Identifying the Logical structure of languages by use of new Interactive mobile services, new diagnostic training methods for development of Key competences, and new Evaluation methods introducing assessment for learning practices

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EXECUTIVE SUMMARY
The iLike project, which is co-funded by the Comenius multilateral pilot of the European Commission and runs from 2012 to 2014, aims at identifying the logic structure of languages by use of new interactive mobile services, new diagnostic training methods for development of key competencies, and new evaluation methods introducing assessment for learning practices. Mobile technology provides new opportunities for didactical approaches in the classroom. It aims at the development of the logic of English as a foreign language through an explorative and collaborative didactical framework with the use of technology. The consortium involved in the iLike intends to implement mobile technology in the foreign language learning classroom, and thus implement a new and improved way of teaching grammar to students from 13 to 18 years old. At the same time, the iLike project aims at introducing a new methodology for acquiring the logic behind grammatical rules in language learning in secondary education in the partners’ countries today. This presupposes a new methodological approach, drawing more on student involvement and peer learning and instruction.

The project has taken into account the users’ needs and requirements based on the current situation and trends in language training. The proposed methodologies and tools have been evaluated in real-life conditions in primary and secondary schools, private schools and universities in Greece, Serbia, Sweden and Norway, engaging learners and teachers.

One of the main objectives of the iLike project is to maximize the impact of project outcomes for the benefit of the secondary but also the primary community, which are its main targets. Towards this end, the project work plan includes rigorous, targeted dissemination that deploys a variety of channels, including Internet presentations, conference presentations, newspaper articles, face to face communication with representatives of stakeholder groups, and more beyond that.

The iLike adoption strategy is three fold: internal adoption of project outcomes, which includes integration of methodologies and tools within the partner organizations themselves; external adoption of project outcomes, which involves the promotion of iLike deliverables for wide use by the targeted secondary education community; and extension of the activities, which involves the identification of project outcomes that have the potential of being further exploited, developed, and adapted for the benefit of the primary education community and adult education.
1. INTRODUCTION
There are two ways to tackle the problem of teaching a student grammar in the teaching of foreign language today. The first is through a communicative approach, where the students get to practice, use informal approaches and explore the language in context, i.e. learn through exposure and practice. The central theme of the approach, according to Dornyei (2009) is “to underscore the importance of meaningful communication and usable communicative skills in L2 instruction”. The second, the functionalist-structuralist approach exposes the students to rigid rules and drilling in order to reproduce the same later. The aim of every teacher is probably to combine the two, and possibly more than those two approaches, and that is also reflected in the framework for language learning on international, national and regional levels. For instance, Systemic Functional Linguistics is a school of linguistics that respecifics grammar as a social semiotic process, that is, as the social action of meaning-making, which always occurs in context and is driven by functions and purposes in the lives of communities (Ortega, 2009). The use of technology and handheld devices so much used in our everyday lives nowadays could be a part of the solution in language teaching, as a way of bridging the gap between the two approaches.

The foreign language context is the context of millions of primary school, secondary school, university and further education students around the world who rely on their time in classrooms to learn a language that is not the typical language of communication outside the classroom (Block, 2007). Language training requires mastering several different skills, such as oral and written language skills as well as reproductive, creative and accuracy skills in order for the students to be communicative. In other words, the needs of language training are multifaceted and with the help of mobile devices one can overcome some of the challenges by creating new methodology and as a result enhance functional and accurate thinking in the student groups.

In addition, secondary education formal curricula and supporting learning material in many European countries do not adequately deploy technology as a complementary learning tool. As a result, common didactical approaches in secondary education fail to take full advantage of the learning potential of technology enhanced learning activities, which may enhance the educational experience for learners and give a new dimension to conducting the lesson and testing students’ understanding for teachers, support emerging didactical frameworks such as exploration, and promote the development of structural, independent, and critical thinking beyond traditional, lecture-based instruction.

The objective of the project iLike is to introduce a new and improved way of teaching pupils the logic behind languages through the use of modern software. It aims at developing analytical, structural and creative diagnostic language thinking among secondary school children and high school students, through blended learning activities which can be easily integrated into existing school curricula as complementary educational tools.

Activities aim at encouraging children, young teenagers and students in general to analyse texts in order to break down selected language items. The activities demonstrate solutions which aspire to be the result of collective, creative peer learning problem-solving processes.

Bring Your Own Device (BYOD) is one of the most popular new trends within technology in education, and it is spreading fast as more and more students have their own handheld device. This gives new exciting opportunities for the teacher, for the way the lesson is
conducted and for the learning environment itself. Apart from the readily availability there are many other advantages with BYOD, especially in school, due to its cost-efficiency and attractiveness, particularly to younger students.

The new training method and software solutions take into account computer literacy levels in the selected age groups. iLike uses English as a foreign language (EFL) as the target, and specifically looks at verbs in English. Of course, it can be used for all kinds of grammatical phenomena, vocabulary building, discussion initiating activities and for other foreign languages apart from English.

The didactical resourcefulness of the teachers increases as a new tool is made available and the possibilities of getting immediate answers from each individual in the class open new possibilities for discussion and analysis between teacher and students or amongst students themselves. All students are invited to take part in the solution, and they are urged to do so while being anonymous. In addition, the participation of all students makes it easier for the teacher to give appropriate feedback as he/she will see the response of the entire group.

The iLike exploitation aspires to a wide adoption of project outcomes by the targeted secondary education communities in countries presented in the project consortium, namely Norway, Greece, Sweden, Serbia and beyond. To best address this objective, exploitation activities need to be designed with an external perspective to ensure that iLike work reaches stakeholders.

2. OBJECTIVES
Effective teaching takes into account the different learning styles of pupils. Therefore, teachers should present and explain material in different ways (Leask & Meadows, 2000) and the use of modern technology in the classroom can be specifically used to achieve this aim. The overall objective of this project is to introduce a new and innovative solution to language teaching and methodology in order to allow students to discover the logic behind grammar. This includes:

- **interactive feedback** from teacher and peers on the curriculum being taught in a lecture,
- **instant correction and instruction** from the teacher towards correct, less correct and incorrect answers to all students participating
- increased **peer learning activities** in the classroom
- **trials with a new form of assessment practice** to improve the connection between classroom practices and the actual real life situation of the students.

The iLike project aims to deploy new information and mobile technology, and specifically focus on the logical structure of languages to strengthen the learning of basic skills in English. This can be a means of developing analytical, structural and creative diagnostic language thinking among secondary school children and high school students, through blended learning activities that can be easily integrated into existing school curricula as complementary educational tools. Activities encourage children and students to set diagnoses to a text in order to break down selected language themes, and demonstrate solutions that are the result of collective, creative peer learning problem solving processes that may include creative learning through immediate feedback from assessments.
The specific objectives are to:

- **develop age-appropriate inquiry and project-based didactical methodologies** promoting acquiring logical language thinking for children and students age 13-18
- **develop proof of concept learning activities** on the deployment of mobile devices as an educational tool that motivates and creates engaging a peer learning climate in class. The activities encourage children to set goals, explore and acquire alternatives, evaluate solutions through the use of the interactive language neutral software. Combining individual working processes and peer learning class collaboration demonstrates how different language training solutions may work better for different individuals
- **build diagnostic, interactive language neutral services** through which children, students and teachers can acquire languages through methods that provide immediate peer learning feedback and sharing of ideas, findings, know-how, and good practice recommendations
- **validate methodologies and learning activities** through their deployment in real life educational settings in several countries, including Norway, Serbia, Sweden and Greece.
- **reach a wide range of stakeholders**, and promote the integration of proposed acquiring language methodologies and immediate feedback to assessments into school curricula through targeted dissemination and adoption strategies.

The iLike project extends the traditional teaching and learning dynamics of languages from vertical transmission of information and knowledge from the instructor to the students, to an explorative novel horizontal two-way learning environment where it is easy and flexible to foster inquiry and problem based active solving approaches. Instead of just being provided with rules and “correct” answers, the students are given the opportunity to discover, discuss and validate their own solutions according to a system with checklists that point towards the rules that lay behind the sentence build up.

Through this self-verification the students are directed towards understanding the logical structure of language, enabling them to create and reproduce the rules themselves at all times. The teacher is not simply a provider of correct answers, he/she validates or elaborates solutions together with the students. The confidence children gain by communicating through and controlling their environment should not be underestimated.

The use of ICT in the classroom as is proposed by the iLike methodology has the potential for differentiated learning, for independent and collaborative projects, for high quality useful resources to facilitate foreign language learning initiatives.

3. TARGET SECTOR

The next section is going to address the target sector which is in all probability interested and stands to benefit from the use of the iLike service. That includes a very broad target sector, namely stakeholders in the language learning community, academia, the general public, as well as the software industry. Maximization of awareness to stakeholders on specific language training activities with respect to the transfer of innovation in skill development in the language learning sector is important for their potential interest or possible use of the specific product. That can be achieved through national seminars, workshops, and dissemination activities and meetings with stakeholders that may test and use the iLike technology in their classrooms, workplaces or institutions.
In particular, the iLike project addresses all stakeholders in secondary- and high school education. Specifically:

- learners, who will benefit from enhanced learning activities on building fundamental learning to learn skills applicable in the long term and whose language performance will improve
- teachers or prospective teachers, who will gain from good practice recommendations on the deployment of ICT in education and its integration into existing curricula and any kind of learning activities
- policy makers, who will benefit from evaluation results on the relevance, applicability, acceptance, and effectiveness of the proposed language methodologies and technology
- teacher trainers, who will benefit from longer term professional skill development methodologies on the use of ICT in education
- parents, who stand to gain from improved education of their children
- the general public, through enhanced educational processes for the next generation.

4. EXPLOITABLE PROJECT OUTCOMES

4.1 METHODOLOGY

Behind the iLike software there is specific methodology ingrained to help maximize the learning results for the students and give the teacher an overall impression on the underlying concepts behind the tool and its uses.

The software promotes the development of analytic, structural and creative diagnostic language thinking, while at the same time being very easy to incorporate in any language classroom, no matter what the level of the students is. With iLike, the teacher does not need to completely revise the lesson plan or devote a lot of class time using it. The system is very flexible and adjustable. The iLike methodology is easy to use and integrate into existing lectures. It can be said that it is a combination of a communicative informal approach and a functional structuralist approach.

It is a dynamic system where every student in the classroom is seen and all voices are heard, even from the weaker or shy students who very often prefer not to participate actively in class. Students answer anonymously, so that makes it easier to avoid comparisons among the students regarding their performance. As a consequence, they are not afraid to tackle more difficult questions or make mistakes when they are not sure of an answer. The system provides instantaneous, non-judgemental feedback, a characteristic which can be especially beneficial to students with low self-esteem.

Mobile learning and bringing and utilizing the students’ own device in class is something which makes the lesson varied, interesting and at the same time brings an immediacy to it not present in traditional approaches where the use of technology, very much a part of the students’ lives, is often kept out of the classroom. At the same time, the problem-solving approach combined with the collaborative and exploitative approach which the iLike software promotes can bring together and assimilate the creativity of each student with accurate language production.

The system allows immediate feedback to both students and the teacher. In addition, it makes it easy to monitor students’ progress and identify possible problem areas. The
teacher utilizes the pupils’ answers and engages them in a meaningful way while at the same time maintaining control of the learning process. The system allows for the results to be presented in different ways depending upon the objective of the task. It’s up to the teacher to provide a case, a context and set the tasks the pupils should do. Then, depending on the results, the tutor can act on the students’ responses and provide follow up activities so that the pupils consolidate what was taught. Based upon the outcome he/she can choose to stop, send the task back in a different way or choose a new task. In this way, further learning is promoted through follow up activities based on the students’ contribution. As a consequence, the teacher has a much better knowledge of the performance levels of the class as a whole, checks the overall understanding of the chosen phenomena and the students realize their strengths and weaknesses in a more immediate and relaxed context.

The system encourages the participation of all students and facilitates student involvement. Students assume greater responsibility and take control of their own learning, so learner autonomy is greatly enhanced. Through interaction and collaboration with each other, the learners develop a deeper understanding of the language being taught. They can also express their own ideas while working on the tasks, resulting in being more creative and inventive. Students can test their understanding and get immediate feedback and there is a choice on the way they can work, it can be individually and/or with their peers. Since the whole class takes part in the submission of the answers, student engagement can be greatly strengthened and pupils are motivated to participate in a more meaningful manner. In this way, the use of the program can foster constructive learning, in which learners construct their own knowledge rather than recall the knowledge of the teacher. Constructive learning (Jonassen, 1996) is

- **active** – students process information meaningfully
- **cumulative** – all new learning builds on prior learning
- **integrative** – learners elaborate on new knowledge and interrelate it with their current knowledge
- **reflective** – learners consciously reflect on and assess what they know and need to learn
- **goal directed** and **intentional** – learners subscribe to goals of learning.

The iLike methodology and system can contribute to students learning more constructively and at the same time can liberate teachers from the traditional lecture-style of instruction by encouraging them to act instead as coaches and facilitators. The teacher takes on the role of guiding the students through the process. Being a guide implies that one knows that there are several roads to explore and can recommend when to take which direction. So the teacher acts as a mediator and facilitator, guiding the students through the whole process, not just offering information but helping the students understand and explore the logic of language.

The iLike software allows for the following directions to be taken:

- different types of tasks
- different ways to present the results
- different options on how to proceed after the voting
This adds variety and distinctness to the process, providing an extra dimension to the lesson, promotes creativity and opens up more options for both teacher and students to experiment, explore, discover, consolidate and recapitulate what was taught.

In this way, the system can complement a traditional approach and help teachers monitor pupils’ progress while students assume greater responsibility for the learning process. As a result, the motivation of the learners can be significantly enhanced, the lesson is more varied and the understanding of the grammatical phenomena much deeper and more meaningful. According to Roblyer (2004), integration of technology facilitates self-analysis and metacognition. If students, as is very much the case with activities that use iLike, are conscious of the procedures they use to go about solving problems and understanding how language works, they can more easily improve on their strategies and become more effective learners. Consequently, teachers can get students to analyze their procedures to increase their efficiency. A resource such as iLike is an ideal environment for constructivist activities that get students to think about how they think.

4.2 ILIKE LEARNING SERVICE AND SUPPORTING MATERIAL

The project has developed a software which can be used in laptops, tablets or smart phones with the intention to increase learning outcome in an in-class-environment, rather than as an eLearning tool. By utilizing mobile learning in class, a teacher creates interaction, both between peers and between teacher and student, while simultaneously engaging the students in theoretical and practical discussion, and encouraging them to use what they have learned to convince the rest of the group. Collaborative learning is supported at the same time, thus increasing the learning outcome for the whole group.

The iLike project utilises students’ own handheld devices as a tool in the methodology. The new pedagogical method includes cases from real life examples provided by the teacher in the students’ mobile devices to respond the cases, thus extending and elaborating the text material which may have already been taught or introducing new material to the learners thus giving a new and innovative way to discuss phenomena before the disclosure of the grammatical rule. It is also a very fast and efficient way of recycling previous knowledge and for the teacher and students to gain better awareness of what has already been presented but not necessarily mastered by the class.
The iLike-project

New methodology utilizing students own devices and active involvement/engagement

Requires a new software. Based on WordNet and NLTK. Easy set up in class for the teacher and students.

Figure 1. The iLike methodology graphically explained.

Figure 2. Student using the iLike service in class deploying her mobile phone in Soderhamn, Sweden.
One of the components in the project is to build a **Logical Language Service (LLS)** software, (also compatible with PCs and tablets) which targets student engagement and involvement in the learning process.

The software consists of two interfaces, one for the teacher and one for the students. The teacher provides the context and a task and asks the students to submit their answers, which are displayed on the teacher’s screen. The task is then displayed on the students’ devices and they are asked to submit their answers. Instantaneously the teacher gets the results of all the submitted answers on his/her screen. The teacher uses the teacher toolbox to go through the case including the input from the class. During this process, which may be repeated many times, students may vote and revote by using the Student Response System. Depending upon the design and the learning objective of the task, the teacher can choose to let the students talk amongst themselves before submitting their answers. The teacher uses the teacher toolbox to go through the case including the input from the class. During this process, which may be repeated many times, students may vote and revote by using the Student Response System. The diagnostic tool helps the teacher and the students in the class, to conclude and formulate the general language rule. These rules are at the end stored in the checklist. One of the main goals of the whole procedure is to create discussions in class or in groups, so that the teacher and the students in the class together may suggest the general language rules by using the mobile devices once more.

Once the students have submitted their answers there are a number of different pedagogical options for the teacher. The teacher can decide when the best time to display the result for the students is or if there should be an ensuing discussion after the result has been displayed. If the teacher realizes that the students have not yet mastered the phenomenon he/she might decide there is a need for follow-up tasks. Whatever didactical decisions the teacher might make, it is clear that modern technology provides teachers with a technological advantage they have never had before. The immediacy of the iLike product and the fact that all students’ answers can be seen, while still being anonymous, provides the teacher and the students a clear picture of the current understanding in the classroom.
Consequently, there is a shift in the responsibilities of the teacher. In the initial stage he/she is the one providing the content and the task the students need to respond to, with a clear idea in mind as to what is to be achieved. The teacher then takes on a different role compared to what traditionally is the case in many classrooms. Instead of just explaining to the students, he/she becomes more of a facilitator and a guide and can give students hints and tips as they explore the subject. As a guide he/she can also recommend students to take other routes or even change direction since he/she is familiar with the area being explored.

Furthermore, the teacher needs to decide how to provide the results, make sure that everybody has a grasp of what is correct or less correct and decide on when to end a task so as to not give the better students time to get bored.
The utilization of mobile devices and mobile learning as a learning aid in the classroom builds on the concept of learner autonomy, without removing the teacher from the learning process or environment. By letting students themselves take control over the matter, investigate the logic and build-up of languages and apply the rules they consider correct, they take greater control over their own learning process.

As we have previously concluded, mobile devices have the advantage that more voices are heard in the classroom, giving all students, not only the best in every group, the opportunity to test their knowledge and get immediate feedback which they can work with. By applying checklists with hints, the students can decide on their own if they are confident that their answers are correct, the teacher can moderate constantly, while students spend time on the case and also initiate peer-learning sequences where the students can defend their opinions based on achieved knowledge through autonomous work.
Research shows that:

- Learning is a social phenomenon and that the interaction between students is important for the development of knowledge and skills. Hence, the iLike software encourages group activities and peer learning.
- Students learn better if they are active and there is variation in the learning context. Therefore, the iLike software allows for a multitude of exercises to be performed, which require active participation on the part of all students.
- “Traditional” grammar teaching favors analytic students, since very little context is usually provided to the exercises, which puts holistic students, who depend on a context, at a disadvantage. Thus the iLike software allows for teachers to provide a context to the task to cater for both groups of students.

iLike also encourages inductive learning, where students discover the logic of language and formulate their own rules as an alternative to the more common deductive methods, where students are given a rule, an example and then are asked to practice. As a consequence, the use of the tool encourages higher engagement in what is being taught and greater involvement in the learning process, so it facilitates a higher engagement in the conducting of the lesson on the part of the learners themselves. As a consequence, the learners have greater motivation to learn the second language more efficiently. The application can help a lot towards the direction of creating the basic motivational conditions (Dornyei, 2003), generating initial student motivation, maintaining and protecting motivation and encouraging positive retrospective self-evaluation. By involving all students in the process it promotes an added social dimension to English language teaching. According to Dornyei (2003), a prominent researcher in the field of second language learning and motivation, “while an L2 is a “learnable” school subject in that discrete elements of the communication code (e.g., grammatical rules and lexical items) can be taught explicitly, it is also socially and
culturally bound, which makes language learning a deeply social event”. iLike, with the emphasis it places on the social aspect of learning, promotes group motivation, the unique motivational setup of cooperative learning, which aims at organizing classroom instruction in such a way so as to achieve common learning goals via cooperation. In many ways, cooperative learning “can be seen as a philosophy that maximizes student collaboration, and investigations have almost invariably proved that this approach is superior to most traditional forms of instruction in terms of producing learning gains and student achievement” (Dornyei, 2001).

The use of the iLike software implements a step-by-step progression in order for students to feel that they are constantly developing their skills and competences. It must also be remembered that exercises are but a step on the way to free communication. Therefore the use of the iLike software can form a natural part of the communicative learning activities in the classroom. In practice, this means that exercises can and should be followed up by open discussions. Voting about controversial issues that are of interest to young teenagers, for example, can be the perfect initiation to an interesting discussion in class, where all the students express their opinion and can subsequently participate in talking about it.

Thus it should be emphasized that this software is a didactical tool that can be used in order to improve the learning process. By using it in a correct way it will probably encourage each student to get a clearer understanding of his/her own learning and take increased control of the learning process and it will give the teacher a new and flexible learning aid to use whenever he/she thinks necessary to improve the quality of foreign language teaching in the classroom.

In addition, we would like to underline the usefulness of smart phones and other mobile devices as they supply teachers with increased didactical advantages. The key to success in utilizing mobile devices in the classroom is finding good methods to include all the students in the learning process, without of course removing the important influence of the teacher as a facilitator and moderator in the learning process. Technology can link students’ experiences and life outside the classroom with the classroom activities and learning process in general, two things which have often been kept separate.

4.3 Evaluation findings
As the software is web-based and only requires internet access, it provides an easy-to-use, flexible and low-cost solution for institutions and students. By being allowed to use technical devices during lessons the students’ interest is easily aroused and they get actively engaged in their own learning process in a playful and entertaining way. The aim of the project is to develop innovative teaching and learning-to-learn basic skills, and new online Logic Language Services (LLS) that address vocabulary, syntax and conjugation of verbs. iLike enables Teachers and Students (TS) to:

- investigate, manipulate and produce interactive language content by use of the latest mobile technology
- start using a new engaging channel for distribution and interactive restructuring of language content
- build entrepreneurial peer involvement through interaction, communication and immediate feedback in- and outside class
• apply new evaluation methods by use of peer learning assessment practices that utilize a new language diagnostic method.

The response to the iLike software so far has been very encouraging. The teachers using it find it a great tool to supplement their teaching and the students’ response has been enthusiastic. Questionnaires regarding its use and usefulness have been distributed to all students who study at the schools within partner organizations and the response of the students has shown that they really value its contribution to the way the lesson is conducted in addition to finding it easy to use. The introductory information regarding the iLike teaching method was thought to be adequate and the activities considered very easy to follow. It also seems that, when the students were asked to compare more traditional grammar lessons with those conducted using iLike, they certainly preferred the latter. The majority thought they possessed enough ICT skills to be able to use it effortlessly.

The teachers also found the tool easy to use and reported it enhanced their teaching, offering an extra tool to check comprehension of different grammatical phenomena by the students. Very often the teachers had predicted that the pupils hadn’t mastered a phenomenon, but sometimes they were surprised to find that their understanding of things the teacher thought needed no revision was not as good as the teacher initially thought. The software has the advantage of informing the tutor very accurately about his/her students’ progress and at the same time it makes it fun for the students to be tested, instead of administering just another revision exercise or a test. Its regular use was found to have contributed to better results. They especially found it very useful in consolidating previously taught grammatical phenomena.

In general, the students find the application easy to use, they like it a lot and so far the feedback from them has been very positive. They have extra motivation to do well in the activities prepared by the teacher specifically with their needs in mind compared to other more traditional forms of testing their understanding. Its use can make the teaching of English as a foreign language more varied and interesting and it can greatly contribute to giving both the teacher and the students a better and deeper understanding of the pupils’ performance.

In countries like Greece, for instance, where students are very mark and exam oriented and tend to be encouraged by their teachers to work individually instead of in groups, the approach in even more useful in forging a sense of group unity and putting emphasis on class and/or group and not individual performance.

The constructivist approach toward learning –in which students work in rich environments of information and experience, often in groups, and build their own understanding about them- is one of the major contributions the iLike program and methodology can make to the lesson of English as a a foreign language.

5. EXPLOITATION PLANNING AND INTERNAL ADOPTION STRATEGY: LEARNING INITIATIVES WITHIN PARTNER ORGANIZATIONS
The following section will outline the past and future initiatives taken by the partner organizations. Together the consortium have methodological expertise (HiST, OS and CFL),
programming skills (HCR and UTH) and experienced teachers at both secondary (OS and UTH) and high school levels (HiST and CFL). There have been varied initiatives and different activities which took part in every country participating in the iLike project, all with the common aim of promoting and improving the iLike services in the best way possible.

5.1 NORWAY

HIST CONTRACT RESEARCH, SØR-TRØNDELAG UNIVERSITY COLLEGE, TRONDHEIM, NORWAY

HiST Contract Research have used iLike in their classes in the university of Sør-Trøndelag University College, in Trondheim, developed material which included the use of iLike in order to promote their classes at the university and organized various presentations of the software in Norway, in EU countries and even in countries outside the EU.

PRESENTATIONS AND WORKSHOPS

HiSt Contract Research have organized numerous presentations of the software in schools and institutions in Norway and abroad. Additionally, they promoted the organization of various workshops in Norway, Serbia and elsewhere. There were demonstrations in Secondary Schools and High Schools in Norway, where English teachers and ICT staff were informed about the different ways to use iLike. Instructor training involved presenting the background to the methodological objectives of the iLike software, ensuing discussions with participants and demonstrations of the basic functions of the software with various hands-on examples of its different functions and its possible uses in a foreign language classroom. The teachers participating in the seminars were encouraged to create their own matters, experiment with the software and discuss their experience regarding its use. In addition, there were demonstrations of more advanced features of the software and hands-on experimentation, discussions and recommendations related to its possible uses in the classroom.

PRESENTATIONS, DEMONSTRATIONS AND WORKSHOPS

4th-6th March 2013

There was a demonstration at Sunnland, a Secondary School in Trondheim with teachers Guri Blokkum and Kringtad.

30th January 2014

HiST had a stand at Teknodagen, where approximately 300 high school students and teachers were present.

18th March 2014

There was a demonstration of iLike at Byåsen VGS, with the teachers of the school present.

6th May 2014

A demonstration of iLike took place at Otta VGS, where the teachers, ICT staff and the rector were informed about the iLike services.

31st October 2014
A demonstration for Orkanger VGS High School took place at HiST, with Espen Tørset, Maria Eikeli and Smørgrav attending.

28th November 2014

HiST organized a presentation at a network seminar for English teachers from High Schools in Trondheim to present the uses of iLike in teaching English as a foreign language to High School students.

17th December 2013

Apart from the different presentations in High Schools, there was also a presentation R&D Day at HiST for teachers and researchers.

![Figure 6. Teaching staff of three universities, FH JOANNEUM Graz, Technical University Graz and Karl-Franzens University Graz taking part in a workshop and getting to know the proposed new methodology of how to involve students more actively in their own learning process.](image)

31st October 2014

A workshop at the University of FC Joanneum, in Graz, Austria, was organized by HiST, where teachers, ICT-staff and researchers attended.
4th-5th June 2014

Outside the EU, iLike was presented in a demonstration at LMSU, in Moscow, Russia, where there was also a keynote speech.

CONFERENCES
The partners at HiST have also attended numerous international conferences where they presented the iLike software, its methodology and its potential uses in a foreign language learning classroom. iLike was presented in Inted 2013 (4th-6th March 2014), Edulearn 2013 (1st-3rd June 2013), ICT for Language Learning 2013 (15th November 2013), Online Educa 2013 (4th – 6th December 2013), Inted 2014 (10th - 12th March 2014), Edulearn 2014 (7th - 9th June 2014) and EuroCall 2014 (20th August 2014).

The software will be presented in more conferences in the near future.

5.2 SWEDEN
The Swedish partners have not only tried and tested the iLike programme but they have also organized various events in order to promote, present and make it widely accessible to any parties that might be interested.

CENTER FOR FLEXIBLE LEARNING, SODERHAMN, SWEDEN
The Center of Flexible Learning is an ideal venue to implement innovative technology. They are open to new ideas and approaches to language learning with the aim of a flexible
approach to suit adults and promote the acquisition of new learning skills. The teachers at the Center for Flexible Learning have extensively used the iLike system to implement their classes in teaching English as a foreign language to teenagers and adults.

The teachers that took part in the project have transferred their expertise in using iLike in their classes and they have shared their experiences with their colleagues. A systematic effort is made to transfer knowledge on instructional good practices through scheduled training sessions.

![Image](image.jpg)

**Figure 8. Aannette Ramstrand, Teacher of English in the CFL Learning Centre, Soderhamn, Sweden, using the iLike software in her English class teaching English as a foreign language to young adults.**

**Presentations and Workshops**

The Swedish partners have also made numerous demonstrations and organized workshops regarding the iLike methodology and ways of using it in teaching English as a foreign language to other schools and institutions in the area of Soderhamn and beyond.

*15th April 2014*
CFL organized an instructor training at the Distance Course Education at Hälsingevux, Sweden, to get Secondary School teachers acquainted with the iLike software and methodology.

17th June 2014
Organized an instructor training at Stenberga, where Lower Secondary school teachers had the opportunity to attend.

26th September 2014
Instructor training in Begvik, Sweden, with teachers Ulla Ångman and Maria Jernberg, where iLike was presented and demonstrated.

1st October 2014
Another instructor training session for Lower Secondary School teachers in Stenberga Soderhamn, with Maria Amlen and Pär Gustafsson.

28th October 2014
CFL organized an instructor training seminar for Secondary and High School teachers, CFL teachers and Staff and gymansiet at its venue in Soderhamn, Sweden.

12th November 2014
An instructor training seminar took place in Kilafors Secondary School, Sweden.

23rd January & 13th February 2014
Two iLike presentations took place in Uppsala, with teachers of different schools present, where the background and the methodology was presented together with a full case and there was discussion with the participants.

20th March 2014

There was workshop at the University of Uppsala, with Secondary School teachers attending. The software and the methodology were presented and there was hands-on testing of iLike.

10th September 2014

There was also a workshop at the University of Glasgow for teachers and ICT staff, where the software, its methodology and examples of cases were presented.

Presentations of the software and workshops will continue in different areas in Sweden and possibly in some universities outside the country as well.

5.3 SERBIA

OSNOVNA SKOLA “DRINKA PAVLOVIC” (OS), BELGRADE, SERBIA

The iLike software has been extensively tested in the English language learning classes of “Drinka Pavlovic”, an elementary school in Serbia. “Drinka Pavlovic” is a very big elementary school in the heart of Belgrade. It has a big number of students and a total of 60 teachers. The school has participated in various other projects in the past, which gave it the experience and expertise in its field to take part, use and test the iLike services in a primary school setting. Its central location, its many years of operation and its use of modern equipment, modern teaching aids and materials contributed in making it an ideal venue for testing the new, innovative and cutting edge technology in education that iLike proposes.

SEMINARS AND WORKSHOPS

Apart from using the iLike software in their classes, the teachers of the school have organized various training seminars to share experiences on its use with colleagues from other schools in Belgrade and in other towns in Serbia as well.

13th November 2013

"Drinka Pavlovic", for the purpose of dissemination of the project, has presented its activities in different schools in Belgrade (“Dragan Kovacevic”, “Mihailo Petrović Alas” and “Vuk Karadzic”), where both teachers and parents attended, and a partnership has been established with two schools “Gornji Milanovac”.

16th-17th April 2013

iLike was also presented in Science Days in Drinka Pavlovic school itself, which was an event that took place in 2013 and will also take place at the end of 2014, where iLike will be presented once more. The English teacher, Kristina Radojicic, presented the project iLike and gave a brief training on using the system for twenty teachers and schools. The presentation was attended by English language teachers, teachers of other subjects, several parents, as well as the director. Milena Podolšak, project associate, explained to those
present the methodology and compared the possibilities of using iLike to make a
parallel with the traditional teaching of English.

9th April 2014

In cooperation with HiST, the school organized a workshop for Secondary School
teachers in Belgrade, where iLike was extensively presented.

CONFERENCES
The school presented iLike in Tempus Conference (5th December 2012) and ISDET (24th-
25th October 2013).

5.4 GREECE

UNIVERSITY OF THESSALY (UTH), VOLOS, GREECE

The University of Thessaly is the only public higher education institution in central Greece,
and it has many departments and thousands of undergraduate and graduate students,
together with teaching, technical and administrative staff. Its focal position in the local
community allows it to enjoy close collaboration with many professional organizations and
the school community not only of Volos, but also of the surrounding towns and
municipalities. Its access and affiliation to a wide variety of stakeholders facilitate its
possibilities for both internal and external adoption of the project outcomes.

The iLike software was extensively used and presented in Greece in different venues,
including the University of Thessaly (UTH), private and public schools, Volos Public
Vocational Training Institute, the Life Long Learning Center of the Municipality of Volos and
the Vocational Training Centre of University of Thessaly. UTH organized and monitored all
the uses of the iLike software and its presentations and workshops. The University of
Thessaly organized numerous presentations to many high schools in Volos and the
surrounding area, presentations in conferences and media releases. There were
presentations to students, teachers and parents of many schools in the area, which are
mentioned in detail in the next section.

In addition to using the actual project outcomes for educational purposes, the University
aims to exploit project outcomes by leveraging the know-how developed during the iLike
project on technology-enhanced learning design towards the development of basic,
transversal skills among primary, secondary, and higher education students through the
pursuit of spin-off applied research activities.

With the purpose of making project outcomes widely available to primary and secondary
education, the University of Thessaly plans to promote and make widely available the iLike
software tools for use as complementary learning content in primary and secondary
education.
USE OF iLIKE IN TECHNOLOGY IN EDUCATION COURSE IN UTH, FALL 2013, FALL 2014 SEMESTER

The iLike software was used as an example of good practices in the use of technology in education and an example of software design in the course “Technology in Education”, which is an optional course taught to 4th year university students studying at the University of Thessaly. The software was used in the specific course in the fall semester in 2013 and in the fall semester of 2014, with 80 students attending the first course and 130 students attending the second one. The Department of Foreign Language Studies in the University has also been contacted with the aim of their using the iLike software in their courses teaching English terminology to university students.

PRESENTATIONS AND WORKSHOPS

Apart from testing it, using it and presenting it in different schools around the area, the University of Thessaly promoted iLike through many workshops. Three major workshops were organized: Educational Technologies workshop, Serious Games in Education workshop and Engineering Education workshop.

Educational Technologies Event: 24th October 2012

“Educational Technologies” was a formal dissemination event organized by UTH and CERETETH at the university premises, primarily targeting educators but also anybody who was interested in recent developments in education, with technological innovation as a focal point. 250 people participated in the event, many of whom were Secondary and High School teachers, academia and policy makers. It was promoted through Primary Education Authorities in Magnesia and the prefecture. Its aim was to raise awareness among teachers, policy makers, higher education students, and the general public on the learning benefits of serious games. The audience had the opportunity to get exposed to iLike project objectives, planned activities, expected outcomes, and implementation plan.
Engineering Education Event: 21st December 2012

“Engineering Education” workshop was organized by UTH with the aim of dissemination, awareness raising and exploitation purposes in Volos, Greece. It was promoted through Secondary Education administrative authorities in Magnesia. It was attended by 70 people, Secondary Education teachers, policy makers, academics and the general public, with great interest in the presentations. The participants had the opportunity to see the iLike software, talk about it and provide feedback from their point of view. The UTH speakers presented in detail the application, its rationale, aims and use to all the individuals who were present at the event.

Digital Innovation in Life Long Learning Event: 28th May 2013

“Digital Innovation in Life Long Learning” was another event organized by UTH, with 60 people participating, many of them Secondary School teachers and educational policy makers. The workshop was also promoted through Primary Education Authorities in Magnesia and the prefecture. The event, which targeted teachers of all levels, mainly those involved in Secondary Education but also the general public, aimed to raise awareness about the challenges involved in lifelong learning nowadays and how technology and its possible uses in a learning environment can be deployed to facilitate it. The iLike software, aims and ways to use it in a foreign language classroom were presented to all the participants, who had the opportunity to discuss any relevant issues they raised concerning its use.

Game-based and Mobile Learning Event: 10th October 2014

“Game-based and Mobile Learning” event was organized by UTH in collaboration with the Institute for Research and Development Thessaly, the Center for Development Thessaly (AKETH) and the 2nd Vocational High School of Karditsa on the promotion of game-based and mobile learning. It was attended by 85 individuals, mostly educators in secondary or vocational education, educational administrators and school consults. The iLike software and its uses were presented to language teachers and educators. There were dedicated iLike presentations, while teachers, policy makers, students and the general public were among the audience. The response to the iLike software was enthusiastic and the English language teachers that were present in the audience wanted to know more about its use in their subject. A detailed discussion about the iLike possible uses in the foreign language classroom ensued, with the participants asking for more details regarding its use and possible ways of integrating the iLike services in teaching English as a foreign language in Greek public school settings.
More workshops are going to be organized in the near future, targeting teachers, policy makers, students, engineers and the general public.

PRESENTATIONS TO PRIMARY AND JUNIOR HIGH SCHOOLS IN VOLOS AND THE SURROUNDING AREAS
4th-5th February 2013

iLike was presented to secondary school teachers and learners of the 1st Gymnasium (Lower High School) of Volos, with 65 learners and teachers attending.

7th March 2013

There was an iLike presentation to the 2nd Gymnasium of Tyrnavos, with 45 people attending, Secondary School students and teachers.
4th April 2013

The iLike software was presented to the 2nd Vocational High School of Nea Ionia, Volos, with 50 learners and their teachers attending the event.

26th February 2014

iLike was presented to the students of the 12th Primary School of Volos and their parents.
A presentation of iLike was organized and successfully took place, for the teachers and students of the 10th Gymnasium of Volos, with 49 people attending.

14th March 2014
There was an iLike presentation and a demo to learners of the 2nd Gymnasium of Aitoliko, with 30 Secondary School learners and their 2 teachers present at the event. Not only educators and students, but also parents were informed about the software and its many and varied uses for English language instruction.

21st October 2014
A Swedish school, Sundarne, with 22 students and 2 teachers, visited Volos and the iLike software was presented to them.

![Figure 19. Swedish students and teachers during the demonstration of iLike in Volos, Greece.]

**MEDIA RELEASES**

20th October 2012

Press release sent to 22 media outlets on the “Educational Technologies” event.

24th May 2013

UTH issued a press release on “Digital Innovation in Life Long Learning” event to 22 media outlets.

24th May 2013

There was a newspaper article on Magnesia newspaper, which has a circulation of 2.000, on the “Digital Innovation in Life Long Learning” event.

March 2014

There were links to the iLike project on UTH research programs page and on the Department of Electrical and Computer Engineering research programs page, aimed at academia, industry and the general public.

29th May 2014

A local newspaper, Taxydromos, with a circulation of 4.000, published an article on iLike “Digital Innovation in Life Long Learning” event.

11th-15th March 2013

iLike promotion to Qatar Computing Research Institute aimed at researchers.

30th January 2014

A press release on iLike was sent to 22 media outlets in Greece, aimed at the general public.

February 2014

There was an interview on the iLike project given to the Athens 98.4 national radio station.
31st January 2014

An article on the iLike software and its uses was published at
http://xenesglosses.eu/2014/01/mathisi-se-kinisi-gia-xenes-glosses/

January 2014

An interview regarding iLike was given to Astra local TV channel, aimed at the general public.

February 2014

iLike was presented in Esos.gr news outlet, which is related to educational themes in Greece, Taxydromos newspaper facebook page and Elme-chanion.gr portal of the teacher association of Crete.

CONFERENCES
28th March 2014

The software was presented in an invite keynote speech in the Panhellenic conference of Secondary School Teachers in Informatics, with a 100 people participating, where the portal was promoted in a dedicated workshop.
The University of Thessaly discussed the adoption of the iLike software with municipal educational administrative authorities in the town of Volos. There have been discussions about its use in the context of classes of Volos Municipal Vocational Institute, the Municipality of Volos Life Long Learning Center and the Vocational Training Center of University of Thessaly. There have been continuous contacts with the directors of studies in the aforementioned institutions and the vice mayor of the Life Long Learning Center.

**The Municipality of Volos Life Long Learning Center**

iLike was presented in various occasions to the coordinators of learning Giota Rapti and Dimitris Christodoulou at the Municipality of Volos Life Long Learning Center. There have
been continuous contacts with the aim of integrating the iLike services in their courses in December 2014, when their courses will resume.

**Municipal Vocational Institute of Volos**

There was an iLike presentation and demonstration to the Municipal Vocational Institute of Volos directors, Philippos Karagiannis and Leta Argirakou and there have been many talks regarding its future integration into their curriculum in the next semester.

**The Vocational Training Centre of the University of Thessaly**

There were talks with the director of studies of The Vocational Training Center of University of Thessaly, Georgios Anastasiou, concerning the adoption of the iLike services in their classes.

**Presentations and Contacts with Private School Owners in Magnesia 24th October 2014**

There was a presentation and a demo of iLike to the President of the Panhellenic Society of Foreign Language Centers-Magnesia Division, Constantinos Giavaras and an email description of the software promoted via email to all members of private language schools of the Panhellenic Society of Foreign Language Centers-Magnesia Division, which has 80 schools listed as members.

**Use in Public Schools**

5th Primary School of Volos

The iLike software was used in the 5th Primary School of Volos, in June 2013, with two groups of the 6th class and in November 2014 and will be used again in the same school during the school year 2014-15. Apart from using it at the school, the teacher, Georgia Maneta, used iLike in private classes outside the school and will use the iLike during the next school year in the private sector as well.

3rd Junior High School of Volos

The iLike software was used in the English lesson of the first class of the 3rd Junior High School of Volos and its use was explained to both the English teacher and the ICT teachers in many occasions before it was actually used in the classroom.

1st, 5th and 7th Junior High School of Volos

There have been many contacts with the aforementioned schools for future collaboration. The iLike software will be used in the 1st, the 5th and the 7th Junior High Schools of Volos, in an attempt to test it in a public school context with students of different levels and abilities, all in the age originally targeted in the project. The software will supplement the students’ English language lesson and relevant activities adjusted to level, interests and curriculum targets will be prepared and tested in all the aforementioned schools.

**Use in Private Schools**

**At Logou Hari School, Volos, Greece**

The iLike software was tried and tested on a regular basis on a private school in Volos which offers lessons in Greek and also has English as a foreign language classes. During the iLike project implementation, the school contributed towards the definition of the user
requirements for learners and teachers in terms of analytical as well as digital skill development. The school acted as a validation site for the proposed didactical models and learning activities and resources providing positive feedback on the acceptability and effectiveness of the methods in real-life settings. The school acted as the most regular testing venue of the iLike services. Marina Mogli, the English teacher, used iLike at least once a week (sometimes more often) during the school year 2013-2014 to implement her classes teaching English as a foreign language, so the students became really well acquainted with it and considered it an integral part of their lesson. The students were really excited with the program and offered insightful comments about its use and its relevance for their learning, thus contributing significantly to its evaluation.

The school aims to continue using the iLike software tools towards analytical skill development in the following school years among learners.

Figure 21. Students of the Logou Hari School, who have used iLike in their English class for the school year 2013-2014.
AT ItaLingua PRIVATE LANGUAGE SCHOOL, VOLOS, GREECE
iLike was also tested and used during the school year 2013-2014 in a private language school in Volos, ItaLingua Volos, to implement their classes for not only English and but also Italian as a foreign language. The school has students of all ages, including Junior and Senior High School students, but also many adults, attending its courses of English and Italian as foreign languages. The owner and teacher at the school, Spiros Kourias, contributed to the whole testing process with insightful comments.

6. EXTERNAL ADOPTION STRATEGY: LEARNING INITIATIVES OUTSIDE PARTNER ORGANIZATIONS
At a time when almost all students carry at least one technical device with them, be it their smart phone, their tablet or computer, it is essential not to ban new media from the classroom, but rather effectively integrate the possibilities that they bring along into teaching and learning. Thus, the demand for multimedia, interactive learning tools will continue to rise as the implementation of usable material into education is a prerequisite for better outcomes. Therefore, it should be stressed that the project should be presented and used in as many contexts and learning environments as possible, not only within partner institutions but also outside partner organizations.

Specifically in Greece, the iLike services and methods will be tested in three Junior High Schools in the town of Volos and include teachers that teach English.
They are the 1st, 3rd and 7th Public Junior High Schools of Volos, where students in all grades are taught English as a foreign language. In every class, the students are split in groups according to their level. So, each class is split in two groups, with students from less advanced and more advanced levels respectively. The software would have been used in the previous school year but permission from the Panhellenic School Network had to be obtained so iLike couldn’t be used in the school year 2013-2014 in those schools and its use will start in December 2014, as it has to be scheduled following the regular programme of the schools and their curriculum requirements. Teachers in Greek Junior High Schools have specific obligations to conduct evaluation activities every school year, which finish in the month of November, so they will implement the iLike software in their teaching from December onwards.

Except for its main target which is Secondary Education, the software was used in the sixth (the final class in Greek primary school) classes of the 5th Primary School of Volos, where their teacher, Gogo Maneta, used it with great success with the students of two classes of the 6th class, was really excited with the application and will continue its use in the school year 2014-2015. There are efforts being made and UTH has been making contacts with more Primary School in Volos and the surrounding areas so that there are more Primary Schools that are going to use iLike in their English language learning classes.

There will be presentations of the software in cooperation with PALSO (Panhellenic Federation of Language School Owners), especially in Volos and the surrounding towns, such as Larisa and Trikala.

Similar external adoption strategies have been organized by all the participants, and include more testing in various schools and institutions in many EU countries, more presentations in different venues and various other dissemination and exploitation activities, so that the project outcomes reach the widest professional and public sector possible.

7. POTENTIAL COMMERCIALIZATION

A number of stakeholder groups can be identified within the iLike target sector, namely primary and secondary education, that stand to gain directly or indirectly from the project methodologies, tools, and good practices. Private schools which teach English as a foreign language or use English as the language of instruction also stand to benefit from using the iLike services. Additionally, private schools teaching any other foreign language, can benefit from it. Institutions which teach immigrants and refugees the language of their host country can also implement the software in the lessons and existing curricula.

Direct stakeholders are the school learners and teachers who are the ultimate beneficiaries of iLike objectives, and specifically the design and implementation of didactical frameworks, tools, and learning activities. On the other hand, a number of other groups such as policy makers, administrators, teacher-training organizations, the educational software applications industry, didactical process and curricula designers, parents and the general public will benefit indirectly from the project outcomes.
8. CONCLUSIONS AND DISCUSSION OF FUTURE AIMS

This section presented an exploitation strategy for promoting the adoption of iLike outcomes by the targeted stakeholder community of secondary education and the sustainability of the project activities post project completion.

The strategy involves three main aspects:

- the internal adoption of iLike outcomes by consortium partners through the identifications of specific points in organizational objectives and visions that can be strengthened through project outcomes and related activities. These activities are dependent on the mission of each partner whether this is to deliver educational services, to develop learning tools, or to enhance learning design. iLike outcomes already enrich teaching and learning in primary, secondary, and higher education through direct deployment of the tools in related courses at partner sites
- the external adoption of iLike outcomes through targeted contacts towards educational authorities at the regional and national levels in countries represented in the consortium. External adoption aims at promoting the learning benefits of the proposed methodologies and digital tools, facilitating wide deployment in classrooms through the formal evaluation of the software by ministries and educational content development authorities, and building capacity among authorities and individuals that have the potential to further promote project outcomes within the primary and secondary education sectors
- the identification of additional learning scenarios in which the iLike methodologies can be applied for enhancing learning experiences and related adaptations of the iLike learning framework towards addressing specific educational objectives in wider sectors; to this end, partners are already active towards exploiting project outcomes in the context of wider learning initiatives in primary, secondary, vocational, and professional education either through funded applied research or through internal deployment of outcomes as part of everyday educational practices.

Exploitation activities are complemented by rigorous and targeted dissemination. Related project initiatives aim to present the iLike objectives, methodologies, tools, teaching support material, and other outcomes in a focused manner that best addresses specific interests of specific stakeholder groups, such as learners, teachers, learning process designers, policy makers, and the general public. To this end, a variety of dissemination channels have been and continue to be deployed for maximizing dissemination impact; channels include:

- newspaper articles in Greece, Sweden and Norway
- information material in printed and digital form
- conference publications that address the academic community and the industry
- workshops organized by project partners as well as events organized by others to which the iLike consortium was invited to present
- numerous face-to-face discussions with teachers, academia, and industry that promote project activities.

Consortium partners aim to continue being active in the exploitation and dissemination of iLike objectives and outcomes post-project completion in the context of on-going R&D
activities and educational practices. Outcomes, including the software tools, are freely available to local, regional, national, and international authorities, teachers, and learners with the objective of promoting in a value-adding manner iLike findings and achievements as widely as possible for the benefit of the stakeholder secondary as well as primary education community.
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