



# InTeMIS

## GUIDELINES FOR IMPLEMENTING BLENDED LEARNING ENVIRONMENTS

INnovative TEaching Method for an Inclusive School

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[www.intemis-project.eu](http://www.intemis-project.eu)



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## THE IN.TE.M.I.S PROJECT

In.Te.M.I.S. - INnovative TEaching Method for an Inclusive School, is a two-year European project (2016-2018) implemented by a Consortium made of seven European organizations, and Coordinated by the Italian VET School "IIS Da Vinci" of Piazza Armerina.

It was funded by the European Commission within the Erasmus+ Programme, Key Action 2 - Strategic Partnership for Cooperation and Exchange of Good Practices.

The project aims at introducing in VET Schools and Centres the ICT based 'Flipped Learning', an innovative and student-centred pedagogical approach, in order to contribute to the reduction of early school leaving, to the decrease the number of under-skilled teenagers and support the modernization of education and training systems.

The project idea originates from the willingness to give response to the need of the professionals operating in VET schools all over Europe, that in their working environments are facing problems related to: the difficulty in keeping up-to-date with regards to innovation in the teaching and learning methods, the use of ICTs and the increasing phenomenon of the early school leaving. Furthermore, in Italy, the level of English knowledge of VET students is – in average- lower than in other European Countries.

As proven by many studies and researches, the use of innovative and ICT-based tools for teaching and learning could be a valid support to increase the appeal of the study in all the students, contributing to the creation of more inclusive schools and learning environments and to the modernization of education and training systems.

In order to adopt and apply these new methodologies, it is essential to adequately prepare teachers both from the pedagogical and the technological point of view.

Thus, the objectives of the project are:

- to train VET teachers and trainers in the use of the most innovative teaching strategies
- to promote the implementation the Flipped Learning Methodology in VET schools and Centers specifically for English language learning
- to improve teacher and students digital literacy
- to promote the increasing of motivation in both students and teachers, enhancing their learning and teaching performance
- to contribute to the reduction of early school leaving and to the modernization of VET schools and centres

To achieve these objectives through the In.Te.M.I.S. project

the following activities have been realized:

- A comparative research on innovative education in Europe and on the needs of the VET teachers. The research is composed by two parts: one focusing on the adoption and implementation of new and ICT based methodologies and tools in VET schools in the Countries of the partnership, and another aimed at analyzing the needs of VET teachers, conducted in Italy
- Two joint staff training events for VET teachers and trainers held at European level, respectively on "Innovative teaching: pedagogical and technological aspects" in Spain and "Implementation and evaluation methods of the flipped classroom" in Greece
- Two blended mobilities of VET learners, carried out simultaneously to each training course for teachers, involved in the experimentation of activities with flipped method, cultural exchanges with foreign students improving their English language skills and the knowledge of customs and traditions of the hosting Countries
- Recollection and production on learning and teaching material for English learning
- Testing of the Flipped Learning Method in the classroom
- Production of the present product: the Guidelines for the implementation of blended learning environments



Students from Italy, Iceland & UK during the training in Greece

## THE IN.TE.M.I.S PROJECT CONSORTIUM

The Consortium of In.Te.M.I.S. is composed by seven European organizations set in Italy, Iceland, Portugal, Greece and Spain, all operating in the field of education and training, and involved in the project due to their specific competences in the field.

### I.I.S. "DA VINCI" - ITALY

Coordinator of the Consortium, it is an Italian public VET School located in Piazza Armerina, in Sicily. It provides Secondary VET education to more than 1.000 students aged aged between 14 and 18 years.

The school is located in a socially disadvantaged area, characterized by the high unemployment rate, and the socio-economica. This situation affects young people and students: social marginalization, low school performances and early school leaving are phenomena with which the school has to deal. This situation represents a challenge. The IIS "Da Vinci" pursues the provision of training and the inclusion of all its students through: curricular and extra-curricular activities aimed at enhancing social, intercultural, linguistic, digital and personal skills; traineeships at companies set in Italy and abroad; trainings and exchanges carried out thanks to the participation in transnational project in the framework of the Erasmus+ Programme.

### ESSENIA UETP - ITALY

ESSENIA UETP-University and Enterprise Training Partnership is an Italian organization born in 2005. It is based in Salerno (Southern Italy) and it is specialized in developing and implementing training programmes and courses as well as in offering career guidance services aimed at performing traineeship within Italian and European companies. It is one of the few Italian organizations awarded the "VET MOBILITY CHARTER" (n.2015-1-IT01-KA109-004902) by the Italian NA Erasmus+ INAPP (former ISFOL). Essenia's core activities are: Transnational Mobility and EU projects, Training, Career Guidance and Consulting. It carries out both training activities and European funded projects dealing with innovative teaching and learning methodologies.

### KEILIR - ICELAND

It is an educational institution founded in 2007 with the goal to advance and develop education in Iceland. Annually between 600-700 students attend courses and study paths at one of Keilir's four different schools: Aviation Academy, Health Academy, Institute of Technology and Preliminary Studies Programme.

The preliminary studies, offered both distance and on site learning, is aimed specifically at students seeking to enter universities after dropping out of the formal secondary school system. Since 2008 the study path has graduated over 1400 individuals with over 85% of the subsequently enrolling in university education.

Keilir has for the last few years successfully implemented and incorporated flipped learning methodologies in the education of young adults in secondary education, with the majority of study lines and courses now offered with flipped learning. Furthermore, Keilir has invited teachers from all over Iceland to participate in conferences and workshops on flipped learning for the past few years as well as taking the initiative to create educational material for primary schools for free use in flipped learning initiatives.

## TROLLASKAGI COMPREHENSIVE COLLEGE - ICELAND

The Tröllaskagi School began operating in the autumn of 2010. It functions under Iceland's newest legislation for education and provides more flexibility in study options. It is an innovative schools based on the use of digital tools and new methods, such as Flipped Learning. The school offers an ambitious program with diverse teaching methods that focus on student performance and independence. The school's objective is to prepare students (typically ages 16-20) for university study. This is accomplished by having them complete their work through an efficient schedule that focuses on their needs in three major areas: learning under teacher supervision, self-study with access to learning materials, and distance learning.

Self-management is the core virtue of this approach, as the power to learn is placed primarily in the students' hands. The bulk of the learning materials exist in the online teaching program of the school, "Moodle." This includes all instructions and details of the assignments, along with instructions on how to access reading materials that are not in textbooks or in the online teaching program.

## INERCIA DIGITAL - SPAIN

It is a young Andalusian company, established in 2012, with outlets Europeanwide. Despite being a small size company, it has international ambition and appealing experience. Its main target is to contribute with innovative solutions to both e-business and web entrepreneurship skills for SMEs and entrepreneurs (elearning on e-business).

Inercia Digital offers E-Learning solutions contextualized to the needs of our customers in an environment of collaboration and respect for the optimization of the professional performance and training. This is supported by a Pedagogical and Technological Know-How that contributes to the development of a creative, educational process. In this sense, this company offers some programmes and online courses accesible through its Virtual Campus, which has been approved by the Regional Government of Andalusia as a Virtual Training Centre for Employnment, besides the award of Inercia Digital as a Collaborative Entity in Training for Employnment in the discipline of e-learning. It is also accredited by the Tripartite Foundation (Government of Spain) to provide ongoing training for companies and workers.

## ACTION SYNERGY - GREECE

It is an ICT R&D, training and knowledge-based applications organization which is actively involved in the development of education technologies, training methodologies and the development of e-learning training courses. Action Synergy S.A. disposes a long experience in the management and coordination of European Projects. One main domain, in which Action Synergy is working, is in the field of innovation in education using drama techniques, ICT based training etc. Since its foundation in 1987 the organisation has participated in a considerable number of EU educational projects, such as COMETT, PETRA, SOCRATES, LEONARDO DA VINCI, ARTICLE 6, ADAPT, TEMPUS, PHARE,-Distance learning.Action Synergy's S.A. key areas of expertise include: Development of learning methodologies; Development of educational technologies; Development of courses and modules making use of innovative methodologies such as open/flexible learning methodologies, e-learning, learning needs analysis; development of professional profiles and lists of skills and competencies; development of synergies at local, national and transnational level.



## PORTUCALENSE UNIVERSITY INFANTE D. HENRIQUE - PORTUGAL

It is a private higher education institution, created in June of 1986, located in Porto. UPT is organized across four Departments: Law, Psychology and Education, Tourism, heritage and culture and 4) Economy, management and computing; and teaches 1st, 2nd and 3rd cycle courses and post graduate courses, structured according to the Bologna Process. UPT aims to be a model in higher education, taking advantage of its inter-departmental synergies. In addition to acquiring theoretical knowledge, students have opportunities to develop practical work and research projects, developing a whole range of skills that will prepare them for jobs in future careers and for life in a competitive global society. UPT has about 2000 Students. The employability rate depends on the area of studies; in ICT area there is 100% of employability. It is also UPT's priority to promote and maintain relationships with overseas universities with which we have partnerships, and to extend further our network both in Europe and other countries. The university is very active in establishing partnerships with the enterprises in the region. This collaboration is established mainly through Internships in companies which are offered to students as part of their curriculum in most of the courses.



Some of the members of our partnership in Porto, Portugal during a transnational meeting



## FLIPPED LEARNING

There is no single model for the Flipped Learning. It is possible for most teachers to use this method in any course by thinking: "What is the best use of your face to face time". By setting focus on what is most important for teachers to spend time with their students, the teacher can find out which topics and lectures the students could learn online, from videos, books or by other methods.

The most common way to practice Flipped Learning is:

- The teacher makes prerecorded lectures and shares the videos online with his students.
- The students watch the lecture as a homework and get prepared for working with the material in class.
- The teacher prepares projects for the students to work on in class, in some groups it is important to have different projects for students that work in different pace
- The students can work together in small or big groups and help each other
- The students can work in their own pace, some might cover the material quickly and are able to get even deeper into the content while other students spend long time just to understand the basics
- The teacher can help the students, answer questions and guide them how to find more information on the content

The Flipped Learning method is good for teachers that prefer to have more time with their students in class. To make it work the teacher has to plan the whole course ahead; set up the structure for the whole semester, put in recording of all the lectures and prepare all projects for training the content. Then the students can take responsibility of their own study at their own pace throughout the course.

### 1. Why should you flip your classroom?

By implementing flipped learning, students have an equal opportunity to receive the material. The focus is on individual learning where the student can watch and listen whenever they want, as often as they want and rewind and fast forward if they want. This method is also good for students who have learning difficulties. Parents can watch the video with the student and support them if needed. The individual learning can also encourage social interaction among student, making it easier for them to learn from each other. Today most of our students grew up with Internet access and all kinds of digital resources, and with using flipped learning we are speaking their language.

Flipping also allows teachers to know their students better because of increased teacher - student interaction in class.

## 2. Plan ahead and prepare

If we think about a normal teacher, that has used traditional methods throughout the years and is about to flip his classroom, he has to prepare in few different ways.

To start with it is fundamental for teachers to prepare mentally. If the teacher gets order from above that he should change his teaching, it is important that the teacher also feels that he gets support from his school managers and coworkers.

If the teacher makes the decision himself, it is important for him to start slowly and seek information on how other teachers have done flipping in similar situations. It's wise to choose well the topics that he wants to flip and start figuring out what would be the best way for him as a teacher to do this, according to the content of his class, his students and the circumstances he's working with. It's also recommended for new teachers to find a mentor to talk with, that could be a co worker that he trusts or someone from another school that is doing similar experiences. Being a good teacher requires good self esteem and humility, not being afraid of making mistakes - learn from them.

It's challenging for teachers to change their teaching methods, and the flipped learning theory is quite revolutionary. So theoretically the teacher might have to rethink his whole approach on delivering the content and how he acts in the classroom. The teacher has to believe in the new methods and remember not to give up by first mistake. To develop new perspective on teaching methods it is helpful to have someone to talk to and discuss teaching theories.

Moving from traditional teaching and start working with flipped learning methods, requires time to prepare all the practical aspects. To give students the space to take responsibility themselves, good planning is essential. The whole course must be planned ahead by the teacher; reading material defined, prerecorded lectures ready to view, other material to support the topics and all student projects ready for them to work on with defined deadlines. The practical preparation gives the students better feeling for what is expected from them, what to do and when. The students can take control over their own study and the teacher gets more time to answer questions and talk to each and every student. The practical preparation can be a huge job at the beginning but already next time the teacher teaches the same course, it's a lot easier. Usually some of the course planning, recordings and projects can be reused, but a teacher that is trying this method for first time, should always be prepared to make changes both during and after each course.

A big part of this method, is to face the fact that you will maybe not find the one right solution, but an ambitious teacher will be able to improve constantly if he is prepared to learn from things that could be better. It is important that teachers get time to reflect on how things are going and listen to feedback from students, parents and coworkers.

### 3. Produce the material

Flipped learning is not all about the technique, even though the technique can be an important parameter in the teaching method.

To prepare the course like described above, the technique can sometimes be a barrier. Many schools use online teaching systems, such as moodle or other platforms where teacher can share for example texts, videos, links, tests and projects to students. In that case it is easy for teachers to make a complete course set up, so the course plan gets visual for the students. If the teacher does not have access to an online teaching system, it is possible to use more simple solutions to share contents with the students, such as google docs or simply youtube. It is important to not let the technique stop the development of new teaching methods, there is always a solution.

Teachers that want to make pre recorded lectures, can do it in many ways - both simple and more advanced. The teacher can start with simply using PowerPoint where he can record his voice while scrolling through the slides. Lectures can also be recorded by many different apps on a simple tablet, for eksempel iPad. The more advanced way is to use more complicated software, such as TechSmith screen recording, video editing and hosting solutions.

In many courses the teacher is able to find supporting material online. For example in mathematics it's possible to find a lot of supporting material, tutorials and explanations that can help students to understand. In that case the teacher would not be forced to record his own lectures, he could just pick the best online recordings for his students and guide them how to use it.

### 4. Provide the students with access

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## 5. Watch the lessons at home

Since the teacher's role will be changed, the students role will be different as well. To get the best out of this, it is important to teach the students to work in this environment. Explain their responsibility, show them how to listen to a pre recorded lecture and take notes, like they were in a traditional lecture in the classroom. If the students are used to traditional teaching methods, it will take them a while to understand how to behave in this new classroom, but as soon as they understand the concept and get the freedom to take control of their own study, they will realize that they do not want to go back to traditional teaching.

## 6. Resolve issues and questions that arise

Now that you have learned how to create and share an online instructional video, the first half of your flip is complete. The next step is to develop learning activities to fill your newly found class time. Implement your in-class activity plan by providing students clear directions and access to the materials they need to complete the in-class activity. Keep a close eye on the timeline you developed to keep students on task. End the class by communicating the next steps students need to take after class.

## 7. Deepen the knowledge

The teacher's role in the classroom will be different while using flipped learning. Maybe the biggest challenge for an experienced traditional teacher is to give the classroom back to the students, not talk all the time and take control over every movement in the room. To let the students take responsibility of their own study with the teacher as a guide on the side. To make this happen, the teacher has to have everything well prepared, and be ready with effective projects that focus on the main essence of the course each time.

## Implementing flipped learning

The concept of flipped learning has emerged as a means of using technology, not only to supplement traditional education, but to qualitatively transform the way that we conduct education. The Flipped Learning Network defines flipped learning specifically as,

“... a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter.”

As helpful as this definition is for pointing out some of the elements of flipped learning, it is somewhat confusing in its reference to flipped learning as a pedagogical approach. In fact, what emerged from the FLiP project, is that flipped learning cannot be described as a pedagogical approach, but rather a way to organise instruction and learning activities to provide instructors with flexibility to implement a range of pedagogical strategies.

By shifting direct instruction from the shared learning space, i.e. usually a classroom, to the learners' private spaces, i.e. wherever learners work individually, instructors are afforded greater latitude to engage learners in activities that build on a range of proven effective pedagogical approaches, such as collaborative learning, problem-based learning, integrative learning and any number of hybrids that instructors might formulate. And indeed, the instructors and schools that were involved in the FLiP project demonstrated clearly that this is what happens when flipped learning is implemented; learning in the shared space becomes more learner-centered and instructors use the flexibility afforded by flipping to focus on individual learners' needs.

Rather than describing flipped learning as a specific approach or strategy, the FLiP project revealed that it is better described in terms of the principles and values that make it possible for instructors to flip their learning environments. How these principles and values inform the flipping process is influenced by the environment in which the instructor is working, including social conditions and norms, organisational culture, and regulative frameworks. Because of this, it is very difficult to point to specific examples that definitively demonstrate what flipped learning is. More useful, is to look at flipped learning as a goal-oriented initiative that affords any number of pathways towards a set of well defined outcomes. Among the shared anticipated outcomes of flipped learning that emerged in the FLiP project were:

| OUTCOME                                | DESCRIPTION   |
|--|---|
| LEARNER-CENTERED ENVIRONMENT           | Learners take control of their own learning through the use of recorded direct instruction and increased freedom within the shared learning environment.<br><br>Instructors' attention is directed toward individual learners and their needs rather than the group as a whole. |
| HETEROGENY OF PEDOGOGICAL APPROACHES   | Instructors incorporate a range of pedagogical approaches to meet individual learners' needs.   |
| EFFECTIVE USE OF LEARNING TECHNOLOGIES | Learning technologies are incorporated in instructional activities in shared and private spaces based on learners' preferences or needs.  |
| FLEXIBLE TIME MANAGEMENT               | Shared space is fluid allowing learners and instructors to organise time to meet individual needs.  |
| FORMATIVE ASSESSMENT                   | Instructors are more aware of individual learners' needs and, thus, better able to steer them toward suitable learning pathways.  |

From the FLiP project we have learned that flipped learning centres around the strategic use of technology to allow instructors to make the most effective use of the time that they have with their learners. When addressing broad social contexts, such as was done in the FLiP project, any definition more rigid than this runs the risk of constricting the potential that a flipped learning approach has to affect change in learning environments. The many cases that were included in the FLiP project demonstrate that in flipped learning implementations, the nature of the expected outcome and the pathway towards it can differ significantly from one context to another, depending on social and organisational context, school level, learners needs or anticipated learning outcomes. This affords considerable flexibility in how flipped learning is implemented in schools. When a decision has been made to implement flipped learning in a learning environment, there are few predeterminable criteria that can be applied to all possible contexts. The success or failure of implementing flipped learning is instead determined according to the goals set by the instructors and organizations involved. A reasonable implementation strategy needs to be formulated in accordance with social and organizational contexts. Measurable goals must be defined, along with evaluation criteria, that clearly demonstrate how implementation is adequately addressing needs of learners, instructors, organizations, and surrounding communities.

## STATISTICS & SURVEY

Within the 'IN.TE.M.IS.' project, a survey on the innovative didactic and the needs of teachers and students in Italy has been carried out (April 2016), as well as a desk analysis of the state of the art in the Country of the Partnership on this topic. The Research including the Survey (available in English and in Italian) can be downloaded for free at: <https://www.intemis-project.eu/results>.

In the next paragraphs, just the main data related to Flipped method emerged from the survey will be presented in a nutshell, and an outline of the application of this method in the Countries of IN.TE.M.IS. project will be provided.

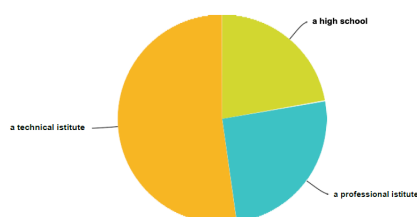
To have an overview of the Italian situation and to identify the needs related to Italy, a survey was sent to 1.779 secondary schools: high schools (279), technical schools (891) and Vocational Education Schools (609). The questionnaire was made of 33 questions, and the answer were anonymous.

Ninety teachers from just as many Institutes participated in the research: 20 from high schools, 47 from technical ones and 23 from vocational schools.

**Q3 The school where you teach is**

**Answers: 90**

**Skipped question: 0**

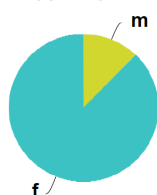


As for the gender of the respondents, they were 79 females and 11 males:

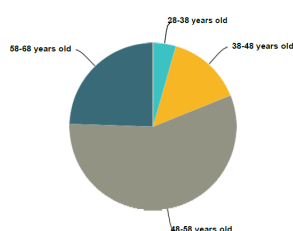
**Q1 Sex**

**Answers: 90**

**Skipped question: 0**



The 56,67 % of them was aged between 48 and 58, the 24,4% between 58 and 68, the 14,44% between 38 and 48, the 4,44% between 28 and 38.



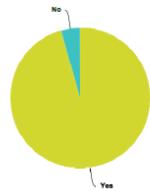


The results of the survey have shown that the 95.56% of the respondents have felt the need to update their competences attending training courses in the last five years.

**Q8 Did you take part in trainings/master/projects over the last five years for educational updates?**

Answers: 90

Skipped question: 0



It emerges that innovative teaching methods and ITCs are subjects on which, respectively the 72,98% and the 64,08% of teachers have been attending courses, as the following list shows:

- innovative teaching methods (72,98%)
- foreign languages (69.42%)
- ICTs (64.08%)
- inclusive learning environments (44.5%),
- project planning, most of all in European project planning (28%)

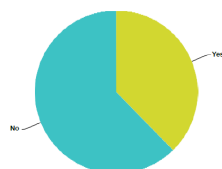
Seventy out of ninety respondents, aware of the continuous changes in the world of education and of the necessity to be adequately prepared, stated that they will continue attending training courses in the next years.

According to the 62,30% of the respondents, the teaching methodologies used in the schools cannot satisfy education and training needs of the learners.

**Q16 Do you think that the methods used at school can satisfy education and training needs of the learner?**

Answers: 61

Skipped question: 29

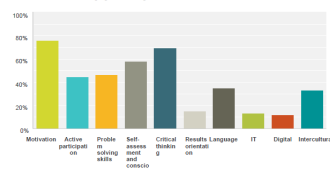


Among the skills that teachers think their students lack the most there are: motivation (74,41%), critical thinking (68,85%), self-assessment and consciousness (57,38%).

**Q17 Which of the following attitudes are generally less developed in learners? (Multiple answers allowed).**

Answers: 61

Skipped question: 29

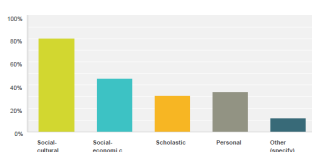


In the opinion of the learners, the causes that negatively affect the training of the learners are mainly socio-cultural (80.33%) and socio-economic (45.90%), a high percentage is also found in personal motivations (34,43%).

**Q18 Which of the following are the main causes that have a negative impact on school and educational training of the learner in your school? (Multiple answer allowed).**

**Answers: 61**

**Skipped question: 29**



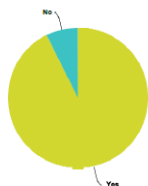
Speaking about Flipped Classroom methodology, from the analysis of the results of the survey it emerges that:

- the 92.59% of the respondents has heard about it

**Q12 Have you ever heard about the "Flipped classroom" method?**

**Answers: 81**

**Skipped question: 9**

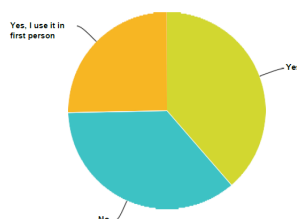


- the 38.67% declares that it is used within the school they work in and the 25.33% of them uses it in first person

**Q14 Is the "Flipped classroom" model used in your school?**

**Answers: 75**

**Skipped question: 15**

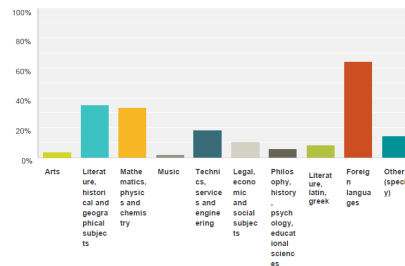


- it is used mainly for teaching: foreign languages (64.58%), history and geography (35.42%) and STEM subjects (33.33%)

**Q15 In which subject is the  
"Flipped classroom" model used  
in your school?**

**Answers: 48**

**Skipped question: 42**



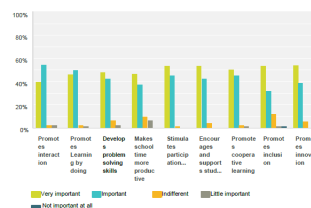
According to the opinion of the teachers interviewed, the Flipping method contributes to the following aspects, listed in order of the relevance according to their rating:

- promotion of innovation
- promotion of inclusion
- promotion of cooperation
- promotion of learning by doing method
- development of problem solving skills
- stimulation of participation and motivation in the learners
- promotion of the interaction

**Q13 Below are some strengths  
of the "Flipped classroom"  
model. Indicate the degree of  
importance.**

**Answers: 75**

**Skipped question: 15**



The teachers were also asked to indicate all the digital tools they use with students among a list, and it emerges that:

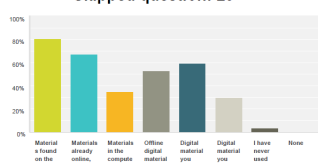
- 49 out of 61 use 'Material found on the internet' (80,33% of the votes)
- 41 out of 61 use 'Material already online, coming from institutional educational resources' (67,21% of the votes)

- 36 out of 61 use 'Digital material created by themselves' (59,02% of the votes)
- 32 out of 61 use 'Offline digital material like cd-rom' (52,46% of the votes)
- 21 out of 61 use 'Material found in the school computer or network like platforms and websites (34,43% of the votes)
- 18 out of 61 use 'Digital material created in cooperation with colleagues' (29,51% of the votes)
- 2 out of 61 have never used digital educational materials

**Q22 Which of the following types of digital educational tools did you use with kids? (Multiple answers allowed).**

Answers: 61

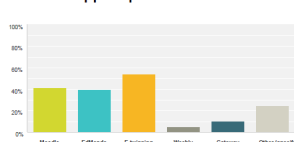
Skipped question: 29



**Q23 Among the platforms listed below, which are used by you or by your school? (Multiple answers allowed).**

Answers: 61

Skipped question: 29



Regarding the platforms, the most used by the interviewed are: E-twinning (54,10%), Moodle (40,98%), EdMondo (39,34%); Gateway (9,84%) Weebly (4,92%).

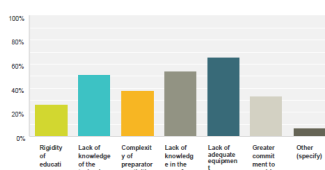
When given a list of obstacles related to the use of educational technology, the 61 respondents rated the item as follows:

- lack of adequate equipment (65.57% - 40 votes)
- lack of knowledge in the use of these tools (54, 10% - 33votes)
- lack of knowledge of them (50.82% - 31 votes)
- Complexity of preparatory activities (37,70% - 23 votes)
- Greater commitment to provide educational materials (32,79%- 20 votes)
- Rigidity in education and training systems is less influent (26,23%- 16 votes)

**Q25 Which are the possible obstacles related to the use of educational technology? (Multiple answers allowed).**

Answers: 61

Skipped question: 29



## Flipped Classroom in the Countries of the IN.TE.M.IS. Project

In Europe, Iceland is one of the Countries in which the Flipped Classroom methodology is more widespread. Distance learning has been an option for in Iceland from many years, and the use of technology in schools common, so the adoption of the Flipped classroom methodology there was relatively easy due to this substratum and for students it was easy to adapt to it.

As the abovementioned survey conducted within the IN.TE.M.IS. project confirms, flipping classroom methodology is spreading in Italy and the numbers of teachers and schools that are starting to adopt it is increasing. From the institutional point of view, a sort of approval, or rather a consideration by the Italian Education Ministry (MIUR), arrived with the first courses recognized by the Ministry of Education with the decree of 21st July 2014.

It was addressed to teachers of primary school, designed and created by the association Flipnet, whose founders, Maurizio Maglioni and Fabio Biscaro, are authors of the book "La classe capovolta. Innovare la didattica con la flipped classroom" ("The Flipped Classroom. Innovate the didactic through flipped classroom"), released in the same year.

In Spain flipped classroom methods is not widely known and spread yet, but there are many brave teachers that, individually, are adopted this methodology. a group of professors and primary and secondary education teachers created the website <http://www.theflippedclassroom.es/> where they share experiences and resources. Up to now flipped method is mainly used in private schools, where the budget for new technologies and the students' socioeconomic context is higher so learners can have easy access to a computer.

In Portugal 'Flipped Classroom' is a quite recent phenomenon, the methodology is already used in some schools and the Ministry of Educations begins to give some support for it (for example providing web resources) and there is some academic interest in this approach, either by master thesis on experiences, either by creating projects for its study (best practices) and implementation

In Greece the application of the method is at an early stage and its adoption is still demanded to the spontaneous initiative of single teachers and schools; for example, it has been carried out an experimentation of the application of the model of the flipped classroom as a complementary method to school distance education in junior high schools.



Partners of INTEMIS and students of Keilir school in Iceland

## GUIDELINES & TOOLS FOR FLIPPED LEARNING

### Introduction

Flipped learning is an education approach where the focus is on independent learning where students learn about given task before attending a class. Then prepared the student can focus on the understanding within the classroom through discussion with peers and teachers focusing on solving activities related to given subject.

### Guidelines

In Iceland there is a new curriculum since 2011 for the upper secondary schools based on legislation from 2008. This means decentralised curriculum where the schools decide on what subjects to teach and how much with very little restriction. The final exam is 200 credits (ects) where the legislation decides 45 in English, Icelandic and Math but a school decides how many credits in each. Furthermore in the publication of the curriculum in 2011 there is added 5-10 credits in a Nordic language and 13 credits in so called 3rd language usually German, French or Spanish. The rest is for each school to decide within the restriction of that students have to specialize in a field they decide themselves. They also have to finish given percentage of credits on 3 levels without subjects defined.

### Framework

At the secondary school Menntaskólinn á Tröllaskaga (MTR) we planned a framework for the education in our school in general but each teacher develops own teaching within that framework. Our framework is defined by teachers and leaders together and agreed on by all parties. We find it important to collaborate on how to plan education in general and have shared concept for the school, in our instance; innovation – creativity – daring. The concept is kept in mind in all work at school. Focus subjects are ICT, art (fine art, music, photography), sports, outdoor activities as well as core subjects.

It is important to have one LMS (Learning Management System) where the student has all the information on given subject so the focus is on the studies but not on finding what to do, what to read for example. The frame defines also the organization of week long modules. Assignments can have larger time but then divided into weeks for examples to have milestones on the way. Students have to deliver their assignments every week before Sunday evening and no exceptions allowed. Furthermore we decided to use only formative assessment but each teacher can decide how to create assignments for the evaluation.

Flipped teaching is the approach teachers decided upon and to keep the theory of multiple intelligences by Howard Gardner in mind.

As MTR is a rural school with too few students in the immediate surroundings to secure wide selection of subjects we add distance students to every class. The distance students get same information and same material as the students on location. Online communication with variety of software and tools gives them the same opportunity for discussion and questions as the local students.

## ICT in education

Teachers use around 150 different apps and software for communication, assignments, educational material and different approaches. Students are trained to use ICT in education in an effective way.

When students are well trained in the use of ICT in education it makes it easier to focus on different types of assignments and opens up broader scale of tools for students to learn. This is by no means needed for flipped teaching but makes it much more effective as students can approach their studies from different angles keeping their different intelligences in mind.

## Evaluation by students

Students respond on inner evaluation as being very satisfied. 80% state they feel good in their courses, 86% feel that the workload in their course is suitable. When asked about the week long modules 93% are happy about it. 98% of them like the formative assessment. 95% go through the feedback from the teacher to learn. As online material is used a lot although books as well we asked about how they liked the educational material and 82% where satisfied and 88% said they were interested in the material. 80% say they collaborate with the teacher when they do not understand the subject taught and 78% feel they are active in their work in the collaboration with other students.

(<https://www.mtr.is/static/files/Kennslukannanir/kennslukannanir-vor-17-nidursto-dur-fjarnemar.pdf>)



Partners of INTEMIS outside Keilir school in Iceland



## METHODS AND MATERIAL FOR IMPLEMENTATION OF BLENDED LEARNING ENVIRONMENTS

For years, students have grown accustomed to traditional methods of instruction where teachers fill the role of “sage on the stage,” imparting their wisdom during allotted class time then sending work home to reinforce learned concepts with little or no added support. As a result, students exist as mere listeners on the receiving end of a one-way communication process that does little to promote social interaction or encourage critical thought. In an effort to “flip” this trend of passive learning, teachers are now utilizing technology to implement a blended learning method that frees up class time for collaborative activities by shifting lectures out of the classroom and on to the internet. This method, known as a “flipped” classroom, combines the benefits of direct instruction and active learning to engage students in the educational process.

### Introduction

Pioneered by Jonathan Bergman and Aaron Sams, chemistry teachers at Woodland Park High in Colorado, “flipped” classrooms invert traditional teaching methods by delivering lectures online as “homework” and shifting engagement activities into the classroom. By making this “flip,” teachers are able to spend class time working directly with students to provide hands-on instruction and support.

### Advantages of a flipped classroom

- Active vs. passive learning - By moving lectures out of the classroom, students are able to become active participants in the learning process through learning activities delivered during the class period.
- Self-paced instruction - Because lectures are available online 24/7, students are able to learn at the pace that best suits them. They can stop and rewind explanations of concepts they find difficult and refer back to past lectures to review older content.
- Multiple learning styles - Different students learn in different ways, so by delivering instruction in multiple forms, the likelihood for engagement and retention is improved.
- Varied instruction - By offering instruction in multiple forms, students are more likely to remain motivated throughout the learning process.
- Social interaction - With added class time for collaborative activities, social interaction is promoted amongst the students and the student and teacher.
- 21st century preparation - Using technology for educational purposes at an early age develops technical skills and provides students with a working knowledge of 21st century tools and resources.

## Disadvantages of a flipped classroom

- Non-universal accessibility - For one reason or another, not all students are capable of accessing online instruction at home which can set them back in the learning process and limit their progress.
- Additional time/effort - Creating online lessons and coming up with engaging learning activities for an entire requires a significant amount of additional time and effort that some are not willing or able to commit.

## Getting started

In this instructional module, you will gain the conceptual knowledge, technical skills and pedagogical expertise necessary to deliver lessons via the internet and develop effective learning activities to promote creating thinking and social interaction during class time using available resources.

### Where do I start?

Flipping a class occurs in two steps. The first is to create and share a web-based video to deliver instruction (at home). The second step is to create learning activities to implement during class time. So, beginning with step one, "Creating an Online Instructional Video," you must first determine the type of delivery that is best suited for you and your course. To do so, ask yourself the following:

- How do I deliver instruction? Teachers deliver instruction in different ways. Some lecture as they flip through slides. Some instruct through animated gestures and movements. Some (mainly those in courses like chemistry, physics and math) use whiteboards to work through problems by hand. Some combine all three.
- How proficient am I with technology? Just as instruction varies, so does the technical skill of each instructor. For those with high technical proficiency, the options for creating an online video are much greater than those with less experience working with multimedia.
- What are my budget concerns?
- Budget can also come into play as both hardware and software often carry associated costs. While there are more than a handful of free tools available to accomplish what you want, having a few extra dollars to spend can provide you with a wider range of options.

## Types of online instruction

### Online videos

A wide range of instructional videos are currently available online (See Resources) from homemade videos to recorded lectures from top universities. Find a video that suits your lesson, share it with your students and you're done.

- Instructional Style Lecture
- Technical Skill Beginner
- Expected Cost \$ (Low)

### Narrated screencasts

Create a lesson directly from your computer with simple software that captures the events on your screen as you narrate. Ranging in complexity, screencasts offer a wide range of options to match your instructional approach.

- Instructional Style Various
- Technical Skill Intermediate
- Expected Cost \$ (Low) to \$\$ (Mid)

### Videotaped lectures

Setup your video camera, hit record and give your lesson. Though there are a few technical issues to iron out with editing, compression and upload, this approach has been the default method for many years and is fairly straightforward.

- Instructional Style Lecture
- Technical Skill Intermediate
- Expected Cost \$\$ (Mid) to \$\$\$ (High)

## Hardware & Software

What type of hardware do I need?

Depending on the type of instruction you selected, the hardware requirements will vary. However, regardless of the variation, two major components are required: a COMPUTER and BROADBAND INTERNET CONNECTION.

### ONLINE VIDEOS

- Computer (PC or Mac)
- Broadband Internet

### NARRATED SCREENCASTS

- Microphone (internal or external)
- Web cam - Optional
- Interactive Tablet - Optional
- Computer (PC or Mac)
- Broadband Internet

### VIDEOTAPED LECTURES

- Digital Video Camera
- Tripod - Optional
- Computer (PC or Mac)
- Broadband Internet

Can I use an iPad to create an online instructional video?

Yes. The Apple iPad offers a wide range of options to develop video-based instruction. Using the built-in video camera (iPad 2) along with the iMovie app, you can record lectures, edit and post them to YouTube. In addition, relatively inexpensive screencasting apps are also available via iTunes that allow you to capture the movements on your screen and record audio.

What type of software do I need?

#### ONLINE VIDEO (Free)

Using online video to deliver lessons does not require any additional software other than a standard internet browser (Firefox, Internet Explorer, Chrome, etc.) which should already be installed on your computer.

#### NARRATED SCREENCASTS (Basic - Free; Advanced - \$99+)

Creating a screencast that captures the movements on your screen along with an audio narrative requires just one piece of free, web-based software - Screenr.com. Screenr is platform independent (PC or Mac), easy to use and FREE, but does have a few minor limitations. The two most limiting are the lack of editing options and a five minute time limit.

For those that want more control over their video or expect to exceed the five minute limit, Camtasia is a trusted solution that allows you to both capture your screen movements and edit the video to your liking after it has been recorded. Camtasia Studio for PC is \$299 and Camtasia for Mac is \$99.

#### COMPARE SCREENR.COM

- Software Cost - Free
- Installation Required - None
- Video Editing Capability - No
- Capture Audio - Yes
- Display Webcam Video - Yes
- Capture Handwriting - Yes
- Time Limit - 5 minutes

#### COMPARE CAMTASIA

- Software Cost - \$99 (Mac); \$299 (PC)
- Installation Required - Yes
- Video Editing Capability - Yes
- Capture Audio - Yes
- Display Webcam Video - Yes
- Capture Handwriting - Yes
- Time Limit - Unlimited

\* Only software compatible with the two major operating systems (Mac & PC) were included. Other platform specific screencasting software is available, so if you are tied to a specific platform or are looking for a lower cost solution, Google “screencasting software”.

Is screencasting the same as vodcasting?

No. Screencasting is a specific type of Vodcasting that uses video captured from a computer screen. Vodcasting is a broad term that refers to a recording and publishing of a personal video to the web. It is derived from the term Podcast which is limited to audio. \*\* Videotaped Lectures (below) would be considered vodcasts.

VIDEOTAPED LECTURES (Basic - Free; Advanced - \$299+)

In order to capture and edit a videotaped lecture on your computer you will need video editing software. For most, the free video editing software that comes preinstalled on your computer - iMovie (Mac) and Windows Movie Maker (PC) - is more than sufficient to accomplish the task, but if you feel you need additional editing options, you may want to consider upgrading to a more professional software package such as Adobe Premiere Pro or Final Cut Pro. These items start at \$299.

\* In the case that your camera is not compatible with your editing software, you may need additional software to convert the video into a usable format.

What technical skills do I need?

FINDING AN ONLINE VIDEO

No technical skills are required to find an online video. Simply look through the educational resources and find the video that is best suited to deliver your lesson.

CREATING A SCREENCAST

Creating a screencast can be as complex as you want it to be. If you're all about simplicity and want to get started right away, please read through the “Beginner” option below. If you have a little more time to tinker and are technically inclined, make your way down the “Advanced” path.

For BEGINNERS, the best way to get started is to go to [Screenr.com](http://Screenr.com) and jump right in. For those that need a little more instruction, watch this quick tutorial.

For ADVANCED users, download a trial version of Camtasia Studio for PC or Camtasia for Mac and use the tutorials to get started ([PC](#) | [Mac](#)).

### Tips for an effective screencast

- Control Your Environment - Eliminate any ambient noise (close windows, turn off A/C, etc.) that could clutter your audio.
- Ensure Clear, Consistent Audio - If using a built-in microphone, maintain a constant distance and speak with an even tone. If possible, use an external microphone to improve clarity.
- Use the Proper Aspect Ratio - Focus the attention of the user by capturing only the important parts of your screen. Keep in mind that most screencasts will not be viewed at full screen, so test your output to ensure it is readable.
- Hide Personal Information - If capturing an entire desktop or web browser, hide any personal information (files, bookmarks, etc.) that could be visible during the screencast.
- Limit Mouse Movement - Reduce any visual noise that could distract the user. Think of the mouse as a pointer and only move it when needed.
- Write a Script - Prepare a script to ensure your screencast flows well and is direct and to the point.

### How do I mimic a whiteboard on a screencast?

To capture handwritten movements (like writing on a whiteboard) you must purchase a Digital Pen/Tablet, then follow this tutorial to complete the process.

### Recording a lecture

If you're able to set the camera on a stable platform and hit record, most of your work is done, though you could encounter some difficulty in transferring the video on to your computer. Because there are so many different types of cameras, you will need to hunt down your manual and follow the directions to make the transfer.

**QUICK TIP** Use an external microphone (shotgun or clip-on) for better audio quality and clarity.



## Editing & Uploading

If you followed the BEGINNER screencasting path above or decided to use an online video, then the editing and uploading has already been done for you. Move on to the next step, "Sharing."

If you followed the ADVANCED screencasting path or decided to work with a videotaped lecture, then you have a few extra editing and uploading steps to take care of before you can share your video.

Fortunately, the current versions of most editing software keep the editing process fairly straightforward and have built-in options for uploading. Use the tutorials provided to edit and upload your video, then move on to "Sharing."

## ADVANCED TUTORIALS

- Camtasia
- iMovie
- Windows Movie Maker

## Where should I upload my video?

YouTube is the most common website for uploading video, but because a large number of schools block the site on their campus network, you may want to consider using alternative options such as Vimeo or TeacherTube. Screenr and Camtasia (via Screencast.com) offer their own hosting solutions which may not be blocked, but due to variations in security protocols you should check with your IT administrator before uploading.

## Sharing

To share video with your students, you have two main options: LINKING and EMBEDDING.

To LINK to an uploaded video, go to the page where the video is posted and locate the "URL" section (Screenr) or click the "Share" button (Youtube). Copy the URL shown and paste it on a printed assignment sheet, email or class website.

\* LINKING is the simpler and more versatile of the two methods. Videos can only be EMBEDDED on live webpages.

To EMBED an uploaded video, go to the page where the video is posted and locate the "Embed" section (Screenr) or click the "Share" button (Youtube). In Screenr, click the "Get Embed Code" button, set the width in the popup box and copy the HTML code shown. In YouTube, after clicking the "Share" button, find and click on the "Embed" button. Make the appropriate customizations (if necessary), then copy the HTML code shown. Once the HTML code has been copied, paste the code directly into your class website.

## Learning Activities

Now that you have learned how to create and share an online instructional video, the first half of your flip is complete. The next step is to develop learning activities to fill your newly found class time.

## Learning Strategies

In order to increase the effectiveness of your activities, three learning strategies will be presented. The ARCS Model of Motivation will provide a structured framework to promote and sustain motivation throughout the learning process, the Problem Based Learning (PBL) method will help to evoke critical thought, and Collaborative Learning will encourage communication and social interaction amongst the students.

## ARCS motivational model

According to Keller's ARCS Model of Motivation, there are four major factors that promote and sustain motivation in the learning process. They are: Attention, Relevance, Confidence, and Satisfaction. By developing activities that account for each of these four factors, students engagement is expected to improve.

**ATTENTION!** Develop activities that arouse and sustain student attention.

- Stimulate the Senses - Arouse the senses by invoking surprise or uncertainty.
- Promote Active Participation - Adopt strategies that encourage learners to be involved.
- Use Multiple Methods - Keep the instruction dynamic and use a variety of methods to engage students.
- Arouse Inquiry - Pose challenging questions or problems that stimulate thought.
- Use Humor - Use humor (but not too much) to make the learning process fun.

**RELEVANCE!** Develop activities that relate to the students' interests and goals.

- Use Familiar Terms - Use language and present situations that are related to students past experiences.
- Show Future Worth - Demonstrate higher value by showing how the instruction will help achieve upcoming goals.
- Demonstrate Present Value - Show the value of the instruction and how it will affect them in the present.
- Build on Existing Experience - Explain how current lessons will build upon past knowledge and experiences.

CONFIDENCE! Develop activities that promote confidence and can lead to a successful outcome.

- Develop Clear Objectives - Establish clear expectations so students can feel confident they are on the right track.
- Allow for Manageable Growth - Allow the students to grow at a manageable rate that allows them to feel success as they progress.
- Create Successful Outcomes - Create outcomes that is challenging, yet allows the students to feel success.
- Provide Feedback - Provide positive and constructive feedback to help students improve.
- Allow for Learner Control - Allow students to have a sense of control over the pace of the learning process.

SATISFACTION! Develop activities that reward students for successful work.

- Create Intrinsic Value - Show students there is value in what they learned beyond the classroom.
- Show that Knowledge is Applicable - Allow students to apply their learned knowledge in real life settings.
- Provide Reinforcement - Provide reinforcement to improve motivation and encourage progress.
- Offer Genuine Praise - Give praise when praise is warranted. Do not patronize.

For more information on the ARCS Model of Motivation visit John Keller's Official Website at [www.ARCSTModel.com](http://www.ARCSTModel.com).

## Problem based learning

Problem Based Learning, or PBL, is a student-centered instructional approach that promotes active learning through the development of working solutions for existing, real-world problems. The goal is for students to develop practical knowledge, problem-solving abilities, self-directed learning methods and collaborative skills.

In this approach, students are placed into groups and tasked with coming up with a working solution to a multi-faceted, real world problem. To accomplish this, students must determine what they already know, identify what they need to know to solve the problem and figure out a means to learn it, all while working together as a collective group.

### Characteristics of problem based learning

- Student Centered - Instruction is centered around the students rather than the teachers.
- Problem Based - Real-life problems are given as the focus to develop working solution through self-directed learning.
- Self-Directed - Students direct their learning process and acquire knowledge on their own to solve the given problem.
- Teachers as Guides - Instructors play the role of facilitators, helping students work through the problem-solving process.
- Collaborative - Students are placed in groups and must work together to develop a working solution.

For more information on Problem Based Learning visit the PBL website at the University of Delaware at [www.udel.edu/inst/](http://www.udel.edu/inst/).

### Collaborative Learning

Rooted in Vygotsky's Social Development Theory which argues that social interaction plays a fundamental role in cognitive development, Collaborative Learning is an broad term that describes a variety of instructional approaches involving joint intellectual efforts by students, or students and teachers.

### Benefits of collaborative learning

- Constructivist Learning - Learning is an active, constructive process that requires the student to be involved.
- Diverse Perspectives - Working in groups provides additional views and perspectives that students would not have access to working alone.
- Supportive - Receiving support from both instructors and group members increases engagement and learning.
- Social Development - Interacting as a part of a group forces the development of social skills and improves learning.
- Teamwork & Responsibility - Work collectively as a part of a team to achieve a common goal develops social skills and promotes individual responsibility.

## Collaborative learning strategies

- Determine Topics Suitable for Group Work - Not all topics and courses are suitable for group work. Identify the lessons that will benefit most from collective interaction.
- Develop Operating Standards for Groups - Explain how you want the groups to function and how the work is to be divided.
- Create Tasks that Require Collaboration - When developing the lesson, incorporate collaborative activities into learning process.
- Offer a Means for Peer Evaluation - Allow for team members to assess their peers as means to maintain balance and ensure an equitable division of labor.
- Create a Competition Amongst Groups - Competition provides added motivation for higher achievement and group success.
- Be Conscious of Group Size/Ability - Organize groups so that the size is manageable and the skills/abilities of each team member allow for functional team interactions.
- Assess Individual & Group Performance - To ensure that everyone pulls their weight and that the team functions well in a group, develop assessments to measure both individual and group performance.

For more information on Collaborative Learning visit the Tools for Teaching at the University of California, Berkeley at [teaching.berkeley.edu/bgd/collaborative.html](http://teaching.berkeley.edu/bgd/collaborative.html).

## Types of activities

Using the strategies listed above, develop learning activities that sustain motivation, encourage critical thought and promote social interaction. Select an activity type from the list below and adapt it to your lesson (or develop an entirely new activity).

- Guided Instruction - Allow students to work through problems sets with your guidance and that of their peers.
- Competitive Games - Play individual and team games to promote competition and assess knowledge acquisition.
- Case Studies - Present case studies for students to analyze and come up with potential solutions for using learned concepts.
- Demonstrations - Conduct in-class demonstrations of learned concepts to promote engagement and display relevance.
- Group Discussion - Openly discuss learned topics in a forum-like atmosphere to promote concept sharing and social interaction.
- Peer Teaching - Have students present learned material in their own words and receive feedback from their peers.
- Project Development - Use class time to work on a class project, report or presentation.
- Role-Playing Simulations - Put students in role-playing simulations to act out real-world scenarios that are relevant to the learned concepts.

## STRUCTURE OF BLENDED LEARNING TRAINING COURSES

### o Course name

- When you are planning to develop a b-learning course, you should define a name, which should summarize the main subject of the course. The name should be short, concise, precise and incisive.

Example: Digital Tools

### o Main goal of the course

- One or two paragraphs defining the aim of the course

Example: To develop ICT skills on teachers

### o Specific learning objectives

- A list of specific learning objectives teachers want that students be able to achieve. They should start with a verb, explaining the actions/activities teachers want to develop with their students.

Example:

- To explore several tools on Web 2.0: blogs, forums, wikis, RSS, web quests.
- To understand how to introduce these tools in the context of the classroom.
- To exercise the work with mind maps.

### o Teaching/Learning Methodology

- Define the methods teachers will use inside the b-learning course. They should be student-driven like Problem Based-Learning, Project Based-Learning, Inquiry Based-Learning, Flipped classroom approach, etc.

Example: This course will be carry in an b-Learning approach, using the Problem-Based Learning methodology.

### o Table of contents

- Define the contents by topics teachers are going to teach in each subject.

Example:

- The new ICT tools at school
- Innovation in the pedagogical practice
- Mind Maps as an educational resource
- Web 2.0 inside the classroom: Blogs, Forums, Wikis, Webquest's, Social Web

o Activities and Tools planned and explanation of how to use them

- Define the actions teachers are planning to carry out with their students, activities, games and for each activity which tools they are planning to use and explain how students should use each tool related to each activity

Example:

- The course will be delivered on the Moodle platform, with acesses (logins and passwords) for each student registered.
- There will be some challenges published on forums about the different matters. Students should read carefully all the instructions and use the same forums to reply.
- There will be also a chat where the teacher will be online every Mondays from 18h to 19h30m.

o Chronogram and timetable

- Show the timetable teachers are planning to use with their students in terms of when they will deliver the contents, when they are planning each activity, when there will be the synchronous sessions

Example:

### Digital Tools

Teacher: Alexandra Baldaque (baldaque@upt.pt)

|          | 5ª | 6ª | Sáb. | Dom. | 2ª | 3ª | 4ª | 5ª | 6ª | Sáb. | Dom. | 2ª | 3ª | 4ª | 5ª | 6ª | Sáb. | Dom. | 2ª | 3ª | 4ª | 5ª | 6ª | Sáb. | Dom. | 2ª |
|----------|----|----|------|------|----|----|----|----|----|------|------|----|----|----|----|----|------|------|----|----|----|----|----|------|------|----|
| February | 7  | 8  | 9    | 10   | 11 | 12 | 13 | 14 | 15 | 16   |      |    |    |    |    |    |      |      |    |    |    |    |    |      |      |    |
|          | D1 |    |      |      |    |    |    | D2 |    |      |      | SS |    |    | D3 |    |      |      |    |    |    |    | SS | SS   |      | A  |
| March    |    |    |      |      |    |    |    |    |    |      | 17   | 18 | 19 | 20 | 21 | 22 | 23   | 24   | 25 | 26 | 27 | 28 | 1  | 2    | 3    | 4  |

**D1, D2 e D3 - Challenges in Moodle forums**

**SS** - Synchronous session (1 hour)

**Chat** - Every Mondays from 18h to 19h30m the teacher will be online on Moodle

**A** - Deadline to submit the Final Works on Moodle

o Evaluation of the course and assessments - IT/ES/GR

- Measurable goals must be defined, along with evaluation criteria that clearly demonstrate how implementation is adequately addressing needs of learners instructors organisations and surrounding communities. Make sure that you develop assessments that include both individual and group performances to ensure that everyone pulls their weight and that the team functions well in a group.Team to support the course



## Examples of the evaluation procedures

By Sigrún Svafa Ólafsdóttir - Keilir Academy Iceland

### Group work

The task: Planning a weekend tour to Denmark.

Project description: Clear guidelines for the students and evaluation rubric introduced before they start.

Assignment: Hand in a Power Point slides with pictures and text from the “weekend tour” where they explain what they will do or did while staying in Denmark. If the students are in school, the group presents their trip to other students. Distance learning students do not do that.

Evaluation: I take the project in to my iPad, where I can use the App Educreation to give them feedback. I record my voice while I explain to them what is good and what they could have done better. I give them grade according to the rubric. In this project i value a lot if I can sense the groups personality, if they were enjoying the trip and the process. I aswell value the writing, the grammar and the feeling they have for the country - if they understand infrastructure, traffic, distance and things to do in Denmark.

### Oral exam

The task: Reading a book and discuss it with me (the teacher)

Project description: Clear guidelines for the students and evaluation rubric introduced before they start.

Assignment: The student has to book a time with me to meet and discuss a book. We meet face to face or online with Skype. Every student gets 20 minutes and the goal is to discuss the book in danish, not just answering questions.

Evaluation: I use the rubric to give grades. If the students understands what I say, but doesn't speak danish, that will drag him down a bit, but if he has read the book and knows the story, he can get a lot of points there. A part of the grade is self evaluation. The student has to give himself a number for how active he was working on this project, did he finish the book? And he has to give himself another number for how well he feels that he understands the book.

- o Define who are going to support students and teachers while the course is running and when they will be available. Define how students and teachers can contact them.

Example: The teacher of the course will be Alexandra Baldaque supported by Abilio Cardoso as technician. Any question should be addressed to [baldaque@upt.pt](mailto:baldaque@upt.pt)

- o Define further info in terms of books, articles, magazines and webgraphy students should read if they want to know more about the contents planned for this course.

Bibliography Example:

- DRISCOLL M., Web-Based Training – Creating E-learning Experiences, S. Francisco, Jossey-Bass/Pfeiffer, 2002.
- GARRISON, D. R. & ANDERSON, T., El e-Learning en el siglo XXI, ISBN 84-8063-748-X, Barcelona: Ediciones Octaedro, S.L., 2005.
- HORTON W. e HORTON K., e-Learning Tools and Technologies, USA, Wiley Publishing, 2003.
- RICHARDSON, W., Blogs, Wikis, Podcasts, and other powerful web tools for classrooms, USA, Corwin Press, 2006.



Sigrún Svafa Ólafsdóttir from Keilir Academy, Iceland

## Planning a flipped course step by step

By Sigrún Svafa Ólafsdóttir - Keilir Academy Iceland

### 1. Before the teaching starts / before the semester

Make a visual timeline // Get an overview // make a calendar with:

- a. Beginning and end
- b. All projects and their value
- c. All deadlines // important dates // reminders
- d. The topics // themes for each week

Make a to do list of:

- a. All reading material
- b. All lectures (slides and manuscripts)
- c. All recordings (max 5-7 minutes // a new recording for each topic)
- d. All projects and assessments listed up, explained and ready to use
- e. All extra materials (texts, links, videos...)
- f. Final exam (if wanted)

All material placed in a LMS (Moodle or similar)

- a. Texts (or information of which book, page number e.g.)
- b. Slides
- c. Lectures
- d. Projects // tests
- e. Extra material // links

## 2. Meanwhile teaching / during the semester

All energy spent on the student:

- a. Teaching (minimum lecturing by the blackboard // more one on one)
- b. Activation students by using projects (groups or no groups)
- c. Supporting students
- d. Answering questions
- e. Giving feedback on assessments (formative assessment)
- f. Keeping track on how students are going

Important:

- a. Have everything ready, there is not so much time to make new lectures, projects or tests while teaching.
- b. In the end of the season the teacher is usually very busy giving feedback on projects, if he is using a final exam, it should be more or less ready before the course starts.

## 3. After the class / after the semester

Reflect on your:

- a. Expectations - did everything work out the way it was planned?
- b. Preparations - was everything ready?
- c. Material - what do you have to do better?
- d. Communication - how did you communicate with students, parents, coworkers?

Make a plan on how to fix what you need to fix, before you teach the course again.

## GLOSSARY OF FLIPPED LEARNING TERMINOLOGY

### Active learning

Learning activities in which learners are engaged and active participants in the learning process rather than being passive receivers of information.

### Assessment

Assessment involves gathering information and data to develop an understanding of learners' knowledge and capabilities and evaluate their further learning needs.

### Blended learning

Blended learning refers to learning environments or activities in which learning technologies are used in conjunction with traditional tools, environments and practices.

### Direct instruction

Direct instruction involves an instructor delivering new information to students in order to facilitate learning. The term is commonly used to describe what many would refer to as traditional teaching, i.e. a one-to-many informational activity in which the instructor plays a central role as the provider of new information which learners are expected to internalise to further their knowledge.

### Formative assessment

Formative assessments are carried out during the learning process to evaluate how learning activities are meeting learners' needs. The outcomes of formative assessments may be used to modify learning activities or to help learners identify their own future learning needs.

### Group space/shared space

A group space, also referred to as a shared space, is a physical, conceptual or virtual space in which learning activities are conducted with several learners at the same time. A group space is always situated within a learning environment and may include all learners within that environment or any portion thereof. The typical group space is the traditional classroom.

## Homework

Any learning activities that learners are expected to engage in in their personal space.

## Information and communication technologies (ICTs)

ICTs include any technologies that are used for accessing, sharing, working with, and creating information, such as; computers, smart devices (phones and tablets), networking devices, display devices (projectors and smartboards), etc.

## Learning environment

A learning environment is any environment that is intended to facilitate learning. A learning environment can be a physical environment, a virtual environment or any combination of the two.

## Learning technologies

Learning technologies are any ICTs that are used for the express purpose of facilitating learning. This includes ICTs that are particularly designed to facilitate learning and ICTs designed for other purposes when they are used to facilitate learning.

## Passive learning

Learning activities in which learners receive new information is presented to learners to facilitate their own learning. New information is usually presented by a more knowledgeable person, often a teacher. A typical example of passive learning are one-to-many lectures.

## Personal space/individual space

A personal space, also referred to as an individual space, is an environment that an individual constructs to facilitate their own learning. In their personal spaces, learners are free to engage in learning activities at their own time and pace and using whatever methods they feel are most suitable for their needs. The typical personal space is the learners' home, where they would do homework.

## Summative assessment

Summative assessments are carried out following a learning activity to determine how learning outcomes of the activity compare to certain benchmarks.

## FEEDBACK FROM TRAINERS & STUDENTS

During the project IN.TE.M.I.S. teachers and students from partner organizations have taken part in transnational activities aimed at: enhancing their knowledge on Flipped Classroom method, raising awareness on the relevance of new teaching and learning methodologies and at activating exchanges with colleagues and other students in other European Countries. At the end of each transnational activity, an anonymous online questionnaire was administered by Essenia UETP to all participants, in order to recollect their feedback on the training and measure the level of satisfaction with the experience. The results are shown below, broken down by activity.

### Joint staff training event October 2017, Spain

#### “Innovative teaching: pedagogical and technological aspects”

The first training for the teachers was held in October 2017. Teachers and trainers from the Institute ‘IIS Da Vinci’, Essenia UETP, Keilir and MTR met in El Rompido, Spain, hosted by the project partner Inercia Digital. The ten participants had a five-day course focused on Flipped Method, and had the occasion to get to know this teaching method from representatives from Keilir and MTR, organizations with a great expertise in implementing it, while Inercia Digital, dealing with digital education, offered its knowledge on useful ICT tools to use for lesson preparation.

The results of the questionnaires showed an average very good level of satisfaction with the training provided:

- The overall organization of the training (preliminary information, date and timing, training venue) was rated in a very good way by the 70% of the participants: out of them the 40% considered the organization excellent.
- The contents of the training were rated very positively by the 80% of the participants: 40% of them stated they were excellent, the 40% evaluated the mas as very good.
- The working and training material received a very positive assessment as well by the 80% of the respondent: the 40% of the interviewed rated it as excellent and another 40% as very good.
- The training methodology adopted was extremely appreciated by the 90% of the participants: the 50% rated it as excellent, and the 30% as very good, the 10% as good.
- The number of training hours was considered adequate by 8 people out of 10: the remaining 2 would have preferred even a longer training due their strong interest in the topic, as the comments they made were: ‘More time together over a longer training period’ and ‘Longer training to know even more’. So, we can read the data as very positive.
- No doubt on the success of exchange of practices and ideas: the 100% of the participants felt they were able to contribute through an active participation, as shown in the graphic below.

A total consensus was registered on the other three issues asked to participants, as follows:

- The 100% of the interviewed claimed the training gave them the chance to re-evaluate their teaching methods
- All the respondents (100%) stated that the training encouraged the reflection on themselves as teachers:
- The experience introduced to the totality of the participants (100%) new ways of thinking about education, as they declared:

In conclusion, analyzing the results of the questionnaires, it emerges that the evaluation of the Joint staff training event – “Innovative teaching: pedagogical and technological aspects” was very positive and that the learning objectives were achieved;

Some of the general opinions on the course written in the section comments (open question) were: ‘Everything was good’; ‘I would like to participate to other meetings almost once a year. It has been really interesting. I’m sure I’m going to try it as soon as possible’; ‘A very good experience overall!’ ‘It was a good workshop’; ‘It was an interesting course’; ‘The training was excellent and I really appreciated it’.

## Blended mobility of VET learners

### October 2017 - Spain

The first mobility of VET learners was carried out simultaneously to the first training course for teachers in October 2017 in Spain. Five students from IIS Da Vinci and five from MTR were involved in the experimentation of activities with flipped method, using ICT tools and apps to produce video lessons. A fruitful exchange between the Icelandic students, already familiar with the method and the Italian ones, at their first experience with flipping took place. Furthermore, the experience was for them the occasion for improving their communication skills in English, their intercultural competences and know a bit more of foreign cultures, including the one of the hosting Country, Spain.

The online evaluation questionnaires that Essenia UETP administrated to the students after the mobility showed that the experience was very positive, as reported below.

- For most of the students (90%) it was the first time they participated in a transnational mobility.
- The assessments of the practical organization of the mobility experience were very positive: the 60% rated it as excellent, the 10% as very good and the 30% as good.
- All the respondents (100%) agree on having learnt about the following topics during the training: Technological devices; Flipped Learning; Local culture of the hosting Country (Spain); Culture of the foreign students taking part in the mobility.
- The 100% of the Italian students (5 out the total number of 10 participants) after the experience stated that they would be happy to have flipped lessons at school.



- Likewise, the totality of Icelandic students (5 out the total number of 10 participants) confirmed that they appreciate flipped lessons taught in their school
- The overall assessment that participants gave to the transnational mobility experience as a whole is excellent: the 100% rated it with the highest score

Comments given by students were enthusiastic, showing that the experience was really appreciated by them, that they were actively involved in the activities and are aware of the knowledge and competences acquired: 'It was amazing', 'Interesting experience', 'I learned and socialized with other guys, great experience!', 'I have learn a lot in this experience', 'It was an interesting experience and I learned a lot', 'Very interesting', 'Thank you for an informative and a fun week!', 'Thank you for amazing week! It was very interesting. Gracias'

### Joint staff training event, May 2018, Greece

#### "Implementation and evaluation methods of the flipped classroom"

The second training for the teachers was held in May 2018. Teachers and trainers from the Institute 'IIS Da Vinci', Essenia UETP, Keilir and MTR met in Athens, Greece, hosted by the project partner Action Synergy. The course was joined also by a Greek teacher employed in a British College, that was accompanying her students in a traineeship in Greece, so the total number of participants was 11. The ten participants had a five-day course focused on Flipped Method, and particularly on the aspect related to the implementation and the evaluation. The project partners expert in flipping, Keilir and MTR, shared their good practices with the Italian teachers and showed them step to step how to implement a successful lesson in flipping and evaluating the results. Action Synergy, organization specialized in e-learning, provided training on how ITC tools and apps to use for the implementation of Flipped method. The Italian teachers had the opportunity to report to the Icelandic colleague their experiences as 'newcomers' in the adoption of the learning approach and ask for advice. The results of the questionnaires showed an average very good level of satisfaction with the training provided.

- The overall organization of the training (preliminary information, date and timing, training venue) was rated in a very good way by the 90% of the participants: out of them the 63,64% considered the organization excellent and the 27,27% very good.
- The contents of the training were rated very positively by the 100% of the participants: the 72,73% of them stated they were excellent, the 27,27% evaluated them as very good.
- The working and training material received a very positive assessment as well by the 81,82% of the respondent: the 54,55% of the interviewed rated it as excellent and another 27,27% as very good.
- The training methodology adopted was extremely appreciated by the 100% of the participants: the 63.64% rated it as excellent, and the remaining 36.36% as very good.
- As for the number of training hours, it was considered adequate by 10 participants out of 11.

- Also in this case, as it occurred in the evaluation of the first training, the only negative answer to the question was given by a participant who would have preferred to take a longer course to deepen the topic, as noted in the section on open answer 'comments and suggestions': 'There should have been more hours of course during the week or a longer training period'
- All the participants (100%) found the course a participative moment, in which they were able to share their ideas and experiences.
- The training was an occasion for the 100% of the attendees to re-evaluate their teaching methods.
- The participation in the transnational activity was an incentive to reflect on the role of the teachers for the totality of the interviewed.
- In the opinion of all the participants, the exchange introduced them to new approaches and deeper reflection on education.

The comments given by the teachers demonstrate that the training course was interesting from all points of view and that the training objectives were achieved: 'Very interesting course and useful information', 'Everything was very interesting and involving. I hope to experience flipped learning in my classes to improve my students skills and to increase my teaching method', 'The workshop was an excellent opportunity to talk to other teachers about their teaching practice and experience and share good practice. Having the students there has also helped see things from the student's point of view. A very good experience', 'Great workshop', 'In my opinion, the methodology should be developed to all the subjects', 'I enjoyed spending time with you', 'Everything was ok', 'Overall a success', 'Everything okay'.

## Blended mobility of VET learners

### May 2018 - Greece

The second mobility of VET learners was carried out simultaneously to the second training course for teachers in May 2018 in Greece. Participants were five students from IIS Da Vinci and five from MTR and also three students from a British College, that were in Greece to perform an internship. They were involved in practical activities, like preparing flipped lessons on Athens and its heritage for their teachers.

The results of the evaluation questionnaires, reported below, show that the experience was fruitful for the young learners.

- For most of the students (90%) it was the first time they participated in a transnational mobility:
- All the participants claimed to be glad to have been involved in the project.
- The organization of the mobility experience was considered very positively by all the students: the 53,85% rated it as excellent, the 38,46% as very good, the 7,69% as good.

- When asked if the experience was interesting for them, the 100% gave a positive feedback.
- All agreed also in stating that thanks to this experience they acquired more knowledge about flipped learning.
- 11 students out of 13 also reported to have learnt about new use of technology for learning.
- For the 92,7% of the students the mobility was an important moment to interact with students from other Countries.
- 12 students out of 13 claimed also to have had the opportunity to learn something about Greek culture.
- The 100% of the students was enthusiastic about the flipped learning method and considered it a good methodology to study and learn.

The overall experience was appreciated by the participants, that expressed very positive comments: 'I would like to participate in more activities like this', 'It was awesome', 'It was all great', 'Interesting', 'Really great keep it up', 'Excellent', 'It was a wonderful experience', 'The flipped classroom is a very comprehensive method not only in the study but also in the union between companios', 'It's a beautiful experience', 'It was a great experience I learned a lot and at the same time I enriched my English', 'I loved the experience and i hope that there is a chance for all of us to get together again pleeeeeeeaseeeeeee', 'Flipped learning should definitely be used more in classrooms to motivate students'.

