

## **Progress Meeting Minutes of the 2<sup>nd</sup> Progress Meeting Report of the iTEM Project**

**30<sup>th</sup> of October 2019, Aalborg University, Copenhagen, Denmark**

### **Abstract**

*The 2<sup>nd</sup> progress meeting hosted by one of the iTEM partners, the Aalborg University. The venue was hosted in the Copenhagen campus on the 30<sup>th</sup> of October 2019. All the partners have actively participated, with no absence. The meeting was started at 1000 o'clock and has completed by 1530 hrs with a short 45 minutes break for lunch at 1230. All the objectives were discussed and interesting views were expressed. All the meeting has been filmed, and the videos are available to anyone is interesting. In this report we capture the highlights of the meeting and the most important decisions have been taken. A summary table follows at the end with the various tasks set for the next four months and the assigned partner next to each one of the them.*

### **1. The Objectives & Agenda of the Meeting**

- To review what has been achieved
- Deviations of from the project timeline and submitted proposal
- Proposed Solutions & Strategies to reach the project's targets and address obstacles
- Views on the 1<sup>st</sup> Intensive Course for Teachers in PBL
- Next things to do for the forthcoming four months period
- Arrangements for the next progress meeting

### **2. The Participants**

All the partners have participated in the meeting with no exceptions. More particular the 2<sup>nd</sup> progress meeting was followed by:

- 1) Dr. K. Petridis (HMU) – iTEM Coordinator
- 2) Dr. E. Kokkinos (HMU), math teacher
- 3) Dr. M. Zakinthynaki (HMU), math teacher

- 4) Dr. E. Triantafilou (AAU) – Local host, iTEM Manager in AAU
- 5) Dr. O. Timcenko (AAU)
- 6) Dr. Renate Nantschev (UMIT)
- 7) Dr. Eva Feuerstein (CVUT)
- 8) Dr. Rodrigo Gonzalez (ULL)
- 9) Dr. Mirella Vinerean – Bernhoff (KSU)
- 10) Dr. Yosief Wondmagene (KSU)
- 11) Dr. Ivan Chorbev (FINKI)
- 12) Dr Vesna Dimitrova (FINKI)
- 13) Dr Aleksandra Mitrovikj (FINKI)
- 14) Dr. Boris Koichim (WIS)
- 15) Dr. Jason Cooper (WIS)
- 16) Dr. Nissim Harel (HIT)
- 17) Dr Ayelet Butman (HIT)
- 18) Dr. Laure Barthel (HAC)
- 19) Bekhod Akhmedov (KEEI)
- 20) Abror Ibragimov (KEEI)
- 21) Alibek Eshev (KEEI)
- 22) Dr. Azimbay Sadullaev (NUUz)
- 23) Jasurbek Karimov (NUUz)
- 24) Javlon Karimov (NUUz)
- 25) Alisher Shakhobiddinov (TUIT)
- 26) Rabbim Rahmatov (TUIT)
- 27) Arberi Krasniqi (UoM)
- 28) Burim Hasani (UoM)
- 29) Faton Merovci (UoM)
- 30) Isak Shabami (UoP)
- 31) Rexhebeqaj Hamiti (UoP)
- 32) Qefsere Gjonbalaj (UoP)
- 33) Shqipe Lohaj (UoP)
- 34) Armend Berisha (UC)

### 3. The Decisions Taken

The decisions have been taken and the assigned tasks are registered here based on the discussions took place (and have recorded) during the meeting. For any further clarification please contact the coordinator (Dr. Konstantinos Petridis, [c.petridischania@gmail.com](mailto:c.petridischania@gmail.com)).

**The decisions are listed per Workpackage.** More particular:

Work package One: Preparation (Responsible Coordinator National University of Uzbekistan)

- The **NUUz (Uzbekistan), KEEl (Uzbekistan), ULL (Spain) and the UC (Kosovo)** should sent to the coordinator by the **end of November 2019** at least two real life problems. The latter should be linked with the curricula of Linear Algebra I and Calculus I as they taught back to the partners' Institutions. More particular the ULL will construct two PBL oriented examples that will need the construction of teams of students to solve them. The duration of addressing these short projects will be two weeks after the introduction of the examples from the Math Teacher. The provided examples should be able to be solved using definitions are taught at these modules
- **University of Mitrovica** will not accept 1st year students based on a decision of the Ministry of Education of Kosovo; UoM will adopt the iTEM principles (simulations, real life problems, frequent testing) into two other 2nd year introduction level Math courses: (a) Mathematical Statistics; (b) Discrete Mathematics. **Real life problems** should be introduced by the University of Mitrovica **by the end of November 2019**
- **The HMU** due to internal curriculum restructure, will apply the iTEM strategies and tools on the following 1<sup>st</sup> year Mathematic Modules: (a) Statistics & Probabilities; (b) Differential Equations & Computational Methods. These two modules should be generated into the Moodle Platform and **real life problems** should be introduced by the University of Mitrovica by the end of **December 2019**
- **FINKI** suggested to apply iTEM principles in Discrete Mathematics. So FINKI should introduce real life problems **by the end of December 2019**. The reasoning for this change is that the ICT Departments include more Linear Algebra and Discrete

Mathematics than Calculus I. The Discrete Mathematics course should be generated and examples to be introduced **by the end of December 2019**

- **All the partners from the test Institutions** should upload the educational material of their modules (using a template the HMU should provide) onto Moodle. Particular the partners from NUUz, University of Pristina, HAC and HMU should have uploaded their material **by January 2020**. Within the teaching material the suggested real life problems, simulations and probably short PBL projects should have integrated or added
- The **KSU** should provide 5 – 10 examples from the Industry that can be addressed using fundamental principles of Calculus I and Linear Algebra I. KSU should exploit the vast collection of problems have been generated through its involvement in the organization of the event Industry Meets Mathematics. The examples should be sent to the coordinator **by the end of December 2019**
- **AAU** will contribute with PBL problems from other disciplines that can be applied as projects along the lectures and need 1st year mathematics to be addressed. This task should be done **by the end of November 2019**
- **FINKI** should secure the operation of Moodle in **NUUz (by December** their course & Moodle Platform to be operative and appeared in the central Moodle platform). **HAC** runs its own Moodle platform but they have to transfer the taught material to the central Moodle be managed by the HMU. **All the managers will be placed as non – editing teachers to all the courses** so to have an overview picture of the project's progress. **From January** the test Institutions should be ready. The test Institutions will be: HAC, NUUz, HMU, Pristina
- **The test Institutions** should register all their students through their iTEM Moodle platform. The students will experience the iTEM tools and UMIT & FINKI using the learning analytics Moodle generates will provide useful information about high risking students to fail, which are the topics the students suffer more. The learning analytics will result in tools that can be integrated into the test Institutions Moodle platforms and will allow teachers to intervene as early as possible to provide assistance to 'weak' students
- **UMIT** should complete its report **by the end of November 2019**

- **KSU and AAU** will provide a report on how their ‘Student Councillors’ Policy works back home. Their report should be ready **by January 2020**
- **The 1st period of testing the iTEM principles extends from January 2020 – September 2020** (e.g. HAC contains summer semester as well)

### **Work – package Two: Development**

- **FINKI and UMIT** will prepare (in the central Moodle Platform) a course for teachers how to exploit the learning analytics the platform generates; Moodle for Moodle!!. The suggested name of the module will be: **10 steps to use Moodle for teaching** – It should **be ready by January 2020**
- **HMU** will prepare a supportive / preparatory module for students to follow before joining Calculus I and Linear Algebra I courses. The course will be in English. It should be ready **by the end of January 2020**
- **The next Intensive Course for students & teachers** will take place in Tirol and be hosted by the UMIT. The dates have been decided by the hosts and will be from Monday the **14<sup>th</sup> of September 2020 and until the 16<sup>th</sup> of September 2020** (where a progress meeting will take place). The participation will be as following: 4 students per partner and three teachers (including the manager will participate in the meeting)
- HAC, UC, UoP and NUUz should provide the frequent testing exams **by December 2019; All the tests will be send to FINKI and a bank of questions will be generated (January 2020)**
- All the examples (both the problems and the solutions) should be with the coordinator (NUUz, ULL and UC) by the end of November 2019; **The teaching manual from Nissim and Eva Feuerstein should be ready by December 2019**
- **There is an issue regarding the overloading of some topics** with a lot of examples and some others are supported from few (check the pilot courses in the Moodle Platform). **How can we challenge this situation?** This situation will be handled by the coordinator. When all the real life problems and the frequent testing will be collected we should have a balance. In the opposite case the partners should work

to enrich the units poor of provided examples after a notification will be received by the coordinator

- **Visualizations** should be prepared by the local Institutions on the available software e.g. Geogebra. When Mathematica will be supplied then this software should be used (provides real life problems as well that Geogebra does not provide). In general use for the visualizations any program you are used back home. **By the end of January 2020** the test Institutions (NUUz, HAC, HMU and UoP) should have developed up to 40% of the Visualizations they need. The Test Institutions can operate any software they wish as a tool to develop their visualizations (related to the fundamentals of the course will apply the iTEM policies)
- **ULL** will upload into the Moodle examples of visualizations related to Calculus I and Linear Algebra I have been developed by them. It will be nice to have uploaded these visualizations onto the pilot modules **by the end of January 2020**
- **FINKI** has the budget to travel to test Institutions and provide assistance to install the Moodle & train them how to use it!!
- Preparation of the Guidelines for Students manual should be prepared by **HIT and CVUT** by **September 2020**. Before its uploading, WIS will provide assessment
- The real life problems should be realistic – in order students **to have the motivation** to do and be inspired by them to view the impact of Mathematics
- Different PBL scenarios can be followed (during the second stage of the project); (a) short PBL projects in between the lectures; (b) half semester duration PBL projects (Nissim's proposal); the same topic for all the students (topics to be too general in order to be able to be approached from many angles); 15 – 25% of the overall grading of a course; students will assess the other students – assessment will be part of their grading; **Dr. Nissim Harel (HIT)** will send to us its proposed scenario; the support to the students to address the set project will be in out of the lecture hours (use of the office hours); the groups should not be more than ten students!! Ideal to be 4-7 students per team. The teams should consist from students with complementary skills e.g. one to know how to program, another how to present; all these skills should be presented by the facilitator at the

beginning (day one). We should provide to the students **some conflict management training (Dr. Eva Triantafilou (AAU))** will provide some references to advice – **by the end of December 2019**, the material will be added into the Moodle in the PBL course site)

- Dr. Eva Triantafilou **will provide some study material** that will help the teachers to operate as facilitators during the application of the PBL. Please execute this task **by the end of February 2020**
- **Dr. Konstantinos Petridis** will formulate a supportive module for the PBL that will have as an objectives to teach students the following: (a) How to make bibliographic research; (b) how to make presentations oral or through a poster; (c) how to write a thesis/report (at undergraduate level). The course will be ready **by March 2020**
- **An Online Forum** will be created in the Moodle Platform in order to support the application of the PBL principles in the test Institutions. Within this forum the partners will share experiences / ask questions each other regarding the application of PBL. The Forum will be generated by **Dr. Triantafilou** and will be led by her. **All the partners** by the end of **January 2020** should have assigned one person from their Institution who will be responsible to interact with the forum
- **The coordinator (HMU)** should be make the appropriate adjustments so any post will be placed to the Moodle to be able to be saved and be sent as an email. **FINKI should help to address this issue. This service should be ready by the end of January 2020**
- **The teaching material regarding the modules will be tested in the 1<sup>st</sup> stage** (January 2020 – September 2020) should be uploaded onto the Moodle. Their format could vary according to the test Institutions preferred format (PPT or text) **but in all cases the iTEM policies should be clear seen: frequent testing, use of real life examples, PBL short or long projects**
- **The event of the KSU – Mathematics Meet the Industry**, will be implemented by **August 2020**. Discussions with **Adrian Muntean (KSU)** should be established by the end of December for this task

- In the meetings and in the Schools only people that involve in the project should participate !!!

### **Work-package Three: Quality Assurance**

- **By June WIS** will visit test Institutions to provide constructive feedback about the application of iTEM priorities in the test Institutions; the summary will be provided by WIS will be available to all the partners
- **The received feedback provided from WIS or the external evaluator** should have a format that facilitates to transfer (a) the main findings; (b) the next steps to be followed to address a problem or perform better
- **WIS** should send the summary – report regarding (3.1 / 3.2) – the motivation to implement the iTEM - should be with the coordinator **by the end of November**
- The management evaluation questionnaire will be send to the iTEM consortium **by December 2019. Responsible for this task is the HMU**
- **A monitoring visit has been planned by the Israeli NA** on the 5<sup>th</sup> of November 2019
- Regarding the evaluation of the school implemented in AAU, Dr. Evangelia Triantafilou has already send an evaluation questionnaire – please find also a link of this questionnaire on the website as well (will be available on the online document store). For those you have not done yet, please follow this link: <https://forms.gle/XiX29uh3QodgtEvL7>
- **AAU** advised the participants, that **the evaluation** of the PBL projects in its case happens through meetings between the students of the team and the team with the facilitator. These meetings happen three times per semester. Dr. Evangelia Triantafilou will send a questionnaire they use and after its evaluation by the WIS team will be released to the rest of the partners to be used

### **Work-package four: Dissemination & Exploitation**



- The dissemination Excel Sheet where all the dissemination activities should be updated by all the partners
- **Regarding the HIT event:** All the participants should submit to the coordinator the following: (a) Their oral or poster presentation; (b) Photos of their dissemination action; and (c) their names to be included through the HIT activities program. Each participant for the HIT can stay for maximum five days – but they should submit the supporting documents in order the iTEM to justify their expenses
- **On 18th and 22nd of May 2020**, the Department of Electronic Engineering will plan an Erasmus Week; so the partners are very welcome to travel and participate in this event. They can use the bilateral agreements between the HMU and their Institution for staff & teaching mobility or the International Mobility funds (HIT, HAC, UC)
- **The 2<sup>nd</sup> Newsletter** will be released by the **HMU** by the end of December 2019
- **The project's brochure** will be ready by the end of December 2019. Responsible will be **the HMU** of this task
- **The partners should sent to the coordinator the links where the project is disseminated** (immediately) in their Institutions – a link with the project's website should be visible
- **All the partners** should write a short report how they plan to exploit the results of the iTEM project during and beyond its funding. The report should be ready by **February 2020**

#### **Work-Package Five: Management**

- **All the partners** should have send all their travel documents to the coordinator regarding (a) the event in Copenhagen; and (b) the event in HIT. Please do it **by the end of November 2019**
- **The partners should send their cost statement by the middle of December** to the coordinator. The cost statement should be contained by the supporting documents (travel, timesheets, contacts, etc)

- **The coordinator by the end of December** will transfer all the expenses have been send to him by the partners. The table will be send to the partners to complete the missing information
- **All the partners** should assess the progress meeting. Please do it **by the end of November 2019** – the link is the following: <http://bit.ly/35whqKG>
- **The next progress meeting will take place on March 2020.** The dates of the meeting should have fixed **by the end of December 2019.** Only one person per partner will participate in this meeting

#### 4. A Table for the future Actions

This is a table that summarises all the tasks that have to be implemented and by who and which Institution.

	Task	Deadline	iTEM Staff	iTEM Institution
<b>Work Package One: Preparation (NUUz Responsible Partner)</b>				
1.1	Real Life Problems	30/11/2019	1) R. Gonzalez (ULL) 2) A. Berisha (UC) 3) Javlon Karimov (NUUz) 4) Alibek Eshev (KEEI)	ULL, NUUz, UC and KEEI
1.2	Real Life Problems in Discrete Mathematics and Statistics	30/11/2019	Dr. F. Merovci (UoM)	University of Mitrovica
1.3	Discrete Mathematics Module to be generated into Moodle	20/12/2019	Dr. I. Chorbev (FINKI)	FINKI
1.4	Real Life Problems linked with the Discrete Mathematics to be generated	20/12/2019	Dr. I. Chorbev (HMU)	HMU
1.5	Differential Equations Modules to be generated into Moodle	20/12/2019	Dr. M. Zakinthynaki (HMU)	HMU
1.6	Real Life Problems of the Differential	20/12/2019	Dr. M. Zakinthynaki (HMU)	HMU

	Equations Module should be generated			
1.7	Statistics & Probability Module Should be generated in the Moodle Platform	20/12/2019	Dr. E. Kokkinos (HMU)	HMU
1.8	Real Life Problems linked with the Statistics & Probability Modules to be introduced	20/12/2019	Dr. E. Kokkinos (HMU)	HMU
1.9	The educational material linked with the described modules should be started to be uploaded onto the Moodle Platform	30/01/2020	1) M. Zakinthinaki (HMU) 2) E. Kokkinos (HMU) 3) Javlon Karimov (NUUz) 4) I. Shabani (UoP) 5) L. Barthel (HAC)	HMU, NUUz, Up, HAC
1.10	Provide 5-10 Industry related problems that can be addressed using Calculus I & Linear Algebra I principles	30/12/2019	Dr. A. Mundreanu (KSU) Dr. M. Bernhoff (KSU)	KSU
1.11	PBL projects that can be dealt using fundamental Mathematics	30/11/2019	Eva Triantafilou	AAU
1.12	FINKI with NUUz should prepare the Moodle Platform in NUUz	30/12/2019	Ivan Chorbev & Javlon Karimov	FINKI & NUUz
1.13	HAC should mirrored its Math courses will be tested next semester into the iTEM central platform	30/12/2019	Laure Barthel	HAC
1.14	All the iTEM managers should be assigned as a	30/12/2019	Konstantinos Petridis	HMU

	non editing teachers to all the modules will be tested by the iTEM			
1.15	The test Institutions should have uploaded all their modules in the central Moodle Platform by January 2020 – All the students in the 1 <sup>st</sup> stage test Institutions should be registered through the Moodle Platform of the iTEM project	30/01/2020	Evangelos Kokkinos(HMU) Maria Zakinthinaki (HMU) Laure Barthel (HAC) Javlon Karimov (NUUz) Isak Shabani (Pristina) Ivan Chrobev (FINKI) Renate Nantschev (UMIT)	HMU, Pristina, HAC, NUUz, FINKI, UMIT
1.16	AAU and KSU should prepare a report on how the student counsellor policy operates in their University	30/01/2020	Eva Triantafilou and Mirela Vinerean - Bernhoff	AAU and KSU
1.17	UMIT reports on the strategies and technologies are used along with Math teaching in the test Institutions should be completed and submitted to the consortium	30/11/2019	Renate Natschev and Elske Ammenwerth	UMIT
<b>Work – Package Two: Development (HIT Responsible Partner)</b>				
2.1	FINKI & UMIT will prepare a training module entitled Moodle for Moodle	30/01/2020	Ivan Chorbev & Renate Natschev	FINKI and UMIT
2.2	HMU will prepare a preparatory module for students to follow	30/01/2020	Konstantinos Petridis Evangelos Kokkinos Maria Zakinthinaki	HMU

	before joining a Calculus I and Linear Algebra Course			
2.3	Next Training Event in Mathematics for Teachers and Students	<b>14<sup>th</sup> to the 16<sup>th</sup> September 2020</b>	Renate Natschev and Elseke Ammenwerth	UMIT
2.4	Teaching Manual for Mathematics	30/12/2019	Nissim Harrel and Eva Feuerstein	HIT and CVUT
2.5	Frequent Testing Questions to be integrated to the modules	The questions should be send by 30/12/2019 (HMU, NUUZ, UoP , HAC) and the question bank should be ready by 30/01/2020 (FINKI)	Evangelos Kokkinos Maria Zakinthinaki Laure Barthel Isak Shabani Javlon Karimov Ivan Chorbev	HMU, HAC, UoP, FINKI
2.6	Preparation of the Visualizations	40% of them ready by 30/01/2020 using GeoGebra or Mathematica	Evangelos Kokkinos Maria Zakinthinaki Isak Shabani Laure Barthel Javlon Karimov	HMU, HAC, NUUZ, UoP
2.7	Visualization Support Material – Examples	30/01/2020	Rodrigo Gonzalez	ULL
2.8	How to Learn Mathematics – Manual	30/09/2020	Dr. Nissim Harel, Dr. Eva Feuerstein and Ronnie Karsenty	HIT , CVUT and WIS
2.9	Suggested PBL scenario	30/11/2019	Dr. Nissim Harel	HIT
2.10	Conflict Management Material	30/12/2019	Dr. Eva Triantafilou	AAU
2.11	Become a Better Facilitator than Teacher – Study Material	28/02/2020	Dr. Eva Triantafilou	AAU
2.12	How to present your work – Supportive Module	30/03/2020	Dr. Konstantinos Petridis	HMU

2.13	Online Forum to support the application of a PBL scenario along the test Institutions	30/01/2020	Dr. Eva Triantafilou	AAU
2.14	Upgrade the Moodle to be able to send emails and not just announcements	30/01/2020	Dr. Petridis and Dr. Ivan Chorbev	HMU and FINKI
2.15	Confirm the dates of the next training event for students & teachers in KSU	By August 2020	Dr. Petridis and Dr. Adrian Muntean	HMU and KSU
<b>Work – Package Three: Quality Assurance (WIS Responsible Partner)</b>				
3.1	<b>By September 2020</b> WIS will visit test Institutions to provide constructive feedback about the application of iTEM priorities	30/09/2020	Ronnie Karsenty & Boris Koichu	WIS
3.2	Report that explain the motivation to implement the iTEM project	30/11/2019	Ronnie Karsenty	WIS
3.3	Management Coordination Evaluation Report	30/12/2019	Konstantinos Petridis	HMU
3.4	Evaluation of the 1 <sup>st</sup> Course for the Teachers in PBL	30/11/2019	All the participants	HMU
3.5	Evaluation Questionnaires for the assessment of the PBL projects	28/02/2020	Evangelia Triantafilou and Boris Koinchu	AAU and WIS
<b>Work-Package Four: Dissemination &amp; Exploitation (responsible partner UC)</b>				
4.1	Up-date the excel sheet with the	28/02/2020	Armend Berisha (UC)	All the partners

	dissemination actions of the project			
4.2	Release of the 2 <sup>nd</sup> NewsLetter	30/12/2019	Konstantinos Petridis	HMU
4.3	1 <sup>st</sup> draft of the brochure	30/12/2019	Konstantinos Petridis	HMU
4.4	Links in the Partner Institutions that disseminate their participation in the iTEM	30/11/2019	Konstantinos Petridis	HMU
4.5	Exploitation Plan by the Partners	30/01/2020	All the Partners – the managers	HMU
<b>Work-Package Five: Management (Responsible Partner HMU)</b>				
5.1	Submission of the Travel Documents for the AAU & HIT events	30/11/2019	All the Partners	HMU
5.2	The partners to send their cost statements for the period January 2018 – October 2019	15/12/2019	All the partners	HMU
5.3	Cost Statement will be prepared for the project implemented costs by the end of December	30/12/2019	Konstantinos Petridis	HMU
5.4	Evaluation of the Progress Meeting	30/11/2019	All the partners	HMU
5.5	The Next Progress Meeting will take place in Tashkent in March 2020	30/12/2019	All the partners	HMU & NUUz