be among the regular activities of the partner Institutions. Additionally the project's objectives should be among the partners' priorities in order the findings & outcomes to be supported beyond project's lifetime. Moreover project's outcomes should stimulate the engagement of other partners beyond project's consortium
- *Integrating the results into national systems*: The integration of the project's results into educational systems is the best option to guarantee for the project's impact. To support such an action the consortium should consider the following: (a) does the project approach (partially) coincide with local or national policy aims?; (b) do policy and decision makers in the partner countries know about the project?; and (c) are any decision makers regularly aware of the project?
- *Quality, transferability and ongoing relevancy*: It is important the project's results to be able to be facile adapted. So the following questions should be replied during the project's development: (a) does the project develop generic or replicate results; (b) are there any other sectors the project's results could be applied?; (c) will be the project's results reviewed and be updated?

The iTEM project's exploitation plan envisions the following:

- The project's website and moodle platforms sustainability beyond project's financial supporting period (at least three years beyond its financial supported period); a contact person in each partner University will exist beyond project's lifetime
- The project's results will be integrated within the existed curricula of Calculus I and Linear Algebra I modules
- All the partner will sustain project's results and priorities within the targeted modules and beyond them e.g. other STEM modules

4. Conclusions

The project's exploitation plan is of high priority. Expresses the steps to be followed in order the investment of funds and human resources will have an impact mainly in the project's

targeted regions: Israel, Kosovo and Uzbekistan. As in the case of the dissemination strategy, the involvement of all the partners is essential. Figures of merit of a good exploitation plan are (a) evaluation of the project's outcomes quality; (b) awareness of all the project's stakeholders and decision makers; (c) addressing stakeholders' needs & priorities.

Appendixes

All the appendices have been uploaded onto the shared one drive document store, in the dissemination workpackage area (WP4)