

DELIVERABLE D5.8: TRAINING AND DISSEMINATION REPORT 2

Document Version:	December 30, 2016
Document Status:	Version 5
Document Type:	Report
Diss. Level:	Public
Lead Partner:	SCIO
Delivery Date:	M34 (December 2016)
Authors:	Andrej Novik (SCIO) Lenka Firtova (SCIO) Markéta Majerová (SCIO) Jan Synek (SCIO) Kristýna Fischerová (SCIO) Eliška Sovová (SCIO) Mustafa Ali Türker (SEBIT) Michael Kickmeier-Rust (TU Graz)

Please note that this deliverable covers also the contents of deliverable D5.7, which hasn't been delivered in M24!

TABLE OF CONTENTS

1.	Introduction and Scope	3
1.1	Training and dissemination goals	4
1.2	Strategy	7
1.3	KPIs	7
1.4	Executive summary	12
2.	Training and dissemination in the Czech Republic	12
2.1	Situation in the Czech Republic	13
2.2	The strategy in the Czech Republic	13
2.3	Activities held in the first period (1-12)	16
2.4	Activities in the second period (12-24)	17
2.5	Activities in the third period (25-34)	18
2.6	Conclusion	22
3.	Training and dissemination in the Turkey	22
3.1	Situation in Turkey	23
3.2	The strategy in Turkey	24
3.3	Activities held in the first period (1-12)	25
3.4	Activities held in the second period (13-24)	26
3.5	Activities held in the final period (25-34)	31
3.6	Conclusion	35
4.	Training and dissemination in Austria	35
4.1	Situation in Austria	35
4.2	Activities in the second period (12-24)	36
4.3	Activities in the Third period (25 - 34)	36
4.4	Conclusions	38
5.	General Conclusion	39

1. INTRODUCTION AND SCOPE

Deliverables 5.7 and 5.8 present the workshops and other activities conducted in the context of tasks 5.4 based on the first and second major releases and the final release of the system. It also concerns requirements as laid down by the task 5.5 to support the dissemination and exploitation work and to extend the project's impact via networking and training activities for the interested end-users and to present the theoretical foundations, the potential benefits and the use of the project's software.

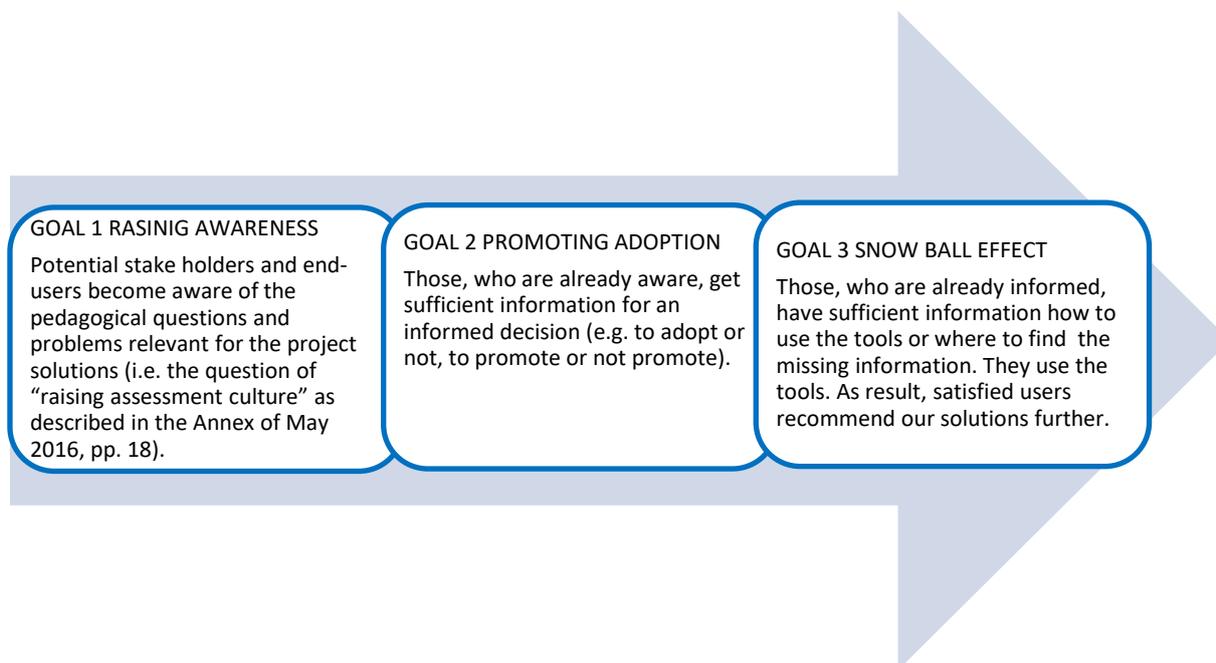
Training and dissemination activities, being not isolated from all the other project's activities, are closely connected to all other forms of interactions with end-users, be it piloting and evaluation, co-designing, advisory, or exploitation. In reality, these cannot be separated.

The engagement with schools and teachers as per DoW is structured into 4 different action lines:

- **Action Line 1:** Teachers will support the system design by participating in the in-depth requirements and demand analysis and actively contributing to the design work by participating in design workshops or focus groups (Task 5.2)
- **Action Line 2:** We will realize pilot studies in partner schools, during which the developed Web platform and its components will be applied in real-world settings in order to gather feedback and support the evaluation and validation of the system. Moreover, pilots will provide the research activities with rich data sets in order to promote the development of valid LA/EDM algorithms (Task 5.3).
- **Action Line 3:** We will realize evaluation studies, focusing on particular aspects of the system, such as usability, comprehensibility of visualizations, or validity of LA/EDM algorithms (Task 5.4).
- **Action Line 4:** Teachers will support the dissemination and exploitation of the project and its results by utilizing their multiplier roles (Task 5.5).

1.1 TRAINING AND DISSEMINATION GOALS

In fact, all of the activities mentioned above contribute to the three major aims of the project training and dissemination goals as internally defined by the consortium during the project duration. These are:



GOAL 1 – RAISING AWARENESS

The project's design and development directions are determined by a catalogue of pedagogical questions or tasks that should or could be potentially solved by Learning Analytics solutions developed by the project. The ultimate aim of learning analytics is to help students self-regulate their own learning by empowering them with actionable insights or actionable predictions based on previously collected data. However, learning analytics should be also viewed in a broader sense as an integral part of the information flow and exchange that is happening each day in education. In the formal part thereof, i.e. mainly in schools, this is traditionally viewed as assessment or educational assessment.

At this point, it is necessary to mention one observation, which we experienced in the course of interaction with schools in the participating countries. While we strive to create systems that could be applied and exploited throughout the European Union, it is necessary to highlight that in our countries there are significant cultural differences not only at the level of language, administration or religion, but also at the level of what we could call "assessment culture" – that is traditions, habits, needs and legislative restrictions on the use of learning analytics. Researchers often tend to focus only on the number of laptops or tablets or on the wifi speed in classrooms, and we have to admit that in the beginning of the project, we did this as well.

In reality, however, the question is much more complex. For example, while the myClass application with its basic functionality may be sufficient for some Länder in Austria or Germany, it may not be widely used by schools in the Czech Republic, Scandinavia or Turkey because they either already use or have to use other applications. These applications may offer only a small part of myClass functionality; however they consume all the time that a teacher can devote to using a myClass kind of application. Furthermore, there are big differences in what teachers in different regions consider as important data and what outcomes they want or need to use in their daily teaching practice. The same applies to students. For instance, in the project we can promote competencies but teachers may be assessed upon traditional knowledge of their students achieved in standardized tests (e.g. by inspectorates, MoNEs, etc.).

Finally, learning analytics have great tools to help teachers provide feedback to students, but actually the nature of feedback depends a lot on the school climate and educational culture. Some schools with very crowded classrooms prefer to provide feedback only in the form of grades and marks. Others have lower students per teacher ratio and can afford more timely, more detailed feedback.

Therefore, these differences have to be taken into account when promoting, disseminating or training teachers or end-users in general. The use of the analytics tools must be presented in a way that anticipates the situation of the target school. On one hand we, as the promoters, have to be aware of the now-and-here needs of the target audience, and also, we have to bear in mind that, although the pedagogical questions raised by the project may be of a general nature, they may not be perceived as crucial by all of our target audience¹. Thus, one of the goals is to make our target audience aware of the pedagogical questions as such, as these might not be crucial now (e.g. so-far not requested by the MoNE), however the global trends in education indicate that these questions will soon become important.

E.g. a typical situation in one of our many workshops included an activity:

- a) *Please list what can be assessed in a school.*
- b) *Please list what are the important things that a school should help develop.*

The typical answer for a) included a list of traditional subjects that are typically measured by standardized tests, while the typical b) list also included attitudes, skills and competencies where self-assessment and competence-based approach can be much of use, incl. novel knowledge and attitude visualization and analysis.

Accordingly, a)-list items already formed the content of the school's assessment culture while the b)-list was still out of it. Hence, the goal of the interaction was to make the teachers aware of the possibilities and needs of e.g. self-assessment and to include it mentally in the school's assessment culture.

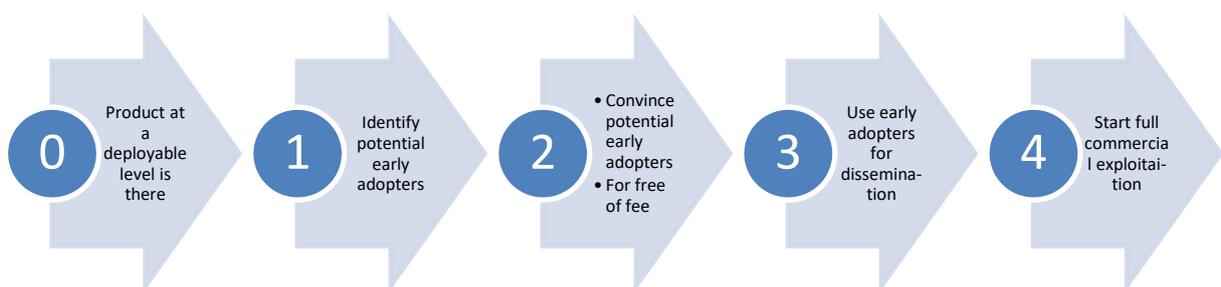
¹ See results in D5.6.

GOAL 2 – PROMOTING ADOPTION

Our project dissemination assumptions were based on the assertion that only users who are already aware of the pedagogical questions raised by the project (and answered by the LB tools) can successfully adopt the tools. Consequently, the next step was to offer solutions that could ease the schools' work like in the example given above. The typical reaction of teachers to self-assessment would be that effective self-assessment work can be very tedious and this could prevent many teachers from adopting these practices. Hence, the dissemination goal here was to demonstrate that there are tools that can unburden the tiresome work and that it can reveal new facts that would otherwise stay unnoticed and that can facilitate learning. In principle, the point is not only to help adopt the instrument itself, but to adopt a new assessment culture.

GOAL 3 – DISSEMINATION BY EARLY ADOPTERS - "SNOW BALL EFFECT"

This goal is very much connected with exploitation objectives² of the project as such. Given the experience of our business partners SCIO and SEBIT, one of the most efficient ways to promote and disseminate particular outputs at a given level of development is to let early adopters (i.e. those who decided to adopt the tools as a result of Goal 2) disseminate their positive experience in their own environment. From a purely exploitation point of view (i.e. product-oriented), the goal can be represented by the following scheme:



² For more details please see D6.5.

1.2 STRATEGY

In connection with the objectives and goals given above, and given the limited sources and time we had, we decided to focus on persons, institutions, organizations, bodies and authorities who are respected, reputable and recognized, both formally and informally, in our countries and internationally as those who push innovation. In the first phase of the project, we tried to identify these and to aim our future activities around them. Here it is necessary to mention that quite often these “innovators”, or “sponsors”, as named in D6.5, do not necessarily have to have a certain official accreditation or acknowledgement.

For example, in the Czech Republic there are around four thousand elementary schools (K1-9). Only few of them are renowned among all headmasters for their progressiveness and innovativeness. In reality, an official recommendation e.g. by the Ministry of Education is often followed just by a handful of schools, but an example of good practice of one of those progressive schools is followed voluntarily and immediately by many.

So in this given case, we identified the elementary school of Londýnská in Prague 2 and elementary school in Chrašnice as such progressive schools and involved their management in our activities. This opened us doors to other dissemination activities that will be described further.

As for the timeline of our activities, we decided, based on the current state of development, that in the first project period, we would focus mainly on Goals 1 and 2, and in the second project period, we would focus mainly on Goals 2 and 3.

In Turkey, the training and dissemination activities were oriented more towards exploitation goals, especially during 2016. Specific products which schools were already using were linked to the LEA's Box tools in order to demonstrate the added-value of learning analytics. Secondly, large events or webinars for a very large audience were used to attract the attention of sponsors (such as the MoNE or university groups).

1.3 KPIs

THE PLAN

The number of events that were foreseen in the DoW are copied below:

<i>Training and Dissemination Workshops</i>			
	Country	Nr. of Events	Nr. of Participants
Y2	CZ	15	10 to 20
	AT	2	40 to 50
	TR	5	10 to 20
Y3	CZ	10	10 to 20
	AT	2	15 to 25
	TR	5	80 to 100

The following table lists the activities planned for the last period (June – December 2016), as given in the Annex of D1.2 Management Report of Year 2.

Country	Description	Date	Tools trained	Responsible	Materials needed	Number of events
CZ	Training workshops	09-11/2016	Complete LB. LA possibilities in general, raise assessment culture awareness	SCIO	Demos, manuals, videos	14
AT/DE	Training workshops	1-2 Aug, 2016	Learning Analytics, formative Assessment, the portal as a whole	TUG	Demos, manuals, videos	1
AT	Dissemination Workshop	Fall 2016	Learning Analytics in School Practise	TUG	Demos, manuals, videos	1
AT	Dissemination Workshop	Fall 2016	Internet Security for Students and Teachers	TUG	Demos, manuals, videos	1
TR	Training Live Webinar	Summer 2016	2 hrs webinar on LA	SEBIT	In-service training for teachers using the project as demonstrator	2
TR	Training Workshop	May 2016, October 2016, November 2016	2 sessions of 2 hrs training, first on LA, then on LEA's Box for pilot school admins, teachers & students	SEBIT	Demos, manuals, videos	6

Other relevant documents for the presented deliverable are the Description of Work, Part B, in particular pp. 7-8 describing the key performance indicators, Description of Work, Annex I, pp. 21-22, also describing the expected performance, and the Annex document of May 2016, pp. 41 describing the expected activities for the period June-December 2016.

ACHIEVEMENTS

Here is the list of main interactions with end-users and presence in selected conferences and other forums with expected significant impact on training and dissemination goals as given above. Dissemination activities targeting more academia and business-specific goals are given in other respective deliverables.

Herewith we would like to note that often it is very difficult to strictly differentiate and distinguish between tasks and deliverables, where such events should be reported, as one interaction with end users may (and in reality should!) feed to several purposes. Typically, a 4-hour workshop with teachers can and in practice does feed to evaluation, co-designing and dissemination. In practice, a headmaster can agree to visit you once for a couple of hours discussing several topics instead of visiting you three times for 50 minutes. That is to explain difficulties in a strictly rigorous and unambiguous counting of KPIs.

Event	Goal	Partner	Date	Nr. of participants	Participant type	Nr. of events
Workshops with schools and teachers (Prague, West Bohemia Region).	G1	SCIO	Jun.14	38	teachers, headmasters	4
"Coffee and education" open public discussion[1] on technology in education	G1	SCIO	Dec.14	339[2]	teachers, parents, experts	1
Workshop for teachers involved in Microsoft education centres on Learning and ICT	G1	SCIO	Sep.14	30	teachers, tech-savvies	1
Workshop with schools (Prague)	G1+G2	SCIO	Jun.15	12	teachers	1
Structured discussions with schools management (all around CZ)	G1+G2	SCIO	Sep-Nov..2015	69	headmasters and their deputies	23
Co-design workshop with school Londýnská	G2+G3	SCIO	Dec.15	3	headmaster and his deputies	2
Interactive workshop with Olomouc school; direct involvement in teaching	G2+G3	SCIO	Feb.16	4	headmaster, deputy and 2 teachers	1
Co-design workshops with Pošepného nám. school in Prague on	G2+G3	SCIO	Mar-Jun..2016	10	headmaster, teachers	3
Training sessions for future teachers	G1+G2	SCIO	Jul-Aug.2016	20	teachers	3
Co-design workshop with Pošepného nám. school and Čechtice school	G2+G3	SCIO	Jun.16	3	headmaster, teachers	1
Trvalá obnova školy conference	G1+G2	SCIO	Aug.16	30	headmasters, teachers	1

Education Day 2016, Prague	G1	SCIO	Oct.16	30	teachers, parents, NGOs.	1
AEA Annual Conference 2016	G1+G2	SCIO	Nov.16	300	academia, publishers, experts	1
Presentation for all headmasters of Prague 6	G2+G3	SCIO	Nov.16	25	municipality, headmasters	1
Structured discussion with school management (Sedlčany)	G2	SCIO	Nov.16	3	headmaster, teachers	1
Training workshops	G2+G3	SCIO	Dec.16	50	headmasters, teachers	6
Symposiums, Conferences, Shows and Events where Learning Analytics was promoted and teachers for focus groups were recruited	G1	SEBIT	March-Dec. 2014	1000+	Academics, Teachers, School Leaders,	9
Training events to prep the teachers for the evaluation and focus group workshop for the design of the 1st release of the system (teachers were all from different ICT equipped schools)	G1	SEBIT	from April to July 2014	30	Teachers	3
School visits for dissemination workshops (after requirements were set for the 1st Release of the System)	G2	SEBIT	Winter 2014	50+	Teachers, Headmasters, School Leaders, School owners	3
Training to obtain end-user input about technical evaluation study on the 1st Release of System with 3 datasets representing 3 piloting scenarios	G2	SEBIT	Feb.15	10	Teachers	1
EBA (Turkish Educational IT Network) Teachers Training	G2	SEBIT	Summer 2015	30	Head teachers, senior teachers of MoNE	1
Publishing the 2 informative project movies + a review article + a forum at the SEBIT teachers portal	G1	SEBIT	Autumn 2015	300+	Teachers, headmaster	3
Learning Analytics presentation at Private Schools Symposium 2015 and 2016	G1	SEBIT	Jan 2015, Jan 2016	3000	All kinds of educators	2
Presentation at BETT Fairs 2016 London&UAE	G1	SEBIT	Jan/Mar 2016	500	Vendors, School representatives, investors, sponsors	2
Lecture in Grad Schools of Education (METU, AGU, Ankara, Hacettepe Universities)	G2	SEBIT	METU and Ankara in Spring 2015, AGU and Hacettepe in Autumn 2016	150	Grad School Students who would become future teachers or MoNE personnel	4
School visits for dissemination workshops (after requirements)	G2	SEBIT	Winter 2015	50+	Teachers, Headmasters,	3

were set for the 2nd Release of the System)					School Leaders, School owners	
Training mentor teachers of two major pilot studies (lasted 1 month each) in Maya and Ayse Abla Schools	G2	SEBIT	Feb 2016 (Maya) and June 2016 (Ayse Abla)	20	Mentor teachers, Headmasters	1
Training at Vizyon and Bahcesehir schools for advanced evaluation studies	G3	SEBIT	Autumn 2016	20	Senior teachers, headmaster, educational coordinator, school owners	1
Training workshop with head teachers during a 2 day workshop	G2+G3	SEBIT	Dec.16	100	Head teachers, senior teachers of MoNE	1
Webinar at Vitamin Teachers Portal about Learning Analytics with LEA's Box	G1+G2	SEBIT	Dec.16	300+ participant online, 300K can potentially view the recording	Teachers, headmaster	2
Training workshop at Abdullah Gül University	G1+G2	SEBIT	Dec.16	10	Rector and vice rectors	1
Blog articles about the state of Learning Analytics	G1	SEBIT	2015/2016	N/A	Public	3
Facebook activities	G1+G3	TUG, All	...	N/A	Public	...
Website	G1+G2+G3	TUG, All	...	N/A	Public	...
Training session Taus school, Backnang, Germany	G2	TUG	28.01.2016	25	teachers	1
Training sessions for KPH, Graz	G2	TUG	Jan-April 2016	4	teachers	3
Presentation of Lea's Box at the Ministry of Education	G1+G3	TUG	30. June 2016	3	Policy Makers	1
Bildung 4.0 - Training event for teachers (Vienna, full day)	G2+G3	TUG	05.12.2016	25	teachers	1
Bildung 4.0 - Training event for teachers (Graz, half day)	G2+G3	TUG	15.12.2016	4	teachers	1
Teacher Training Workshop Lower Austria (NMS Lilienfeld, Hainfeld, Traisen)	G2+G3	TUG	22.11.2016	17	teachers	1

[1] See online recording at https://www.youtube.com/watch?v=ZLVLx_I6ik8

[2] Approximately 30 participants on the spot and 339 views online.

1.4 EXECUTIVE SUMMARY

Let us now sum up the main points and conclusions related to training and dissemination:

Despite the fact the Lea's Box is a relatively small project within FP7 standards, consortium partners invested heavily in promoting, disseminating and ultimately training potential end users. This can be seen from the overview of activities carried out during the whole project period.

The project approached training and dissemination activities strategically with the ultimate goal of reaching the best possible impact and with the vision of exploitation of the project outcomes. Also, the training and dissemination activities were not understood as a one-way process. On the contrary, the information and feedback we received from the schools and learners was brought back to the project and helped its further advancement.

In that spirit we dare say that the project has reached most of its goals as foreseen:

- the end users in the participating countries became acquainted with the project and more importantly – became aware of the added value that can be provided by learning analytics;
- some of the tools were adopted by participating schools and learners;
- first market implementation of the project outcomes happened already within project timeframe and further collaboration is already planned.

In terms of the planned performance indicator matrix, the project performed very well. Of course not all of the events had a focus on Lea's Box topics and contents only. Activities have often been paired with other relevant topics for teachers.

	Country	Nr. of events	Nr. of participants
Y2	CZ	32	495
	TR	16	~1000
	AT	4	29
Y3	CZ	18	471
	TR	24	~5000
	AT	4	49

2. TRAINING AND DISSEMINATION IN THE CZECH REPUBLIC

The training and dissemination activities in the Czech Republic followed the 4 main action lines as given above. During our requirements and needs analysis (described in detail in previous WP 5 deliverables) we found out the first signs of a “cultural barrier” that might obstruct adoption of the outcomes of our project, the reason for that being the fact that the assessment culture as discussed above was too far from being ready to adopt the LB results.

There was a significant risk for the project that dissemination activities could be formally perfectly fulfilled in accordance with the DoW, however their real impact on changing the education and on uptake of modern visualization methods and algorithms could be close to zero.

So instead of a top-down approach (i.e. delivering readymade answers and tools to unprepared teachers, headmasters, students), we opted for a bottom-up or inductive process (i.e. letting the end users realize the problem themselves and only then try to offer solutions, or even better try to find solutions together with end-users within co-design activities).

2.1 SITUATION IN THE CZECH REPUBLIC

As concerns possibilities for interaction with end-users who in our case were predominantly schools, (i.e. headmasters, teachers, parents and students), there are no formal obstacles in providing e.g. trainings for teachers or school staff. There is a possibility to ask for an accredited status of the teaching content to be delivered within the training but this has usually very low impact on the willingness of the participants to take such a course. Therefore, we did not apply for it as it would be only an administrative burden.

Possibilities for further professional development are wide throughout the country, in particular thanks to European projects. There have been hundreds of educational projects administered between 2007-2015 within the operational programme Vzdělávání pro konkurenceschopnost.

The negative aspect of this has been the fact that the supply of courses and training outnumbered the real demand and time possibilities of Czech teachers. Therefore, a “hunt” for teachers started among many CZ companies, NGOs and ministries administering those projects, often offering low quality content with little usability. As a result, teachers and headmasters became very reluctant and hesitant in sending their staff to any trainings. Even an offer of a financial contribution for covering participants’ costs usually did not persuade headmasters to let the teachers go. What really worked well was the word of mouth, and especially if it was a mouth of a well-known and respected school or headmaster.

Also, the willingness to travel to large group trainings is considerably low. This usually creates problems in schools with time tables and teaching and therefore schools prefer if a training activity is held directly in their school or in their close vicinity, with only few participants.

In the given situation we saw only two possibilities:

- 1) visit the schools in the field at their time convenience
- 2) align with reputed and well-known schools and headmaster for further activities.

2.2 THE STRATEGY IN THE CZECH REPUBLIC

During the first months of the project we identified the main stakeholders who could ease up the dissemination of future outputs of the project and its main ideas. These included:

Elementary school Londýnská in Prague

a school renowned for their innovative approach to teaching (public school). Their deputy headmaster Mr. Nádvorník is an expert in ICT in education. We appointed him as our advisor and have held countless interactions resulting in the design of the Flower tool.

Elementary school Chraštica

a school renowned for their innovative approach to teaching (public village school). Their headmaster is the leader of an informal association of progressive schools called Trvalá obnova školy. We made our project video at the location of the school of Chraštica.

Teacher and a student from Chraštica school during video shooting in August 2015.



Trvalá obnova školy association

This association regularly organizes seminars and trainings for teachers which are sought after for their high quality and usefulness. Also, they organize the so-called summer teaching academia, where teachers from all over the country gather in a very informal and friendly environment for professional development. We used the opportunity to have a seminar on student autonomy aspects and ways to measure it.

Our lecturers, Jiří Hokeš and Jana Wills, talking about student autonomy measurements in Chraštica. Karel Derfl is the first to the left of the screen.



Mozartova elementary school in Olomouc

a large school putting great emphasis on work with data in education. Regular participant in almost all assessment projects in the Czech Republic. The staff discusses a lot the so-called assessment culture, its benefits and possible downsides. Their recommendation is followed by many others.

Andrej Novik and Lenka Fiřtová of Lea's Box in discussion with teachers and management of the Mozartova school in Olomouc. Headmaster Mr Kundrum is to the left.



Association of headmasters of gymnasia

a formal association of gymnasia headmasters (gymnasium is a secondary (age 15-19) general education school which is the most sought for type of school among parents as it offers the best opportunity to continue studies at a university). The president of the association Jiří Kuhn is often cited by media and invited for public debates on education. We invited Mr. Kuhn as an expert to our workshops.

Mr. Kuhn /to the right/ during group work in one of our trainings



During our activities, we involved these persons in our work. We offered all of the schools the possibility to pilot Lea's Box. Some of them accepted it (Mozartova, Londýnská) and thus became directly familiar with Lea's Box outputs and helped us finding other piloting partners. We referred to experienced teachers (e.g., Mr Nádvořík) as our advisors. Trvalá obnova školy and Association of gymnasia helped us hold high quality trainings at the end of the project.

2.3 ACTIVITIES HELD IN THE FIRST PERIOD (1-12)

In the beginning of the project we held mainly activities orbiting around Goal 1, i.e. to raise awareness, to find serious reliable project partners, to find synergies with existing activities of the schools (e.g. in project based learning etc.), and to use the potential of schools in co-designing activities.

During the first month we organized two workshops in Plzeň (West Bohemia Region) and two in Prague. As the project was at the very beginning, the workshops were rather general and oscillated along the pedagogical questions to be further developed throughout the project. One of the outputs of the project was the idea to involve parents more in the project and to use them as a leverage tool to facilitate earlier adoption by schools.

This led to an open public discussion on technology and education within the so-called “Coffee and education” sessions. This is a public event organized by Scio. We always invite renowned experts in the field of education for the discussion and also general public. The event is streamed online and stored on YouTube. The event is often visited by parents who are interested in education. It was attended by some 30 parents and the video was then viewed by over 300 visitors. However, after discussing the results of the event we came to the conclusion that the needs of parents and the possibilities of learning analytics are still too far from each other and that the goals of dissemination could be more easily reached by aligning with strong industry partners who are also active in the field of education. Therefore, we had a joint event with Microsoft for teachers of ICT. However, the pressure from the industry partner on following their strict business rules was not acceptable for us.

Besides these first dissemination attempts, we had numerous interactions with our partner schools, especially the elementary school of Londýnská, which also included co-designing sessions.

2.4 ACTIVITIES IN THE SECOND PERIOD (12-24)

This was a period with first tools available and first trials and piloting. Following the first evaluation results, we had a joint workshop in Prague with teachers of mainly Czech, English and Maths, explaining the then existing tools, their possibilities and how the tools can answer pedagogical questions of the project. The results of the workshop were very crucial for our further activities. We came to the conclusion that the pedagogical questions have to be reformulated into a more practical and more easily comprehensible wording, and also, that instead of the top-down approach (i.e. the readymade LB tools → the problems → the questions) we should deploy an inductive (bottom-up) approach (i.e. help the teachers and school observe their own daily routine, their problems and needs, let them formulate their own pedagogical questions and ultimately let them seek a solution to such problems). Although this is a considerably longer process, we believe that it is more efficient in a long-term perspective.

Therefore, in autumn 2015 we ran a series of 23 structured discussions with management of schools. The first ones were recommended to us by the schools given in 2.2. We personally toured all of the Czech Republic, always in pairs, visited the schools and held 90-120 minute sessions with school management following an inductive scenario in accordance with Goal 1 objective. Through the structured debate with the management we facilitated the headmasters and teachers to realize what are the pedagogical challenges of their school, what could be done to overcome them and what might be the tools to solve them, all that without having to name the pedagogical questions from our list. Usually the teachers came to very similar conclusions as we had in our project, only named them in their own words.

As result of this activity, we recruited several schools that became interested in using Lea’s Box tools and some of them continued to piloting in 2016.

As mentioned in the beginning, the training and dissemination cannot be understood as a one-way process. On the contrary, the information and feedback we received from the schools during the

period of autumn 2015, was brought back to the project, led to numerous co-design sessions with Londýnská school in Prague and Da Vinci school in Dolní Břežany, where together with them we slowly developed the concept of the flower application that was the next step in our piloting and evaluation activities.

2.5 ACTIVITIES IN THE THIRD PERIOD (25-34)

This was a period after the second and the final release, with new functionalities. It is characterized by first evaluation results and with new emerging questions.

As outlined by the Annex of May 2016, the KPIs for the dissemination activities in the Czech Republic were set very high with only a limited time to fulfill them (in practice only September – December 2016). Therefore we employed part-time employed skilled lecturer Eliška Sovová and training coordinator Kristýna Fischerová, who greatly helped achieve the goals.

In this period, together with schools, we debated and examined the very concept and function of learning analytics in education. If the ultimate aim for learning analytics is to help students self-regulate their own learning by empowering them with actionable insights or actionable predictions out of data, then schools asked us to provide information on how students perceive their skills and abilities of self-regulation, what are their attitudes to learning and what interventions can be deployed to leverage self-regulated learning. Therefore, we organized a series of 3 whole afternoon sessions with teachers and experts in education, trying to find a way, how this teachers' need can be encompassed in Lea's Box tool. This led to the development of learner autonomy questionnaire that was later integrated in the recent version of the Lea's Box inventory.

We also used the usually idle summer time for organizing training events for prospective young teachers. As a rule, these were two-day trainings led by our general manager personally and included various topics related to modern education. One slot was dedicated to the pedagogical questions raised by Lea's Box and solutions and tools that can be utilized to answer those questions.

Group photo from one of our summer trainings. The general manager is to the left.



Next, we joined summer teacher academy of Trvalá obnova školy in August 2016. The format of the conference was similar to our teacher trainings, but instead of prospect teachers it was focused on the existing teachers and school management. The result of the activity was that two more schools asked us to include them in autumn 2016 pilot.

On the international arena we used the opportunity to bring attention of the researchers and industry partners to the question of assessment culture as an important factor in the fields of implementation of learning analytics and educational assessment in general and thus making use of the experience of interaction with schools we achieved during our project. We had a presentation at the annual AEA (Association for Educational Assessment) conference in Limassol and we managed to influence the decision of the management of the association to dedicate the next annual conference to the question of assessment culture.

Andrej Novik of Scio together with Thierry Rocher – president of the AEA in front of 300 attendees from the whole world urging the scientific community to pay attention to the question of assessment cultures.



However, in autumn 2016 the main focus was on training sufficient number of evangelists who could spread the ideas and solutions of Lea's Box beyond the end of the project.

Therefore, we organized a series of 6 half day trainings in Prague, where we invited all major stakeholders known to us (also with/and including participation of those mentioned in 2.2). Altogether, almost 50 persons attended these intensive events. At the workshops, we tried to capitalize on everything what we have learned during the project about the interaction with schools. We used the inductive method, we let the schools themselves identify the main problems (pedagogical questions).

And then, in response to that, we showed them specific examples of how they can use the LB tools to solve these questions. Subsequently, the schools were sent access codes to the application and explanatory guides and instructions. The participating teachers were also supplied material for them to pursue dissemination activities themselves. Also, we ran a simple satisfaction survey which showed a very high appreciation on the participants' side.

Here are some pictures from our autumn workshops:



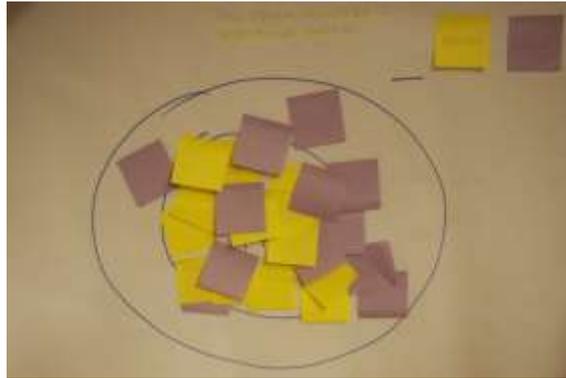
Karel Derfl, leader of Trvalá obnova škol in discussion with teachers from other schools



Training on December 13, 2016



Some participants spoke from the distance



Satisfaction survey after the training



A lot of space for hands-on activities



Andrej Novik explaining LB benefits

The result of this activity (as of the end of December 2016) was that several schools asked for continuing workshops for their other colleagues and several schools expressed their interest to use the Lea's Box tools in spring 2017 or autumn 2017.

Based on that, we plan to carry out follow-up discussions with the interested schools and also, discuss within the consortium what will be the concrete steps to enable further use of the Lea's Box in the years to come when there is a clear will on the side of schools to use it. (For details, please see the exploitation deliverable.).

2.6 CONCLUSION

Despite the uncertain beginnings of training and dissemination activities in the Czech Republic, given to a great extent by the specific situation on the Czech education and training market, we achieved most of the goals as defined both by the DoW and the Annex of May 2016. Also, we think that we managed to achieve the three main internal goal as we set ourselves within the consortium.

1. There is a considerable number of end-users who became aware of pedagogical questions studied by the project.
2. There is a considerable number of end-users who became familiar with Lea's Box directly.
3. There are early adopters who are wishing to utilize Lea's Box after the project ends, one of them even on commercial basis.

Of course, in terms of the whole country, there won't be any substantial paradigm change. We cannot expect massive deployment of learning analytics tools and algorithms in schools' daily routine. But this was also not our target. Given the scope, the size of our project and the conditions, we think we managed to reach a very appropriate result with a potential for further growth.

3. TRAINING AND DISSEMINATION IN TURKEY

Like those of SCIO, the training and dissemination activities in Turkey also followed the 4 main action lines identified at the DoW planning:

1. The design elements before each release of the system were taken to innovative schools for focus group studies. Training sessions preceded the studies about the basic concepts in learning analytics, the pedagogical goals, and state-of-the-art techniques that are available,
2. Later, the teachers who were most interested were taken to further training in order to be able to participate in pilot studies when the system releases were made. Before the piloting activities took place, training for students were organized as well
3. Following the pilots, evaluation studies were made. Training sessions were held again to familiarize the participants with the evaluation methodologies used by the project
4. The evaluation results were taken back to the schools in order to derive new requirements for the next release and further develop exploitation goals and plans. The participating teachers were also supplied appropriate materials so that they could pursue dissemination activities themselves.

SEBIT pilots were always designed to have a compelling product that the schools are already using and benefiting from. This product is then linked to LEA's Box to distinguishes easily the added value of learning analytics tools in the curricular studies. Therefore, each study ran for many weeks. A longer piloting period is also required to collect reliable statistics about the perceptions of the end users on usefulness and ease of use.

Noticeably, these activities all target eventual exploitation opportunities, especially as a value added service in conjunction with an existing product. There were also various webinars, expositions and

showcasing events to reach a wide audience in order to attract sponsors such as MoNE, private school networks, school owners and NGOs.

3.1 SITUATION IN TURKEY

The more the digital technologies are used in education, the larger the digital footprints will be. Only with a large enough data set it is possible for the analytics tools to produce reliable results. SEBIT has been the largest edtech company in Turkey since 1996 and SEBIT platforms were the only digital platforms used in education in Turkey. A registration and grade keeping service called “E-Okul” started in 2004, and was obligatory to be used nationwide. The scope was to collect all grading information from all schools in one central repository and print digital report cards. The input templates provided space for much more than grade information, such as behavioral data, the books read by each student, attendance and certificates of achievement with all grading information entered carefully in order to print report cards. Parents also got access to all relevant data. It is a big challenge in all countries to be able to collect all schools’ data in one central repository and Turkey achieved this goal quite early. However, the data was never used in decision support or planning even though this opportunity was present in MoNE’s work plan every year since 2008! The reason for this delay is probably political, but lacking access to valuable analytics technologies and the lack of expertise may be other reasons.



FATİH whiteboards are both a huge monitor and a digital whiteboard combo.

The second nationwide edtech initiative called the Movement of Enhancing Opportunities and Improving Technology (FATİH) Project³ was initiated on 22nd November of 2010. This is the “largest” e-learning project in the world, with the aim of broadband connection to 45K schools, interactive boards in 432K classes, and mobile computers for 10M users. The first step of the movement was to

³ <http://fatihprojesi.meb.gov.tr/en/>

establish an educational portal (called EBA which stands for Educational IT Network) to access digital resources where the teachers could add content as well. However, the focus quickly shifted to technical challenges, procurements and maintenance of devices. The insufficiency of software led to misuse or even lack of use of the equipment and the project plan had to be revised to devote more resources to software and content. SEBIT (ie. Turkish Telekom since SEBIT was acquired by TT in 2008) signed a protocol with the MoNE in February 2015, that granted SEBIT a mission to build the whole software stack for FATIH in the next 10 years using its Vitamin Platform and VCloud suite of educational services. SEBIT focus on making education better, rather than just making available technology better. A 10 years' plan was made accordingly and work started by revamping EBA into a collaborative environment. This version of EBA was made publicly online in December 2016.

The aim of EBA is to enable technology integration in teaching process by supporting efficient material usage. E-Okul and FATIH promises a very suitable ground for exploiting LEA's Box outcomes. The new EBA is an exploitation opportunity for LEA's Box project outcomes. Even though the existing tables and reports on these systems for monitoring activities raise the bar for usability and functionality expectations, SEBIT made all possible effort to run training, piloting and evaluation studies on LEA's Box with rigorous procedures and methodologies to be able to present outcomes that no doubt bear value.

Another issue in Turkey concerning learning analytics field is related to the university entrance exam preparation facilities. Since the quality higher education supply in the country is much lower than the demand, and education is still regarded to be the most likely way to escape the low income trap, the university entrance exam has extremely high stakes. Over the years this situation fed a "shadow educational structure" of thousands of exam prep centers. In 2014, upon a series of traumatic political events, these centers were shut down, leaving students who relied on them without option, almost overnight! During the first half of 2015 SEBIT made a huge effort to build from scratch an online test prep environment called RAUNT⁴, which can be used both by schools and individually as well. The RAUNT platform blends and tightly couples formative test taking and conceptual learning with digital resources for the full 4 years of high school education. Naturally the focal element shifts from conceptual learning towards test performance as the years proceed, but essentially it is a competency development process with a very tight feedback loop, that rely on data processing. Released during 2015-2016 school year, RAUNT started the 2016-2017 school year with more than 60K active users.

3.2 THE STRATEGY IN TURKEY

The project vision in Turkey is to use LEA's Box project developments and outcomes as targeted towards long term competency development towards higher education (such as in RAUNT), and efficient utilization of digital resources (such as those on EBA). Strategically, this goal is pursued by rigorous evaluation of added value to the effective use of digital resources used in grades 6 to 10, creating a push of analytics use towards higher grades AND promoting evidence-based practice in

⁴ <http://sebit.com.tr/egitim-cozumlerimiz-en.html#raunt>

Higher Education Institutions (HEIs), creating a pull of analytics use from lower grades. Training, piloting and evaluation tasks of SEBIT are organized accordingly and spread over nearly 3 years of the project duration.

During the first year, training activities had the goal to prepare focus group participants to provide valuable input for requirements and design of the first release of the system. During the second year, specific use cases were identified and the activities were planned to study (by training, piloting and evaluating) how analytics can best support these use cases. During the final year, the training activities as well as the piloting and evaluation were all geared towards exploitation. SEBIT's goal was to have the first market implementation (even a small one) of the project outcomes during the project lifetime. This has been achieved.

3.3 ACTIVITIES HELD IN THE FIRST PERIOD (1-12)

In summary, the first period activities were

1. Symposiums, Conferences, Shows and Events where Learning Analytics was promoted to recruit teachers for subsequent focus groups and pilots
2. Training events to prep the teachers for the evaluation and focus group workshops for the design of the 1st release of the system (teachers were all from different ICT equipped schools)
3. School visits for dissemination workshops (after requirements were set for the 1st Release of the System)
4. Training to obtain end-user input about technical evaluation study on the 1st Release of the System with 3 datasets representing 3 piloting scenarios

To become competent in using digital resources in educational settings is a learning process itself. Analytics and feedback strengthens the learning loop in developing not only general and subject competencies, but also this very competency of "opportunistic ability to purposefully benefit from ICT."

To assess the needs of teachers in this context, we established contacts in a number of events that SEBIT sponsors by providing a live feed service (as reported in D5.2). As being the official media partner in all educational events in Turkey with special contact with MoNE, SEBIT takes part in many educational events in the country. Meanwhile, selection criteria were determined about the profile of teachers in order to have a sufficient representation, including their experience with ICT, openness not



One of the first focus groups held in SEBIT. “Öğrenme Analitiği” in this Turkish presentation means “Learning Analytics” in English.

only to new technologies but also new pedagogical paradigms. Then we invited interested teachers for focus group meetings and provided further training on learning analytics concepts and state-of-the-art. The focus group meetings that followed the training yielded very effective input to RTD partners as to which tools, functionalities and properties are most needed for the first release of the system. These included time-series analytics to be able to make causal reasoning and limiting the usage complexity of the tools based on target grades (see D5.2 Focus Groups Report for details)

Note that in addition to these studies, online surveys were conducted using SEBIT Teachers' Portal which is available to all teachers in Turkey, of which 300K have entered at least once and 3K actively use it at least once a week.

3.4 ACTIVITIES HELD IN THE SECOND PERIOD (13-24)

In summary, the second period activities were

1. EBA (Turkish Educational IT Network) Teachers Training
2. Publishing the 3 informative project movies at the SEBIT Teachers Portal
3. Learning Analytics presentation at Private Schools Symposium 2015 and 2016
4. Presentation at BETT Fairs 2016 London and UAE
5. Lecture in Grad Schools of Education (METU, AGU, Ankara, Hacettepe Universities)
6. School visits for dissemination workshops (after requirements were set for the 2nd Release of the System)

7. Training mentor teachers of two major pilot studies (lasted 1 month each) in Maya and Ayse Abla Schools



EBA head teachers training about LEA's Box tools used on a real data set (anonymized)

In summer 2015, SEBIT organized training for 1000 teachers on content development with EBA resources and use in technology enhanced classrooms of the FATIH. In early June a 3-day preliminary meeting with 30 head teachers, all from different schools, was organized in Ankara to plan these trainings. That was right after the first release of the LEA's Box system, so this opportunity was used to hold a half day meeting; also training was done on learning analytics and pedagogical cases where LEA's Box tools could apply. It is important to note that these teachers had had experience in ICT equipped classes of FATIH project for 2 years. The pedagogical cases were i. Evaluation during project-based learning, ii. Structuring soft skills, iii. Tracking student progress, iv. Tracking class progress, v. Integrating self-assessment vi. Getting data without much ICT support. After training, presentation on analytics tools and visualizations including Hesse diagrams and OLM (as used on an anonymized real data set from SEBIT US product Adaptive Curriculum) and TAM3 survey were run with the attendees. The detailed outcomes of these study areas are given in D5.3 Revised focus group and design Report (M16). It should just be noted here that, TAM3 is successfully used for evaluating technology adoption in K-12 education as it is shown to attain a Cronbach alpha reliability of 97% in measuring Perceived Usefulness and a reliability of 93% in measuring Perceived Ease of Use.

In M18, Deliverable 2.2 System Design Document II was published, which included a large set of pedagogical problems and corresponding use cases that involve LEA's Box. 3 schools were visited and training and dissemination workshops were held with 50+ teachers, using these use cases in

D2.2. Later in 2015, one of these schools (Maya Private School) was selected to run the piloting study of the 2nd Release of the System.



Maya is an innovative K12 school. The architecture of the building (the entrance hall seen here) reflects their novelty-seeking attitude.

10 mentor teachers and 160 students of grades 7 to 11 participated in the 2 week course programme of a speed reading application called HızlıGo, www.hizligo.com, which is developed by SEBIT. The application consists of 21 digital activities that target specific competencies on speed reading which are mapped to a structure of 35 competencies. As the activities are used the performance measures are extracted, translated and loaded to LEA's Box via its API in real-time where analytics tools are applied to form an Open Learner Model for each user.



Training session in Maya conference hall with the students and their mentor teachers

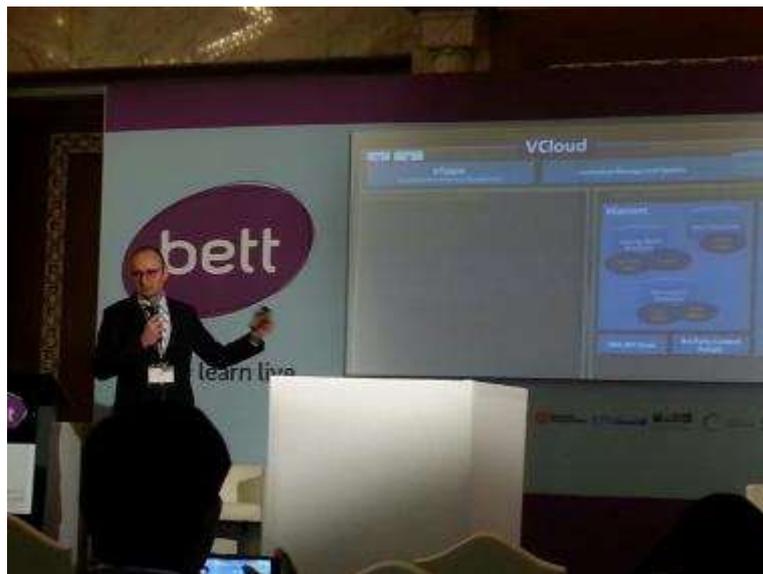
Prior to the study all the users were trained about pedagogical scenarios that can be realized using the analytics tools.



A lab session in Maya where older students are trained about more advanced tools

After the training days, all students were invited to start following the HizliGo course plan and consult LEA's Box on their own, with occasional supervision of their mentor teachers. The results of this important study which shaped SEBIT exploitation plans are available in D5.5 Evaluation Report II (M24).

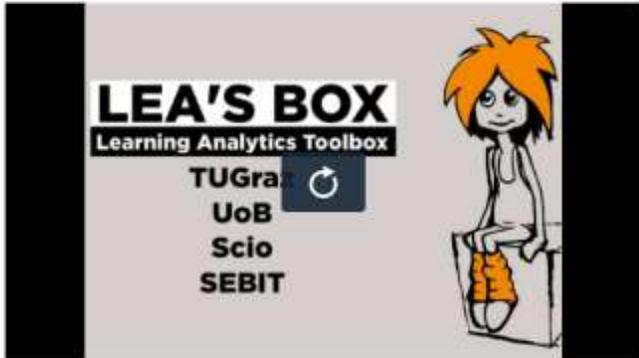
The second line of training activities during the period involved using mass media and mass gathering opportunities to disseminate the project ideas, value creation goals and technology to a wider public.



Presentation at BETT UAE Fair, 2016

To that end, presentations and training sessions were made at BETT Fairs in London and UAE, as well as at the Private Schools Symposium in 2015 and 2016. Moreover, lectures were organized at Grad Schools of Education in select universities that cooperate with SEBIT, namely METU, AGÜ, Ankara University and Hacettepe University.

İçerik Arşivi ▶ Videolar ▶ Neden Öğrenme Analitiği?



Neden Öğrenme Analitiği?

Beğen Inceleyeceklerime Ekle

Paylaş 0 Tweetle Paylaş

12.11.2015 847 - LEA's Box, ilk ve ortaöğretim seviyesinde öğrenci yetkinliklerine göre değerlendirme ve yönlendirme yapılabilmesi için veri odaklı bir karar destek sistemi geliştiren, Avrupa Birliği destekli bir FP7 Ar-Ge projesidir.

İçerik Arşivi ▶ Videolar ▶ LEA's Box - Öğrenme Analitiği Alet Kutusu Projesi



LEA's Box - Öğrenme Analitiği Alet Kutusu Projesi

Beğen Inceleyeceklerime Ekle

Paylaş 0 Tweetle Paylaş

19.11.2015 712 - LEA's Box, ilk ve ortaöğretim seviyesinde öğrenci yetkinliklerine göre değerlendirme ve yönlendirme yapılabilmesi için veri odaklı bir karar destek sistemi geliştiren, Avrupa Birliği destekli bir FP7 Ar-Ge projesidir.

Deha Fazio

LEA's Box project movies, showcased at SEBIT Teachers' Portal, that are viewed by approx. 800 teachers each.

As part of our effort to raise awareness in general public project movies were produced in spring and in summer of 2015. These productions were broadcast in multiple channels, including SEBIT Teachers' Portal.

3.5 ACTIVITIES HELD IN THE FINAL PERIOD (25-34)

In summary, final period (which was shorter than the others) activities were

1. Training at Ayse Abla private school towards second long term pilot
2. Training at Vizyon and Bahcesehir private schools for advanced evaluation studies
3. Training workshop with MoNE head teachers during a 2 day workshop
4. Training workshop with the rector and vice rectors at Abdullah Gül University
5. Webinar at Vitamin Teachers Portal about Learning Analytics with LEA's Box



Training session in Ayse Abla conference hall with the students and their mentor teachers

The first pilot study of the final period was designed based on the findings of the evaluation study in Maya Private School and it was carried out in Ayse Abla Private School in June 2016 and lasted 4 weeks including the training period and 2 week speedreading course assisted by LEA's Box OLM tools. 133 students participated from 8 different classes of 6th and 7th grades. For this study, the training sessions lasted a whole week, somewhat longer than the previous studies to familiarize the users with the tools as much as possible, prior to intensive use.



Training and evaluation at Bahçeşehir School with test prep teachers

Maya and Ayse Abla studies tested the value added service business case in an established e-learning product. Later in the year training sessions were held in two other private schools that were followed by evaluation studies of other specific business cases such as with test preparation with a product like RAUNT. In this case, analytics is more than an added value but has to be the core of the product, albeit with considerable integration effort. Bahçeşehir and Vizyon schools were selected for this purpose as they were RAUNT users and had a somewhat more exam oriented school culture.

The other specific business case had Higher Education Institutions (HEIs) as target. The HEIs in the world are in a massive transformation phase, this includes many European HEIs according to the ET2020 decisions and the Bologna process. Evidence-based practice is at the core of this transformation. AGÜ is an innovative HEI in Kayseri, Turkey which tries to align with this process. The potential of LEA's Box to be utilized in this process is evaluated in AGÜ as of the writing of this report. The evaluation is preceded by an online training session and the actual meeting will be held on 28th December 2016.

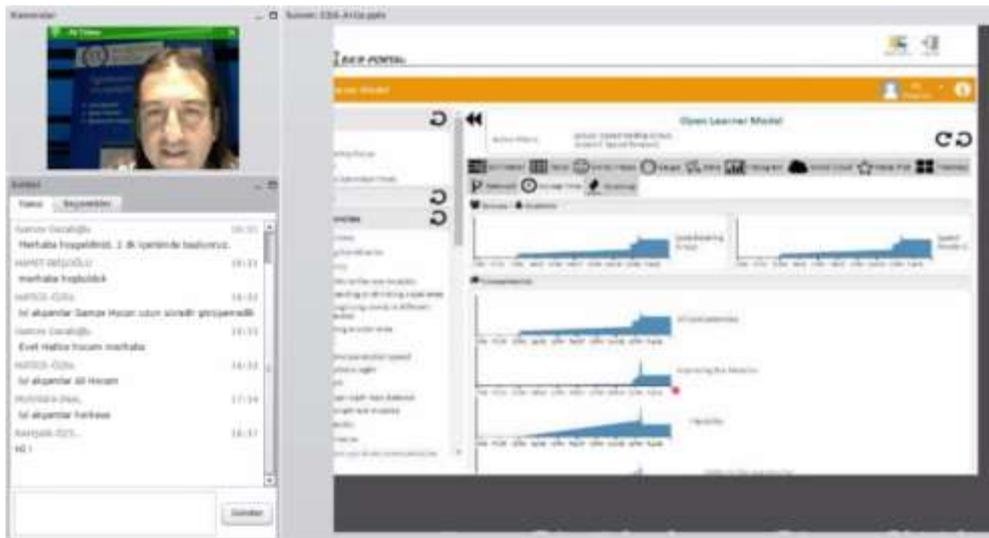


Training workshop with MoNE head teachers in SEBIT premises



Training workshop about OLM with MoNE head teachers

Also in December 2016, a 2-day workshop was held with 100 head teachers recruited by MoNE. These teachers would be catalyzers in using the new collaborative version of EBA which is just released. They followed a 3 weeks training period in SEBIT, towards this mission. As a part of that program, a 2 day workshop was held to discuss evidence-based practice and teach participants how to work LEA's Box tools in pedagogical scenarios where analytics reports can be used to help evidence-based practice.



Webinar at SEBIT Teachers Portal on the use of OLM for planning

December was a busy month, being the last month of the project. The training materials developed for MoNE head teachers were recycled to be presented at a webinar training on SEBIT Teachers Portal.



Webinar at SEBIT Teachers Portal on the use of advanced analytics tools

3.6 CONCLUSION

SEBIT has the overarching vision to become a data oriented educational services company. In a world that is getting more and more “digitally rich” and “digitally connected” neither content over the network nor dialogue over the content has much business opportunity any more. The services that facilitate these are all commodities now, almost free, sometimes less than free (meaning beneficial at no cost).

LEA's Box is a small project according to FP7 or H2020 standards, with few partners and small budget. However, SEBIT invested heavily in this project, approaching it strategically. The project work was regarded as a learning and competency development opportunity for the company in itself. Therefore, the well-defined project goals were an opportunity to push the company capabilities ahead.

In that spirit, the evaluation studies were carried out with longer term pilots and the results were compiled using rigorous frameworks (such as TAM3). Having observed firsthand the added value and added capabilities with learning analytics, the company has started the first market implementation of the project outcomes already within project timeframe. Further collaboration with the partners are foreseen (as indicated in D6.5 Exploitation Plans) and the specific business cases present sufficient incentive to accomplish much more.

4. TRAINING AND DISSEMINATION IN AUSTRIA

The training activities in Austria have been separated a bit more from typical dissemination tasks (as reported in WP6). Basically, we pursued two major strands: While in the second period of the project the training of teachers of the two main piloting schools (Taus in Backnang, German, and KPH in Graz, Austria) were in the focus of our efforts, in year 3 we broadened the strategy and offered training for a general audience of teachers in order to cover also goals 1 and 3 of the training strategy.

4.1 SITUATION IN AUSTRIA

The situation in Austria is similarly difficult as the situation in the Czech Republic, Germany, and probably other European countries. The time of teachers is clearly limited and so is the interest to participate in events which are not directly related to their daily practice and their daily obligations. Furthermore, in the last years, the possibilities for attending vocational trainings in the work time have been limited. Also, there are more strict regulations for involving substitute teachers. In addition to that, teachers who are able and willing to participate in external events usually choose such that offer know-how that they can directly and easily integrate in their daily practice. These prerequisites are not necessary given in training teachers in using highly innovative and perhaps prototypical tools and methods. We want to emphasize that ultimately Learning Analytics refers to teachers' everyday tasks, insofar each promotion of Learning Analytics tools has a certain connotation of saying that “teachers may not perform well enough in their very educational tasks”. Finally, Learning Analytics is always

associated with ethical and major technical and legal obstacles. All that makes it very difficult to reach teachers on a broad basis.

The strategy for realizing the dissemination and training events in Austria focused on the one hand on the myClass piloting schools and to reach a broader teacher community, we focused on the Austrian eLSA network (<http://elsa.schule.at/>) and the *Voxmi* platform (<http://www.voxmi.at/>). These are communities of teachers who are interested in novel and alternative approaches to education and who are specifically interested in using modern technologies and methods.

4.2 ACTIVITIES IN THE SECOND PERIOD (12-24)

In the first project period, no training activities were foreseen for Austria. As mentioned, the focus of TUG's activities in the training context was on the two main pilot schools Taus (Backnang, Germany) and the KPH (Graz, Austria). For these schools we organized training around the myClass versions which established the foundations of their piloting efforts.

For Taus we organized a full day workshop in Backnang on January 28, 2016. Most of the teachers of the primary level and some of the secondary level participated throughout the day. The topic was on the one hand training in using myClass and related analyses and reporting. On the other hand, we also introduced Open Learner Modelling as a concept. Both Lea's Box solutions found a way into the school's main conceptual pillars (cf. <http://10019.onlineqmh.de/3286.html>).

With KPH in Graz we established a 4-teacher task force. We met with these teachers, led by Erika Wolfberger and Stefan Stock, on a frequent basis and organized trainings and feedback sessions. Thematically we focussed on their piloting activities with the KPH myClass version.

4.3 ACTIVITIES IN THE THIRD PERIOD (25 - 34)

To broaden the training approach also in Austria, we engaged with the eLSA network (<http://elsa.schule.at/>) and the *Voxmi* platform (<http://www.voxmi.at/>). We organized 3 events for teachers focusing on "Education 4.0". Thematically this includes methods for competence-orientation, formative assessment, ICT tools for teachers, digital schoolbooks, as well as Learning Analytics in general and the Lea's Box solutions in particular. The workshop homepage is available online (<http://css-kti.tugraz.at/mkrwww/leas-box/bildung40/>; in German only). The workshop was designed to start with a general overview about the state of the educational system in Austria including its downsides and challenges. In the following we explained potential solutions, specifically with a focus on using digital data and also theoretical concepts (e.g. CbKST approaches to competence orientation). Finally we provided hands on training sessions with Lea's Box tools but also other tools and apps (in order to make the even really attractive for teachers and to avoid a too one sided focus on the project prototypes). The slides are available through the workshop homepage (in German). In a final session we had lively discussions with teachers about the strengths, weaknesses, chances, and perils of data-driven educational approaches.



Bildung 4.0. Teacher training workshop series homepage.

The event was first held on November 22, 2016 with a group of 17 teachers in the Lower Austria region (see picture). On December 5, 2016 we had the largest event in Vienna, with 25 teachers. On December 15 we had the same event in Graz on the TU Graz campus. Because the number of registered participants was only 4, so we shortened the workshop to a half-day event and made it more interactive.



Lower Austria training workshop in November 2016.



Vienna training workshop in December 2016.

4.4 CONCLUSIONS

In the final period, a strong focus of training is on supporting the exploitation of project activities. The strategy for Austria was on putting emphasis on the lively networks of technology-affine teachers in Austria. These teachers, although their number is limited, have a significant multiplier role in the context of the Austrian system. The attempt to influence the system and generate impact through teacher training activities turned out to be much more difficult. The slow institutional habits change only very slowly. A promising aspect is that we could establish relationships with the teacher training academy Vienna (PH Wien). A group of attendees of the Vienna workshop came from this institution. This academy is one of Austria's biggest and most important teacher training organisations and leading in promoting ICT in the educational practice. Future cooperation will influence the group of early adopters of ICT and Learning Analytics in the Austrian classroom and enable the Lea's Box project influence future developments (of course on a realistic level).

5. GENERAL CONCLUSION

Lea's Box is a very small project in comparison to other initiatives and projects; it is even smaller in comparison to national and European initiatives. Still, it reached a number of enthusiastic teachers and engaged policymakers in all partner countries who serve as multipliers for bringing Lea's Box solutions into practice. This goal, however, is ambitious since there are extremely powerful competitors in the market, competitors such as Google, Microsoft, major educational publishers (e.g., McGraw-Hill), and SME-level providers of tailored software solutions for schools (such as LMS⁵, Untis⁶, or Vision⁷ in Austria, just to name a few). It is indicative that right at the day when Lea's Box organized the training workshop in Vienna, Microsoft held their Austrian Education Summit 2016 (education.microsoft.com/mesa2016). Therefore, in order to be adopted by the community, our project had to offer a significant added value.

One of the findings of the project activities is that real pedagogical added value can be provided only if we take into account local circumstances, traditions, peculiarities and opportunities. There is no such potentiality as "one size fits all". And this is the general approach we followed throughout the project both in the area of tool development and when shaping the form of training and dissemination activities. We always tried to find and address the most efficient ways and methods that can help us reach the target audience within the time and financial scope of the projects. Therefore we heavily relied on in-person and less formal activities in the Czech Republic, we used massive online opportunities in Turkey, or made use of formal and informal teacher networks in Austria.

However, regardless of differentiated forms paying attention to local differences, the project approached training and dissemination activities also strategically with one major goal of reaching the best possible impact and with the vision of exploitation of the project outcomes.

Therefore, all the activities were aligned along three main strategic goals:

1. *Raising awareness (G1)*
2. *Promoting adoption (G2)*
3. *Dissemination by early adopters (G3)*

In that spirit we dare say that the project has reached most of its dissemination goals as foreseen. As

- *the end users in the participating countries became acquainted and more importantly – became aware of the added value that can be provided by learning analytics;*
- *some of the tools were adopted by participating schools and learners;*
- *first market implementation of the project outcomes happened already within project timeframe and further collaboration is already planned.*

⁵ www.lms.at

⁶ www.untis.at

⁷ <http://www.netop.com/de/klassenraum-management-software/produkte/netop-vision.htm>

In conclusion, we would like to add that small and educationally relevant approaches can have an edge over their large competitors when we develop and provide real pedagogical features as services for the mainstream platforms and when the ideas and small scale solutions can infiltrate the community of enthusiastic teachers. For this purpose, the efforts in relation to this work package and its tasks certainly are a great success and a significant step forward.