Mobile Learning Unit Model (MoLUM)

A model to design mobile learning activities in school

ENGLISH VERSION

Erasmus+

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Summary

NOTE FOR THE READER

Dear Teachers,

The model we are presenting in this document is the outcome of a synergistic work between Formatech and Bicocca University, which has written the Guidelines, after carrying out deep bibliographic and scientific research on mobile learning and more generally on technologies in support of teaching.

Formatech has tested this model and has been putting it into practice in all Fondazione Luigi Clerici's Vocational Training Centers with about 2,500 young students in 15 centers located in the Lombardy Region.

Following a preamble, which serves as a link to the Guidelines, the reader will find the sample grids to plan pluridi-sciplinary teaching units. These represented the core activity that the trainers involved in the October's 2015 training carried out with their colleagues and students. We would like to highlight that these very detailed sample grids must not be interpreted as rigid schemes to be followed, but they guarantee adaptability and replicability of this teaching model in different contests.

For this reason, these grids, useful for planning learning units, have been uploaded to the Project's Moodle platform (**molvet.formatech.biz**) and integrated with other support documents to monitoring and the reports on the learning activities.

We hope these tools will be precious and useful for your work!

INTRODUCTION

The introduction of mobile devices in teaching can be realized in a wide range of different areas also from a methodological point of view depending on weather you operate in classroom settings also linked to VET or in corporate training settings.

The first case, in fact, requires first and foremost an innovative training methodology in which the mobile device represents a tool of which the learners can avail to try out an experiential approach. The learners can use the device to access sources, to produce materials, to realize videos and to work with trainers by using a multidisciplinary approach and only subsequently for research activities.

Within the company setting, on the other hand, we will talk in a narrower sense of mobile learning which represents an evolution of the classical e-learning. The approach of the classical e-learning used to interact with a desktop is different from the one necessary for smartphones or a tablets.

THE USE OF MOBILE DEVICES IN EDUCATIONAL INSTITUTION SYSTEMS AND IN VET

In order to introduce the topic, we believe that it is very important to identify the context related to the type of users that will avail of the mobile devices.

YOUTH AND TRAINING

Young people of our times are increasingly presenting a refractory behavior when it comes to learning in the traditional way; they present academic apathy and discomfort in class.

Leaving aside the disciplinary aspect, which would deserve an in depth-examination in relation to the relationship between training institutions and families, it seems to be obvious that something new needs to be introduced into teaching and in to the model of teaching.

(See Molvet's Guidelines – **section 1 INTRODUCING ICT IN THE EDUCATION SYSTEM: A DIFFICULT PATH**)
The introduction of new technologies could be a real opportunity to start a gradual renewal of the teaching approach, which may trigger the motivational dimension linked to the interest of people by stimulating the qualities that everyone has and that are innate features of a person.

The approach we propose through the introduction of new technologies and mobile devices is based on competences development and assessment, which goes beyond the traditional approach in which learners were seen as "containers which need to be filled".

It seems to be possible to present this approach to Training Institutions, which aim at developing efficient training approaches in which abilities and knowledge are linked to the development of competences.

COMPETENCE DEVELOPMENT TRAINING

(See Molvet's Guidelines – **chapter ASSESSING THE STARTING SITUATION** and **chapter RESEARCH ON THE VARIABLES INFLUENCING THE INTRODUCTION OF ICT IN THE CLASSROOM**)

Everyone hopes for this school model to be realized. It can however only be obtained through the transformation of the teaching methods. Teaching for the development of competences has to become concrete practice and also needs to constitute a style of teaching which abandons the traditional models of "frontal teaching" and in which the relationship learner-trainer is completely transformed.

Competences are the "proven ability to use knowledge, skills and personal, social and/or methodological attitudes in work situations or learning situations and in the professional and/or personal development. In the European system competences are described in terms of responsibility and autonomy" (European Union 2008).

Therefore, it is important to highlight the characteristics of people by offering them a condition in which they can express their own potential. It appears immediately evident that that this type of teaching is active and participatory type of teaching in which knowledge is a resources to be used in a concrete way which does not contemplate superficial learning.

Other essential elements for the development of a teaching model for the development of competences are workshops and experiments, which demand from the learner a continuous effort to put knowledge and practice into a relationship. During this continuous exchange, the key competences and basic competences can be developed together in a mutually virtuous exchange. As already mentioned, the introduction of mobile devices and the development of digital competences represent a big opportunity.

DIGITAL COMPETENCES

(See Molvet's Guidelines – **section THE RESEARCH ON THE VARIABLES INFLUENCING THE INTRODUCTION OF ICT IN THE CLASSROOM**)

Digital competences cannot be seen reductively as the ability to understand concepts of computer science, neither only as the ability to use software packages. Hence, digital competences become a dimension in which this teaching model can be developed. Therefore, these competences can be used for all knowledge areas.

Although the European Union has taken on the digital competences as key competences, they represent formidable basic and transferable competences, necessary for the individual to move around in the civil society without enduring "digital divide".

Thus, these competences can be seen as key competences useful to face any type of problem during all stages of life.

The invasive presence of technology puts focus on new problems, which are also related to the compliances with rules and to possible crimes caused by the use of such technologies. These problems not only concern young people who use technology for their own work but also training institutions which have to equip themselves for monitoring and regulating the network access and families that together with training institutions have to perform their own educational function.

PLURIDISCIPLINARY TEACHING

It represents an evolution of multidisciplinary teaching in the logic of interaction between different disciplines based on the collaboration of the trainer team in educational programming.

The traditional training forces the learners to use a cognitive effort in order to understand the interactions, which might exist between the different disciplines, which are being introduced in a completely segmented way.

On the other hand the new approach, that we are presenting changes the methodology of work of the trainer team radically. Properly trained and supervised, the trainers will have to prepare pluridisciplinary training units by identifying the key competences, which will have to be developed. Around those, they will have to determine the

transferable competences, which have to be integrated and on which educational projects need to be developed by establishing: objectives, prerequisites, description of competences, methods and tools to be used in addition to the evaluation system for each skill.

In order to realize the pluridisciplinary projects we have to be careful not to extract only some pieces from each single subject due to the fact, that this might only create a distortion of the traditional disciplinary approach that therefore would be suitable neither for VET nor for high educational institution systems

The correct approach would be to offer learners concrete examples of applications of the concepts learned within the single disciplines and to highlight the connections with the other disciplines with the goal to create a "digital peak" of pluridisciplinary training units, which are integrated and designed to be realized by the learners together with the team of trainers.

One of the key aspects in the pluridisciplinary teaching is the identification of the period during which pluridisciplinary experiences can be proposed. This should probably take place after the introduction of the knowledge necessary for dealing with pluridisciplinary experiences.

FOCUS ON THE LEARNER

(See Molvet's Guidelines – **section IN THIS CLASSROOM SOMETHING IS GOING TO CHANGE...**)

The above described method strives to make learners play a central role during the learning process: It is possible to create individualized paths based on the realization of the pluridisciplinary training units which are integrated into a context aimed at the development of competences. The learners are accompanied gradually during the course of studies in the development of skills, which are necessary for dealing with their own path of personal development. This type of maturation can be reached through further studies or through the integration in the labor market.

The following are some user-friendly tools which can be used by the trainer team.

MODEL OF A PLURIDISCIPLINARY TEACHING UNIT

The teaching units are aimed at developing the key skills and transferable skills of each single learner.

General items

Description of the Organization	**(10 lines)**
The context of the class	Insert a short description of the class group: address, course and year, number of learners, number M/F, indications on learning disabilities and special needs etc.
Groups of learners	Describe how you will divide the learners into groups by integrating for example learners with inhomogeneous skills or vice versa, if you intend to build groups with homogeneous skills, by highlighting advantages and disadvantages.
Prerequisites	What abilities and knowledge do the learners need for the realization of the project?
Responsible teacher	What is the role of the responsible teacher?
Other involved staff	What is the role of the other staff?
Involved external experts	Are there any external experts involved? Describe their expertise and role.

Detail items

Title of the teaching unit	**Insert the title of the teaching unit**
Idea to be developed (Proposal)	What is the idea that gave birth to the project? Explain in 10-15 lines.
Description of goals	What are the general and specific goals you plan to achieve by realizing the project? List them shortly.
Key skills to be developed	What key skills (vocational area) need to be developed? List the to the subject related skills
Other subjects involved	What subjects in what area would you like to treat? (Language area- Italian, English,... STEM, Technical and scientific area, Historical - Social – Economic area...)
Transferable skills to be developed	What transferable skills will be involved in the process? List the to subjects related skills.

Title of the teaching unit	Insert the title of the teaching unit
Location and timing	Where does the project take place? Insert a shot description of the classrooms and labs you intend to use. How many hours will be need to realize the entire project? How many for each single subject? What tasks and how many will be performed at home and which ones and how many in the classroom?
Methodology of work	Describe the methodology used for the realization of the activities, for example. What techniques do you intend to use? Working in small groups Studying of the sources with the aim to educate the learners to choose the correct once
Use of mobile devices and software	What multimedia tools and other tools will be used? What mobile devices do you intend to use and how will they be used during teaching activities?
Other tools	What other tools will be used and how will they be used?
Final Output/Product	What final Output/Product do you intend to develop? Describe it briefly.
Storage Policy	How do you intend to store the teaching unit for transferability and future use. If you intend for example to choose the best teaching unit in order to insert it into a catalog of training unit for future use.
Evaluation criteria	What evaluation criteria will you use? Describe them briefly

Phases of the project and related activities

Structure of the course

Phases	Activities	Location/Timing
Phase 1: Knowledge acquisition	Presentation of the project by the trainers of the different subjects	Insert hours needed and location in which the activity takes place
	The trainer provides indications and methodologies for the acquisition of resources and information	Insert hours needed and location in which the activity takes place
Phase 2: Comprehension and elaboration of the gathered information	List of all the activities that might be used for the elaboration of the information (mind mapping, brain storming, summaries)	Insert hours needed and location in which the activity takes place
Phase 3: Realization of the final product	List of all the activities that might be used for the realization of the product (presentation, video making, graphic design,...)	Insert hours needed and location in which the activity takes place
	Final presentation and discussion of the product	Insert hours needed and location in which the activity takes place

AN EXAMPLE OF A PLURIDISCIPLINARY TEACHING UNIT

General items

Description of the Organization (10 lines)	**Fondazione Luigi Clerici – Vocational education and training centre of Lecco (LC – ITALY), Via Baracca 15.** **Three-year vocational qualification courses**
The context of the class	Vocational qualification course “Beautician” - Third year. 25 female learners: 2 learners with learning disabilities (dyslexia), 5 learners are immigrants (2 from Morocco, 1 from Egypt, 1 from Albania and 1 from Slovakia).
Groups of learners	The class will be divided into 5 groups of 5 learners with an immigrant in each group. The two learners with learning disabilities will be integrated into the groups which are characterized by stronger competences in peer to peer relationships and language skills...
Prerequisites	Strong Italian and basic English language skills
Responsible teacher	Coordination of the whole project - name and last name
Other involved staff	**STAFF**: (for example) • 1 Italian/communication teacher - name and last name • 1 English teacher - name and last name • 1 teacher of the technical – professional area - name and last name **STAFF’ ROLE**: • Guide the knowledge acquisition process of the soft/transferable and professional skills requested; • Control the elaboration processes of the communicative materials by guiding and correcting learners when necessary • Check the material produced by each learner and suggest changes and adjustments; • Coordinate the processing of the class’s artcraft.
Involved external experts	Not needed.

Detail items

Title of the teaching unit	My video CV
Description of goals	GENERAL GOAL: encourage the integration of learners into the professional context, also abroad. SPECIFIC GOALS: improving the communication skills of the learners in contexts where there is requested a presentation of themselves (personal and occupational skills). Consolidation of the ability to use tools and digital technologies. Strengthening of language skills in Italian and English.
Idea to be developed (Proposal)	The project idea is in line with the ultimate goal of the cycle of vocational training or rather with the learner's acquisition of professional skills, which are useful for their direct transition from vocational training to work. In particular it is consistent with the teaching unit "Finding work in the field of beauty and wellness" of the personal train plan of the third year . The project's specific purpose is to encourage the learners' transition process to employment(also abroad in prevision of internships and mobility), by strengthening their communication skills, which are in many cases "a weak point", even if the requested skill is only the oral one. In all professional fields, communication skills are very important in order to develop and manage relationships with colleagues and costumers properly and professionally The preparation phase of the elaborate/final product will enable learners to reflect on the language and on the correct use of language expressions and body language. **The project is therefore functional to teaching English at different levels, which on the other hand is often conducted in a frontal way and therefore considered to be unsuitable for the development of communication skills of learners**.
Key skills to be developed	• acquisition and/or consolidation of grammar and syntax of the English and Italian language useful for presenting themselves and their professional profile orally • acquisition of awareness on professional skills required within their professional field
Area/subjects involved	**Language area** > Italian and English (skill: communicate with appropriate language etc...) **Technical professional area** > (skill: illustrate the features and experiences related to the professional field)
Transferable skill to be developed	• ability to use multimedia tools in order to enhance the effectiveness of their own communication; • acquisition of greater awareness of their own strengths and weaknesses which can be enhanced/improved • improving the capacity of peer to peer comparison; • cooperation and mutual support in the operational stages of the development of products; • improvement of the classroom climate in pursuit of greater and better integration of the individual into the group .

Title of the teaching unit	My video CV
Location and timing	**LOCATION**: the classroom activities take place in the classrooms of the professional educational institutions of Fondazione Luigi Clerici: They are conventional classrooms, some of them are equipped with LIM. Some of the classes have the possibility to access computer labs with Windows PCs and Microsoft Office applications. All classrooms have free Wi-Fi and the Internet access, which can be activated by the teacher. **TIMING**: 22 hours of lessons including 6 Italian lessons, 4 lessons in professional technique, 12 of English lessons. The work performed in classroom is mainly collaborative, led and moderated by staff.
Methodology of work	• Phase 1: KNOWLEDGE ACQUISITION ACTIVITIES > inform learners about the resources to be used according to the chosen topic, in this case "professional profile", and facilitate the search. • Phase 2: COMPREHENSION" AND ELABORATION of the information gathered in phase 1 • Phase 3: REALIZATION OF THE FINAL PRODUCT > graphic art (presentations, posters, comic strips, calendars, etc.) or videos (make a choice according to the project that staff agreed with) • Final presentation and discussion of the artcrafts in a meeting attended by all the learners and staff involved in the project. On this occasion difficulties, downsides, strengths and interesting aspects will be discussed.
Use of mobile devices and software	**TOOLS AND TECHNOLOGIES**: each learner will avail of an iPad with useful applications for writing, graphic design and the audiovisual development of contents. For this specific project we intend to use(list items according to the project): • One Note app/Evernote app: as a tool for taking notes and for the distribution of study material and different tasks by staff ; • Keynote/PowerPoint: to develop the storyboard of the presentation; • Wordreference: as dictionary support for translations into English; • Youtube Channel: for the use of English videos; • Garage band/Speaker for the creation of trial podcasts; • iMovie/Adobe Voice: for the realization of the final product; All learners also have access to the Moodle platform of the organization, on which the staff can upload the different materials, also the once produced by the learners.
Other tools	None
Final Output/Product	The tool identified to facilitate this learning process is the **realization of a video presentation for 1st classes, or a video CV for 2nd/3rd class, in English and subtitled in Italian**.
Storage Policy	The individual videos of 1 minute realized by the learners with iMovie will be saved in MP4 format, and will be stored on the online platform Moodle of the organization, so that they can be re-used or accessed in subsequent teaching activities.

Title of the teaching unit	My video CV
Evaluation criteria	The learners will be evaluated according to their gained competences:
	Advanced – Intermediate - Elementary - Result not achieved

Phases of the project and related activities

Structure of the course

Phases	Activities	Location/Timing
Phase 1: Knowledge acquisition	Presentation of the project and overview of the soft/ transferable skills> search in group checked by the Italian teacher, ending with a theoretical recap.	2 hours (in classroom)
	The same process has to be followed for the English subject, but with the support of videos in original language.	2 hours (in classroom)
	Search for resources to be done at home	about 2 hours at home
	Overview of the technical and professional skills > search in group checked by the teacher of the technical-vocational area, ending with a theoretical recap.	2 hours (in classroom)
	Search for resources to be done at home	about 2 hours at home
Phase 2: Comprehension and elaboration of the gathered information	Debate and summary during the English lesson: hands-on recommendation for the drafts	2 hours (in classroom)
	Homework – draft of the storyboard	about 2 hours at home
	Introduce yourself: hints and examples (artistic self-portrait, storytelling, biography, CV to be compared) – frontal lesson	2 hours (in classroom)
	Homework - preparation of the storyboard and first rehearsals of the podcast in Italian	about 2 hours at home
	Revision made by the teacher of the technical-vocational area– presentation of the drafts in the classroom	2 hours (in classroom)
	Group work during the English lesson – start of the translation- At the end the English teacher checks the subject specific vocabulary.	2 hours (in classroom)

Phases	Activities	Location/Timing
Phase 3: Realization of the final product	Homework: realization- production*: first step with iMovie/Adobe Voice (silent) + podcast in English> delivery on Moodle or sharing from the devices or through One Drive.	about 3 hours at home
	Homework: realization – production: second step with iMovie/Adobe Voice edited with audio> delivery on Moodle or sharing from the devices or through One Drive.	about 2 hours at home
	Workgroup on videos and suggestions among peers during the English lesson	2 hours (in classroom)
	First viewing of the artcrafts in class and debate/communicative tips.	2 hours (in classroom)
	Homework: realization- adjustments > delivery on Moodle or sharing from the devices or through One Drive	about 2 hours at home
	Second viewing with the English teacher – correction of vocabulary, grammar mistakes and syntax.	2 hours (in classroom)
	Frontal lesson during the English lesson - Presentation of the artcrafts in the classroom, comments and self-evaluation	2 hours (in classroom)

***NOTES**

In this specific example, a good structure for the elaboration of the video with the length of about 1 min could be:

- first piece - introduction
- image as a link
- part that describes the concept better, into-depth description, using also some Picture in Picture (photo or video, inserted into the main video image)
- final summary graphically summarized with a piece realized with the app Adobe Voice

THE MOBILE DEVICES IN COMPETENCE TEACHING

The technological choices in teaching represent an important aspect for the success of innovative teaching. More important is, however, how technology is being used in teaching. Therefore the use of mobile devices represents a central aspect.

Once again it seems appropriate to point out what role the trainer plays when becoming the key player of this process, when becoming the director the regulates the use of the devices in learning, which takes place in a totally new way.

This activity cannot exclude the accountability of the learners for the use of those tools, for the correct access and selection of resources and digital contents, which result to be superabundant. If left to operate freely during the lessons, the learners might not always respond to the mandate of the trainer with regard to the realization of the projects, which are aimed at increasing their own competences.

That is why we would like to underline that an important activity of this model is aimed the creation of the awareness of learners' and families' accountability with regard to the use of these new tools.

At the beginning of each academic year it would be useful to organize a course for the parents of the classes in which mobile devices are going to be introduced for teaching. During this course the new teaching model and its implication can be presented. Families can be made aware of the joint responsibility they have with the Training Institutions also with regard to the criminal liability for the misuse of the device. Furthermore, they can be explained how to equip themselves for controlling and regulating the internet access used by the young learners.

We believe that the introduction of this teaching method certainly requires the verification of the connectivity and the ensuring of an adequate solution, the adaptation of the network infrastructure with devices of the latest generation useful to regulate and control the internet traffic; but certainly, a joint action realized on three different fronts

- training of the trainer team,
- training and presentation of the implications of the introduction of mobile devices to families, formalization of the training agreement,
- teaching the learners the correct use of mobile devices and making them aware of the risks and benefits of the utilization of the network as teaching support.

TECHNICAL ASPECTS

Mobile devices in teaching can be a support for the trainers and even used as an alternative for LIM which seem to be outmoded by WIFI devices, projectors and digital screens.

The characteristics of the mobile device which has an accelerometer, GPS, magnetic field detector, camera, microphone, in addition to the large amount of APP, which allow us to use the device in a way that was unthinkable until a few years ago, offer the trainers its use in classroom and workshop settings.

METHODOLOGY IN THE CHOICE

It does not matter what brand of device will be chosen by the educational institution as well as what type of software technology will be adapted; there are frequently discussions about the brands with regards to hardware and software. What is certain is, that the introduction of a new methodology of work, oriented on new media cannot be an initiative of each single trainer but needs to be implemented at class level, where the training institution does not have the function of coordination and supervision in the choice of:

- device to be used
- basic Applications
- platforms for the exchange of data during the activities (iCloud, Drive On, Google etc ..)
- choice of platform - Repository for sharing of products and training units

The need for a choice of an area is essential in order to limit a possible entropy in the training process, which might damage the quality of the final result. We will not give any opinion on the different brands even though they differ greatly in the tools they offer to support teaching, depending on the commercial choice they make for the dissemination of their brand.

LMS SOLUTIONS FOR MOBILE TEACHING

For the development of a "training system" that is oriented towards the reusability of products and the interaction between learner and trainers, the choice of the correct LMS tools becomes strategic. This choice must take the model that will be used into account. We believe that the proposed training needs solutions that allow learners to interact continuously with the trainers as well as amongst themselves. We also sustain that the use of LMS tools should be part of the methodology, they should be sufficiently flexible and integrable. This should go beyond the choice of the brand.

The basic functions we suggest are the following:

- repository of products and documents
- forum
- blog
- wiki tools
- chat
- assessment tools / self-assessment questionnaires
- management of virtual classrooms
- management of workshops
- internal mailing service

- calendars

A METHODOLOGICAL TRAINING PROPOSAL FOR TRAINERS

The proposed methodology, adopted during the autumn session at Coleg Cambria, is an active methodology and represents the simulation of an active lesson in class starting from the grid for the design of a learning unit. This methodology is going to be integrated with the preparatory work of the trainer team who has “to deal” with the whole class, after having planned the training plan declined into pluridisciplinary training units.

The methodology that is proposed here as example is an active methodology that leads trainers to interact with the learners who are hence driven by the teaching approach.

This methodology exceeds the critical issues highlighted in relation to the applicability of on pluridisciplinary teaching units based teaching on the universe of teaching systems.

In detail the teaching approach may be the following:

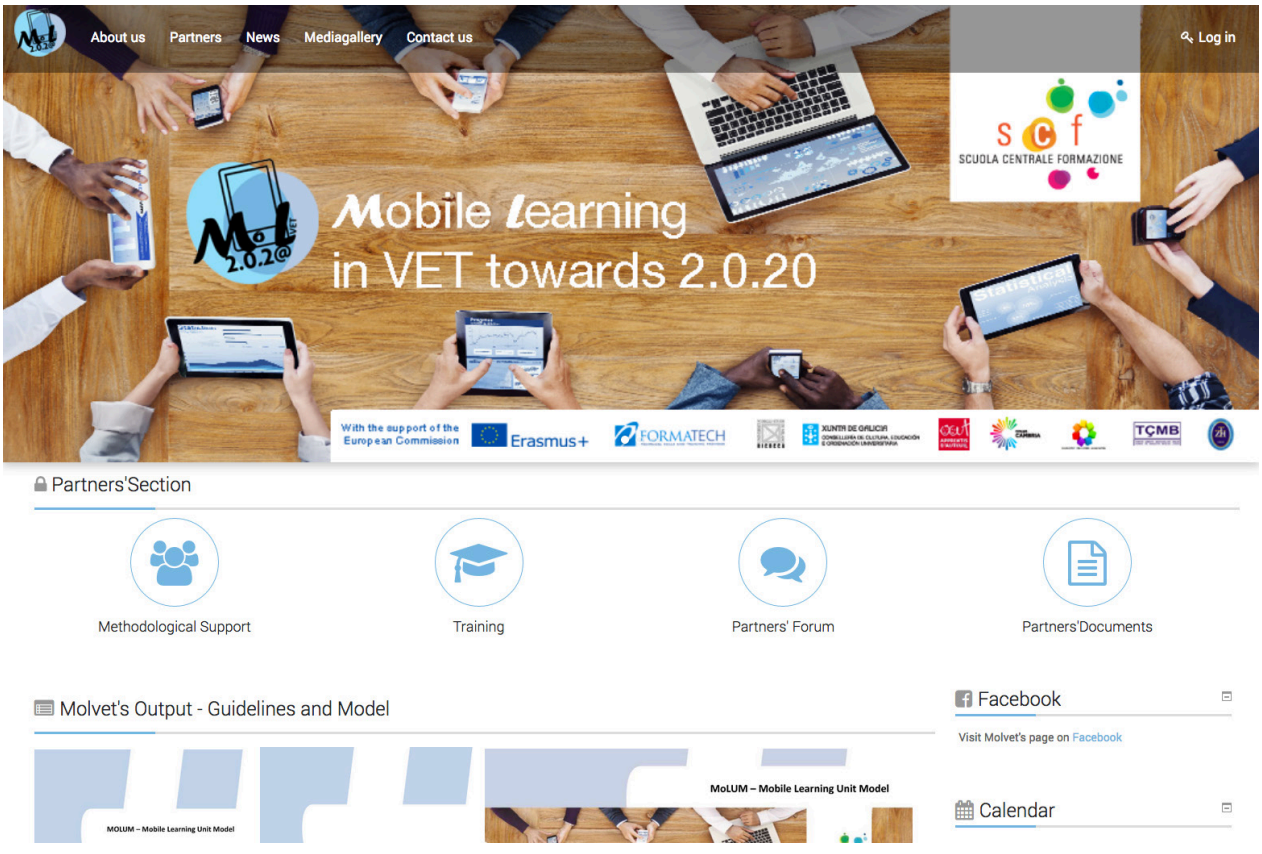
- Exploring = we guide learner to explore a topic.
- Asking = discussion session, the participants must find answers and these are compared.
- Applying = sample workflow to acquire operational capabilities.
- Trying out = exercise which the learners have to perform by applying what they have learned in the previous steps.

OUR EXPERIENCES

After the more theoretical phase of the project, our partners have participated to a training week where the specific projects could be planned out, confronted, enhanced.

PLANNING THE EXPERIMENTATION

The first step of the preparation regarded the use of the Moodle platform: it is important for any project to have a space where it's possible to store the material that is being used and produced, share opinions, go back and keep track of the work done. Of course there is a variety of ways to achieve such a result, and the use of Moodle is only one of them. In any case it is important to make sure that the participants are familiarized with the chosen instrument if we want the communication to be fluent and effective.



Once the sharing tools were introduced, the partners started their work on the Model (MoLUM - Mobile Learning Unit Model), a guide to the planning of the project that allowed to clarify the situation and the aims of every institution.

Each partner prepared a project using the proposed grid and then uploaded it on the Moodle platform. From this first document we prepared a more "user-friendly" presentation of the project that could be used to introduce it

to colleagues and any external person interested in it.

Once the skills and aims of the projects had been identified we proceeded to an investigation on the Apps that could be adopted to achieve the desired results.

The knowledge and the experience of each partner was shared and a common base of available instruments created. Two very important questions to be answered when choosing the right application are:

- Am I looking for a FREE tool or can I pay for it?
- What kind of device will I and the learners be using? Do I need an app that can be run on any kind of device or will we all be on a same one?

Technique / Methodology	Tools / Apps
Animation tools	GoAnimate Powtoon Video Scribe
Augmented Reality	Aurasma ARMedi
Back channel	Padlet (http://it.padlet.com/murajulia/y6h3rprvlxwg) TodaysMeet
E-book	Didapage
File creation and sharing	Google App, Google Drive
Mindmap	Simple Mind Mindvew (not free) OmnyGraffle Mindmup
Presentation	Prezi Powtoon Keynote
Quizzes created by	Kahoot CrosswordForge
Serious game	Minecraftedu.com Code.org duopixel.ca camerasim

Technique / Methodology	Tools / Apps
Video analysis and markup	Coach my video (only for Apple) Coach's Eye (OK for Apple and Adroid) Skitch (OK for Apple, Android and Windows)
Video Creation and Editing	iMovies wevideo

Resource Collection Websites

This area lists websites that give suggestions on how technologies can be used.

Topic	address	Suggestions for use
App finder	http://www.appzapp.net/en/	Send out notifications about cool new apps promotions and so on
Online teaching activities Index	http://www.ion.uillinois.edu/resources/otai/	To find explanation on student centred approaches that integrate ICT AND examples of application
Project based activities	http://bie.org/resources	To find explanation on project based activities that integrate ICT AND examples of application
Cooperative learning (not focused on ICT integration)	http://www.kagan-uk.co.uk/	
Apps linked to Bloom - the Padagogy Wheel (pad for ipad)	http://www.unity.net.au/padwheel/padwheelposter.pdf	To find apps to help with higher order thinking skills

Once the apps and resources that learners should adopt to carry out their work are identified, it could be useful to provide them with a scheme listing all of them, with a short explanation of their use and the devices that support them.

CARRYING OUT THE PROJECT

Description of the use of the model proposed to plan the activities, and of the adaptations

that each institution applied.

APPRENTIS D'AUTEIL

THE MODEL

General items

Description of the Organization (10 lines)	Apprentis d'Auteuil – Lp Victorine Magne
The context of the class	27 students, male and female. All of them have a low level of basis skills. Nb of dropout student, nb of students coming from pre-vocational classes, nb of students with learning difficulties Different nationalities
Groups of students	The students are divided into two groups. One will learn about cooking and the other one about service. There will work in pairs. The foreign students won't be together. One of the two students will have a better level than the other.
Prerequisites	The students have to be able to use tablets
Responsible teacher	Coordinator of the project
Other involved teachers	TEACHERS: 1 cooking teacher 1 waiter teacher 1 cultural activity referent 1 English teacher 1 social worker/technical teacher 1 math teacher 1 science teacher 1 history and geography 1 safety teacher TEACHERS' ROLE: Guide the knowledge acquisition process of the professional and software skills requested; Evaluate the acquisition of the professional skills; Coordinate the processing of the class's artcraft.
Involved external experts	Not needed.

Detail items

Title of the teaching unit	My e-Menu
Description of goals	GENERAL GOAL: encourage the integration of the French young people into the European labour market dealing with catering. SPECIFIC GOALS: • encourage the use of new technologies into the pedagogical methods • encourage teachers to work on project management • make the students be totaly actors of their learnings • use a differentiated instruction • encourage the teachers to use flipped classroom with the different video realized into this project
Area/subjects involved	• language area: French and English • general subjects: math, science, history and geography • vocational area: catering / safety
Idea to be developed (Proposal)	The idea of this project is to move the focus on a concrete project instead of the learning skills, especially the students. Besides, this idea is to insert interdisciplinarity project management into pedagogical methods.
Key skills to be developed	• introduce themselves to the others • learn English and make the students realize the importance of English speaking • improve their professional skills (waiter/cooker) • give sense to general subjects (math, science, history...) • use hygiene and safety rules
Transversal skill to be developed	• communicate between themselves • make links between the different learnings • be at ease with new technologies • be able to cooperate with the others in order to achieve a result • be aware of their strong and weak competences

Location and timing	**Location**: The project will take place into the pedagogical restaurant and into classroom. There are conventional classrooms. Some of them are equipped with LIM. Some of them have the possibility to access computer labs with Windows PCs and Microsoft Office applications. All classrooms might have free Wi-Fi and Internet access. All the students can have an i-pad. **Timing**: 80 hours of lessons: • 40 hours for the waiter training: • 25 hours for professional teaching • 15 hours for the general teaching • 40 hours for the cooker training: • 25 hours for professional teaching • 15 hours for the general teaching
Methodology of work	The teachers will use different way of teaching: collaborative, Socratic dialogue, flipped classroom, personalized learning, peer tutoring, and presentation. Phase 1: introduction of the project by a Socratic dialogue; a way to involve the students. Phase 2: comprehension and elaboration, with collaborative method. The result will be two mental maps with links with the general subjects and different tasks to do; one for the cooking part and the other for the waiter part. Phase 3: training of the students about video making Phase 4: realization of the video, pictures and shaping of the e-menu
Use of mobile devices and software	Use of i-pad and these software: • software mindview 6 • i-movie • e-book
Other tools	
Final Output/Product	The students will create an e-Menu with different videos, text and pictures. Everything will be in English language, writing and speaking. Afterwards, the different videos will be divided for an use for flipped classroom.
Storage Policy	The different videos will be stored on the online platform “itslearning”.
Evaluation criteria	The students will be evaluate on their professional skills through evaluation grids.

EVENTUAL DIFFERENCES AND ADAPTATIONS FROM THE ORIGINAL MODEL TO THE ACTUAL IMPLEMENTATION, SUGGESTIONS AND OBSERVATIONS

October 2015

Intruments availables	Project's wish list	Dissemination's must know
ENT (Espace numeric de Travail-le), Mindview 6 for the organization of the project, it's a mind map with Gantt. iPad, Google app	flipped classroom video of specific movments kitchen apps an Emenù with recipe and videos on how to do them	old teachers need more training 8 persons involved already in the project "success day", one evening to gather and celebrate how good they did: all partners and workers are invited to celebrate the success of the students

February 2016

- Project activities involve: 28 students aged 15-17 and 5 teachers/educators (each person having his/her own tablet).
- Their objective is to create a video library.
- Video are made by students in a group of 2; they are assigned a "scenario" that is a task, a situation, a problem etc. so durations are different. Each task/problems embed both theoretical and practical skills (e.g. Cleaning plates with alcohol: how exactly to clean and chemical composition of alcohol). Some of the video have subtitles, others are in English (available videos were given to Scf/Civiform for their cooking training program).
- These videos will be used especially for evaluation for the group of students who made them (contrôle en cours de formation) and to organized the flipped classrooms in the future for future students.
- After presentation of Coleg Cambria's experience, they think to integrate QRCodes to these videos: this will help teachers/educators evaluate their students' autonomy in accessing and using these learning materials.

July 2016

- They did not use the grill to detail the activities because these were detailed during the meetings of a committee. The group of teachers meet every 2 weeks and do an assessment during each meeting.
- The MOLVET model is similar to the approach Apprentis normally use but they didn't have a form or a grid and this one was useful to reflect about the details, the planning of activities and so on...
- The coordinators presented the project to the teachers. Every Monday they have a meeting between teachers and students and during one of these meetings teachers explained the project to the students, and they motivate the students to participate. They also explained the flipped classroom project.
- The methodology proposed is new for the students and, especially, for the teachers.
- In June they organized an half day of training for the trainers, to transfer the result of the project and to plan the new activities for some pilot classes. The aim is to have all students using flipped classroom methods and materials.

- During the event "THE SUCCESS DAY" (organized in each establishment of Apprentis) the students of LIsieux will present this project (along with the others) to other students, families, politicians, trainers etc

DEXFPIE/A FARIXA

THE MODEL

General items

Description of the Organization (10 lines)	Is a public organization that belongs to Regional Ministery of Culture, Education and University organization. It is responsible for the management of competences and functions that are attributed to the Xunta de Galicia in terms of formal education in full extension, levels and degrees, modalities and specialities. It manages all public educational centres of all non university studies
The context of the class	The project will involve students in their last year, age from 18 over, with 4 groups of students per class based on their ICT competence level. Students are from the Tourism and Audio Visual Production training programmes. About 25 students will be involved. Students attend 3 sessions a week until March (students are going to complete their training in companies.
Groups of students	After getting the results of the initial assessment and taking into account diversity, the model will be developed in 3 levels of learning growing up in difficulty, going from the lowest to the highest level. The latter being an idea-sharing session. Four working groups will be organized for this aim. Each group will prepare five questions for each of the 10 units of the module/school subject. This work will be developed throughout the academic year (depending on the timing of the contents) and it will be done in the classroom with Wi-Fi connection and tablets provided by the school. Testing and implementation will be carried out on their personal phones. The groups mentioned are organized according to the level of competence of the members, being group 1 the lowest and the highest group 4. GROUP 1: Low level of competence and low knowledge GROUP 2: Standard level of competence and the adequate level of knowledge GROUP 3: High level of competence and high level of knowledge GROUP 4: Very high level of competence and high level knowledge Group 4 will be in charge of assembling the product of each of the above design levels and also adding five introductory questions that provoke curiosity and interest.
Prerequisites	Students will require an understanding of the basis of entrepeneurship. Learners will need to be able to navigate a tablet device or smartphone.
Responsible teacher	[illegible]
Other involved teachers	[illegible]

Involved external experts	None needed

Detail items

Title of the teaching units **(10 units)**	Entrepeneurship The business environment The market The marketing Human resources Legal forms Production plan Investiment and financing Accounting and financial analysis Accounting, administrative and fiscal management
Description of goals	The main goal is to give the students the concepts required to undertake business projects applying the main techniques used in this field. Promoting entrepeneurship as an employement option Improving ICT skills
Area/subjects involved	Subject: Business and Entrepeneurship, which is a transversal subject in VET in Spain
Idea to be developed (Proposal)	The idea is to develop essential attitudes such as: creativity, innovation, entrepreneurial spirit, coordination and teamwork, self-learning and leadership
Key skills to be developed	Key skills to be developed related to the subject area are: Creativity, innovation, entrepreneurial spirit, coordination and teamwork, self-learning and leadership
Transversal skills to be developed	Transversal skills that will be involved include : Digital literacy skills in responsible use of apps on tablet devices to assist learning.
Location and timing	All tasks will be carry out in the classroom using computers and mobile devices. The classroom have internet connection. Learners will use the Moodle platform of the school to access to the basic materials at home (flipped classroom).

Methodology of work	Collaborative learning will be essential, the teacher will be a guide or coach, motivating the curiosity of the students, guiding the processes of search, analysis and management of the information needed to carry out the project. The strategies used to develop the model will be based on the inverse pedagogy (flipped classroom). This methodology leaves aside the traditional class to make use of the new technologies so that the students can organize their time learning the concepts at home and doing the homework/tasks in class. The role of the teacher changes becoming a facilitator and a modeler to learn. The teacher is no longer a person who just communicates knowledge and the student is no longer a passive learner as we have traditionally known them. This methodology is based on project work and collaborative learning where the autonomy and personal effort of the students are the main characteristics. They are a part of a group that needs to agree and for that they must research, interact, share and discuss, developing their critical thinking and assuming their responsibilities. This way they will become more independent, and they will organize their time and information better. All in all, they will learn to build up their own knowledge by means of developing their critical thinking.
Use of mobile devices and software	Each learner will have access to a computer and own device (smartphone). Software: Kahoot Prezi Moodle
Other tools	
Final Output/Product	What final Output/Product do you intend to develop? Describe it briefly. The final product will be the 10 units in the format of slide show (1 slide show per unit). Those materials will be uploaded to the Moodle platform of the school.
Storage Policy	All materials will be avaliable in the Moodle platform of the school
Evaluation criteria	Learners will do their self-assessment that will help them to develop self-criticism and reflect upon their mistakes. They will also make an assessment of their parthers and of the activity itself. Meanwhile the teacher will evaluate the achievement of the objectives through a category that will include cognitive and competence objectives established at the beginning. Likewise, the result will be tested in the reference group to detect possible errors, and then in another group, a “sample-group”, in order to finish and produce the final product.

EVENTUAL DIFFERENCES AND ADAPTATIONS FROM THE ORIGINAL MODEL TO THE ACTUAL IMPLEMENTATION, SUGGESTIONS AND OBSERVATIONS

October 2015

Intruments availables	Project's wish list	Dissemination's must know
Kahoot own mobile phone tablet desktop computer flipped classroom group work projects work	develop contents to work with in class: video tutorials, questions, data analysis Tourism and Audio Visual Production	good climate but no official cooperative initiative. meetings between coordinators and departments meetings, and meetings of the "vocational guidance team" 2 persons involved in the organization of the projectmjh

February 2016

- 2 schools are involved
- 10 learning units have been prepared in the specially developed Moodle Platform (username and password were sent by mail during the meeting).
- As introduce in Deeside meetings, use of Kohoot will be included to animate the class-group.
- Testing will be made starting from September 2016, as now in March students will leave for their internship.
- The Regional Government will buy (for September) 10 tablets for the students to support MoLVET testing as they actually do not have any digital devices.

July 2016

- After the meeting in Cambria they arranged a Pre- testing phase with 22 students of the first year. They tested some tools to choose the best ones to use:
  - ED PUZZLE
  - TED ed
  - Hapyak www.corp.hapyak.com
  - VideoNot.es Www.videonot.es
- Results of pre testing phase: students that pass the test obtain better results than other involved in traditional learning activities. They use a traditional test for the evaluation ad assessment to compare results.
- The methodology proposed is completely new for students and teachers. At first students and teachers were happy but they were not able to use the technologies and so on and this was the main problem. They nor-

work at home Teachers had to allot more time to prepare the lessons, but their involvement was fundamental for the exit of the project

- They are in a network of 19 VET centres and the idea is to share the experience of Molvet to all the network. Also, they shared the project during an important public event in Galicia and on regional TV.

SCUOLA CENTRALE FORMAZIONE - CIVIFORM

THE MODEL

General items

Description of the Organization (10 lines)	CIVIFORM – Centro Formazione Professionale di Cividale del Friuli (UD) Italia 3-year VET program on Beauty and Wellness - 2nd year
The context of the class	18 students: 17 students, one with DSA
Groups of students	The classroom will be divided into six groups of three person
Prerequisites	Enables languege, knowledge of anatomy, understanding stages of the massage, sharing of digital materials, capacity research, capacity organizational and job sharing.
Responsible teacher	Teacher technology area
Other involved teachers	Teachers : • 1 Teacher area linguistics (Italiano) • 1 Teacher area linguistics (Inglese) • 1 Teacher of Technology area • 1 Teacher of Professional area Role of teachers: • Guide students in the process of acquiring knowledge skills • Promote research of information through new digital technologies • Coordinate groups of students in the research and production of • Verification of the material produced by each group and suggestions of possibile corrections • Check with the students the path and the livels of knowledge and skills acquired
Involved external experts	Not necessary

WELLNESS

Detail items

Title of the teaching unit	CREATING AN EBOOK ON FACIAL MASSAGE
Description of goals	General aim: encooraging the sharing of experience between comrades to create the e-book; Specific aims: improvement of written communication and oral expression skills; developing creativity; enhancing the use of english technical terminology; perfecting the connection between the various specific discilpines in the sector; deeping of skills; upgrading of skills in the use of digital tools.
Area/subjects involved	Languages: Italian: communicate with appropriate and effective language; producing a written text English: learn technical terminology of the wellness industry; trnaslating a text from english into itlian and vice versa; interpreting a text Technical/professional Area: Technology: search educational material to support, better understand the various stages of the massage; ; understand maintain industry terminology Professional: undertsand identify what are the important phases of the massage; descripting through knowledge of the practice, teaching materials anatomy and cosmetology Design: building a movie and e-book
Idea to be developed (Proposal)	The project idea is in line with the student's acquisition of professional skills which are useful for the world of job. In particular they are requested to analyze a whole process and to follow its development in the different phases. Through the e-book and the movie the children learn more quickli the various stages of the massage and the correct terminology, manangin to connect multiple disciplines
Key skills to be developed	Acquisition of skills related to the massage methodology and correct termonology in anatomy and cosmetology.
Transversal skills to be developed	Ability to use multimedia tools in order to improve the effectiveness of their own communication. Ability in mutual support and cooperative learning. Acquisition of skill in respecting the timing and the stages of the work.
Location and timing	The activities take place in the classroom and in the professional lab. The classroom is a conventional classroom with PC, video projector, Wi-Fi and internet access. The lab is equipped with video projector, PC, Wi-Fi and internet access. 50 hours of lessons including 3 hours of Italian lessons, 5 hours of english lessons, 10 hours in professional lab and 36 hours of anatomy and chemistry

Methodology of work	• Phase 1: Knowledge acquisition activities (inform students about the resources to be used according to the chosen theme, in this case the creation of a eBook and facilitate the search) • Phase 2: Comprehension and elaborating the information gathered in phase 1. • Phase 3: Realization of the final product: eBook
Use of mobile devices and software	Tools and technologies. Each student will have a tablet. For this specific project we intend to use: • APP-Pinterest, • APP Prezi, Kahoot, pow toon • APP Supermappelite, • APP VisAnatomyLite, • APP AnatomiainApp, • APP Organs3d • APP Aurasma • APP Dropbox • SOFTWARE-Outlook • SOFTWARE-Lightworks All students also have access to the INN platform of the organization.
Other tools	PC; Videocamera
Final Output/Product	The product will be a eBook
Storage Policy	The eBook wiil be saved in Dropbox The video realizaded by the students with Lightworks will be saved in MP4 format and will be stored in Dropbox
Evaluation criteria	The students will be evaluated according to their gained competences: • advanced; • intermediate; • elementary; • result not achieved.

Phases of the project and related activities

Structure of the course

Phases	Activities	Location/Timing
Phase 1: Knowledge acquisition	Presentation of the project and overview of the transversal skills search in group checked by the technology area	In classroom 2 hours
	Vision of the different stages of the massage and focus in the eye area and the mouth	In lab 3 hours
	Overview the technical and professional skills search in group checked by the technology teacher. Search for resources.	In classroom 16 hours
Phase 2: Comprehension and elaboration of the gathered information	Each group will produce a chapter of the ebook related to its topic to share with the class	In classroom 6 hours
	Each group with the italian teacher to correct the text of eBook	In classroom 3 hours
	Each group with the english teacher translate the text	In classroom 3 hours
	Shooting facial massage	In lab 3 hours
Phase 3: Realization of the final product	Selection of the filming of the video focusing on eye and mouth	In lab 2 hours
	Realization of the eBook Layout of the chapter, export it and upload to the web. Upload to the Dropbox	In classroom 15 hours

GRAPHIC

Detail items

Title of the teaching unit	CREATION OF AN INTERACTIVE MAP ON PRINTING PROCESS
Description of goals	General: encooraging the sharing of experience between comrades to create a conceptual map Specific: improvement of written communication and oral expression skills; developing creativity; enhancing the use of english technical terminology; perfecting the connection between the various specific discilpines in the sector; deeping of skills; upgrading of skills in the use of digital tools.

Area/subjects involved	Languages Italian: communicate with appropriate and effective language; producing a written text English: learn technical terminology of a text Technical/professional Area: Correctly use technical temrs in the composition of a written text, recognizion, analysis and investigation on main printing techniques. Planning/Design: create a funcional and graphically correct design for the conceptual map. Lab: learn to find in authonomy the best apps to reach the aim intended (vcreate video, QR codes, augmented reality...)
Idea to be developed (Proposal)	The aim of the project is the creation of an interactive conceptual map. Learners will have to design a graphic illustrating the more diffused printing systems. Every process will be connected to a QR code and a photographic target. Both will send users to a video, realized by the students. The video will explain the specific printing process, with auio in italian nad englush subtitles.
Key skills to be developed	Ability to fluently express oneself in Italian and to translate to English in written form. Professional skills: create and modify texts, images, graphics, audio and video.
Transversal skills to be developed	Ability to use multimedia tools in order to improve the effectiveness of their own communication. Ability in mutual support and cooperative learning. Acquisition of skill in respecting the timing and the stages of the work.
Location and timing	The activities take place in the classroom and in the graphic lab He classroom has LIM, PC, videoprojector, audio hometeather, intranet wi-fi and internet wi-fi. Labs have 25 iMac with Adobe Suite and webcam, videoprojector, printer, 5 cameras with light and stands. The project will last 65h: 10h italian, 5h english, 50h graphic.
Methodology of work	• Fase 1: Knowledge acquisition activities (inform students about the resources available, timing, ecc) • Fase 2: Creation of the texts, translation and design of the map • Fase 3: Video and audio file production • Fase 4: Monitoring of the files, subtitles on video, optimization for different supports • Fase 5: Video editing, creation of augmented reality targets, final layout of the map and printing.

Use of mobile devices and software	Every students will be able to use iPad Air 2 and personal smartphones More specifically: • APP-iTunesU • APP-Mail • APP-Dropbox • APP-Pages • APP-QR Code • APP-Aurasma • APP-Fotocamera • APP-iMovie
Other tools	Other Mac Aps (Adobe InDesign, Adobe Illustrator, LightWorks, Transmit),
Final Output/Product	Interactive conceptual map on the printing processes, with QR code and Aurasma linking to videos on the theme, italian spoken and english sub.
Storage Policy	The conceptual map will be printed but will also be available as file.
Evaluation criteria	The students will be evaluated according to their gained competences:: • reached; • partially reached; • not reached

Phases of the project and related activities

Structure of the course

Phases	Activities	Location/Timing
Phase 1: Knowledge acquisition	Presentation illof the project and overview of the transversal skills search in group checked by the Italian teacher.	In classroom 2 hours
	The same process will be followed for the historical subject supported by videos.	In classroom 2 hours
	Overview the technical and professional skills search in group checked by the graphic design teacher. Search for resources.	In lab 3 hours

Phases	Activities	Location/Timing
Phase 2: Comprehension and elaboration of the gathered information	Share of information and summary during the Italian lesson. Draft of the storyboard.	In classroom 6 hours
	Analyze of information and comparison in the historical context.	In classroom 3 hours
	Choice of the characters and setting of the story	In classroom 3 hours
Phase 3: Realization of the final product	Selection of the speeches to be introduced in the comic strips.	In classroom 2 hours
	Realization of the photographic shot and converting in the comic strips. Layout of the comic strip, export it and upload to the web. Realization of the video for the presentation and recording of the audio. Merge the video and the audio and subtitle the explication. Upload to the INN platform.	In classroom 15 hours

EVENTUAL DIFFERENCES AND ADAPTATIONS FROM THE ORIGINAL MODEL TO THE ACTUAL IMPLEMENTATION, SUGGESTIONS AND OBSERVATIONS

October 2015

Intruments availables	Project's wish list	Dissemination's must know
Ict facilities maybe ipads	something for the career of Wellness or Electrician and Graphic For graphic: intruction on how to realize a leaflet/book. Video tutorial, Conceptual map (language)	an Innovation and Project Implementation department teachers of a same area share advises strict instructions on what is possible by regione friuli

July 2016

- They already had model, used in all schools of Friuli. But is totally different because is based on the acquisition of the competences during the three year course, it regards only the professional area and not the theoretical part. The Molvet model was very useful as a shared tool for the planning of the activities.
- The students gave very good feedbacks, and were very engaged by the use of the online tools (Pinterest, Google classroom)

COLEG CAMBRIA

THE MODEL

General items

Description of the Organization (10 lines)	Coleg Cambria is one of the largest Further Education institutions in the UK serving North Wales and the North West of England from its six sites. We have over 5,000 full-time learners and 15,000 part-time and work-based learners each year, employing over 1,400 staff, with an annual income of £55million. We offer one of the widest curriculum portfolios of any college in Wales from pre entry level to post graduate level 7. Working in partnership with over 1000 employers including international companies such as Airbus, JCB and Kellogg's and significant regional employers such as Kronospan, Moneypenny and Village Bakery. The course will be delivered at Coleg Cambria's Deeside site in North East Wales.
The context of the class	1 year City and Guilds level 1 Basic Skills in Construction 6219 9 learners in this group aged 15 - 16 The learners are from a Pupil Referral Unit and have all been removed from mainstream education for behaviour issues. Learners attend two 3 hour sessions on the day they come to Coleg Cambria, one session in the morning and the other in the afternoon. Attendance varies with 3 – 9 learners per session
Groups of students	Students will be working on tasks individually and in pairs to encourage peer learning.
Prerequisites	For subject related skills the learners will require an understanding of the construction skills needed in order to complete the tasks for the two trades (Brickwork and Joinery). For transversal skills (in this case digital literacy / ILT) the learners will need to be able to navigate a tablet device (IOS or android) and use a QR code scanner. Other ILT skills will be developed during the project.
Responsible teacher	Project coordinator / Teacher Training Lecturer
Other involved teachers	Lecturers 1 Brickwork / Joinery lecturer 1 Joinery lecturer 1 Teaching Training Lecturer/ ILT support 1 Deputy Director for Construction
Involved external experts	None needed – although good practice from other colleges will inform the project.

Detail items

<table>
<tr><td>Title of the teaching unit</td><td>
<table>
<tr><th>Joinery</th><th>Brickwork</th></tr>
<tr><td>Basic Joints</td><td>Half brick walling</td></tr>
</table>
</td></tr>
<tr><td>Description of goals</td><td>Learner independence and responsibility for own learning.

Freeing up of tutor time to help the less able learner to receive more 1:1 guidance
<table>
<tr><th>Joinery</th><th>Brickwork</th></tr>
<tr><td>Marking out of basic joints</td><td>Constructing a half brick wall</td></tr>
<tr><td>Use for various hand tools</td><td>Tools and techniques used</td></tr>
</table>
Digital literacy skills / ILT skills</td></tr>
<tr><td>Area/subjects involved</td><td>Vocational area Construction Joinery & Brickwork</td></tr>
<tr><td>Idea to be developed (Proposal)</td><td>Learning experiences can be enhanced by adopting discrete trial training methods. These methods will use video instruction presented in a mind map to support and promote independent learning where learners can learn at their own pace with the tutor facilitating and supporting the less able learners.

Video analysis will be used for constructive feedback to help develop learner's skills in construction.

Learners will develop their presentation skills when making video demonstrations for future learners. The idea being presentations from young learners, rather than lecturers, about how to perform skills properly will further engage future learners.</td></tr>
<tr><td>Key skills to be developed</td><td>Key skills to be developed related to the subject area are:
<table>
<tr><th>Joinery</th><th>Brickwork</th></tr>
<tr><td>Marking out of the basic joints</td><td>Holding a trowel correctly</td></tr>
<tr><td>Selecting the correct tool and its use</td><td>Rolling of the mortar</td></tr>
<tr><td>Cutting out sequence</td><td>Spreading the mortar</td></tr>
<tr><td></td><td>Setting out the wall</td></tr>
<tr><td></td><td>Laying the first brick and levelling</td></tr>
<tr><td></td><td>Constructing a corner</td></tr>
<tr><td></td><td>Infilling of wall off corner using line and corner blocks</td></tr>
<tr><td></td><td>Jointing of brickwork</td></tr>
</table>
</td></tr>
</table>

Transversal skills to be developed	Transversal skills that will be involved include : Digital literacy skills in responsible use of apps on tablet devices to assist learning. Use of video analysis tools Video recording and editing Creation of video demonstrations for future cohorts to use (video editing, creating mind maps, creating QR codes, communication / presentation skills)
Location and timing	Joinery tasks and filming will be carried out in the Joinery Workshop Brickwork tasks and filming will be carried out in the Brick Workshop. Both workshops have Wi-Fi connections within Video editing will take place in the Teacher Training office and the Learning Zone. Learners can also study video demonstrations (flipped classroom) and access video analysis feedback of their practical skills from home.
Methodology of work	For the key skills related to carpentry and brickwork learners will be working individually or can be working in pairs to carry out the required tasks. Learners can also refresh the knowledge and techniques at home by adopting the resources in a flipped classroom approach. Learners will learn how to carry out video and photo analysis by observing their tutor using video and photo analysis applications. Learners will also be able to access the step by step guides on how to use the relevant apps such as Skitch and coach my video. Learners will also watch a step by step video on how to create a storyboard using go animate and how to create a mind map using Simplemind.
Use of mobile devices and software	What multimedia tools and other tools will be used? What mobile devices do you intend to use and how will they be used during teaching activities? Each learner will have access to a College tablet or own device (smartphone). The required resources to access the video's through the use of QR codes Chromebooks will be used to access Google Community / Google + for video analysis outputs CoachMyVideo / Coach's Eye / Skitch for video analysis and feedback WeVideo for video editing SimpleMind for mindmaps
Other tools	Trade specific tools for each sector Joinery, Brickwork

Final Output/Product	What final Output/Product do you intend to develop? Describe it briefly. Information will be presented to the learner in the format of a mind map incorporating a method of discrete trial training. Videos will be linked to using a QR code. On the mind map events will be presented in a logical order where the learner is able to flow through the numbered sequence to perform each component part of the task. By creating the short video demonstration for each sequence learners will be able to access the relevant information almost instantly by selecting the correct video for each step. The instructional mind map will also be used in conjunction with a full size Model of the joint being constructed, or drawing of the wall being constructed this will enable the learner to also study the model/drawing. Learner work in producing brickwork and joinery tasks set Learner video demonstrations.
Storage Policy	Laminated mind maps for use in the workshops, PDF documents of each mind map will be available for the learners to access from home or in the workshop on google drive/ google community. Video demonstrations will be stored unlisted on tutors' Coleg Cambria YouTube accounts, only people with the link / QR code can view them. Video analysis feedback will be stored in tutors Google account and shared with learners using their College Google + account.
Evaluation criteria	What evaluation criteria will you use? Describe them briefly When using the video demonstrations in class a record will be kept of how much tutor time was used in assisting learners in order to complete the task. The learners will be asked to complete a sheet identifying the amount of times they recalled video demonstrations in order to complete the task. Learners will not be assisted unless help is requested by the learner. These methods will be adopted in order to assure that the findings are as accurate as possible. The first time each learner access's the video is not included in the findings as all learners had to watch each video once. The less able learners will have been identified in previous sessions. Learners will use the video and photo analysis applications to peer and self-assess their practical skills against the criteria. Once learners have identified any improvements to be made they will then create animated videos to show how to carry out their practical skill. This will be developed making constant reference to the feedback from the video analysis. Learners will self and peer assess the final animated videos before applying a QR code to each video.

Phases of the project and related activities

Structure of the course

Phases	Activities	Location/Timing
Phase 1: Knowledge acquisition	Overview of the assignment brief, identifying the key subject skills and transversal skills that will be developed. Demonstration and observation of learners accessing the QR codes and tutor demonstration videos of technical skills via the interactive mind map.	2 hours (in classroom)
	Learners to use Flipped classroom approach and watch videos prior to each practical session.	2 hours (at home)
	Learners develop key subject skills using the videos to assist in performing the practical key skill tasks. Learners will develop the following skills throughout the year. Learners can refresh their knowledge using the QR codes to access the video. Learners who need more support can be assisted by the tutor. **Joinery** Marking out the basic joints Mortice and tenor joint Selecting the correct tool and its use Cutting out sequence **Brickwork** Holding the trowel correctly Rolling of the mortar Spreading the mortar Setting out the wall Laying the first brick and levelling Constructing a corner Infilling of wall off corner using line and corner blocks Jointing of brickwork	2 hours (in classroom to develop each practical skill) 2 hours (at home to practice skill)

Phases	Activities	Location/Timing
Phase 2: Comprehension and elaboration of the gathered information	Learners will film their practical skills and take photographs – peer filming in the classroom. Discussion and workshop to develop peer assessment skills.	2 hours (in classroom)
	Demonstration and observation of video analysis and photo analysis applications. Learners to use videos and photos from previous session and carry out video and photo analysis using peer assessment	2 hours (in classroom)
	Learners to share analysed videos and photos via google community or google plus Provide self and peer feedback on the community of other learner's video/ photo analysis.	2 hours (at home)
	Learners to engage in discussion and group activity on how to provide clear instructions and communicate effectively to their peers.	2 hours (in classroom)
	Learners to watch a (step by step) tutor video on how to create a step by step guide of procedure (storyboard) using go animate, Powtoon or Videoscribe **https://youtu.be/3tB6G-7vF55w**	1 hour (at home)
Phase 3: Realization of the final product	Learners create a storyboard/ step by step guide to show how to carry out a procedure. Each learner creates a storyboard for a different practical skill. Learners to use animate, Powtoon or Videoscribe to turn their storyboard into an animated video.	6 hours (in classroom)
	Learners to learn how to create a QR code or Aurasma to access their completed animation videos. Learners to work collaboratively and create an interactive mind map using the QR codes or Aurasma to access each animated video.	2 hours (in classroom)
	Learners to peer assess each other's animated videos.	1 hour (at home)

EVENTUAL DIFFERENCES AND ADAPTATIONS FROM THE ORIGINAL MODEL TO THE ACTUAL IMPLEMENTATION, SUGGESTIONS AND OBSERVATIONS

October 2015

Intruments availables	Project's wish list	Dissemination's must know
Google Apps for Education Google Chromebooks Moodle ePortfolios own devices Tablets other free Apps (...) interactive posters video Facebook and twitter flipped classroom videoclip apps collaboratve work (google docs)	Apps, Videos, interactive posters enabled differentiation using augmented reality	staff training days: Teachers share their knowledge previous projects evaluated through learner surveys and discussions with staff

February 2016

- Group of students involved was changed. It was originally made of 9 students but as they "lost" some of them they decided to change the target. Now, project activities involve:
  - 1st group: 34 part-time learners (students attending mainstream education and college for 4h/week
  - 2nd group: 25 1-level students aged 16-31 (they will start in the next few weeks).
- Each QR code corresponds to a new video made for the students in this project. Videos are available on YouTube.
- This choice (QR code instead of Aurasma) is to simplify access to learning materials by all learners.
- Use of "Wevideo" by students to make their own videos: these are used for both formative and somatic evaluation and to increase the video library too.
- Google Docs is also used to support evaluation and give feedback so to students.
- During the class, learners may do very different activities: learning is absolutely personalized and individualized.
- MindMap: practical activities incorporating theoretical aspects and skills too.

July 2016

- The model for the planning of activities was very useful
- The project has been extended to other Coleg Cambria courses
- Strong points were the reduction fo paper and the individualization of learning path, weak points the lack of devices

SCUOLA CENTRALE FORMAZIONE - FONDAZIONE OPERA MONTEGRAPPA

THE MODEL

General items

Description of the Organization	Fondazione Opera Monte Grappa - Vocational Training Centre of Fonte, Piazza San Pietro, 9 Three-year vocational qualification course "Tourist information centre assistant" Second year
The context of the class	17 students, 1 student with learning disabilities (dyslexia), 10 male and 7 female students, 6 of them are immigrants (1 from Moldova, 1 from Croatia, 1 from Dominican Republic, 1 from Ukraine and 2 from Romania)
Groups of learners	The class will be divided into 3 groups of 4 and 1 group of 5, with at least an immigrant in each group. The student with learning disabilities will be integrated into the group which is characterized by stronger competences in peer to peer relationships and language skills.
Prerequisites	Strong Italian and basic English language skills; specific language skills of the tourism branch
Responsible staff member	Coordination of the whole project

Other involved staff	TEACHERS: • 1 IT teacher • 1 English teacher • 1 Law teacher • 1 teacher of the technical – professional area TEACHERS' ROLE: • Guiding the knowledge acquisition process of the soft / transversal and professional skills requested • Controlling the elaboration processes of the communicative materials by guiding and correcting students when necessary • Checking the material produced by each student and suggesting changes and adjustments • Coordinating the processing of the class's artcraft
Involved external experts	Not needed

Detail items

Title of the teaching unit	A video guide to Prosecco region
Idea to be developed (Proposal)	The province of Treviso offers a great variety of touristic attractions, but unfortunately they are far from being well-known abroad; moreover tourist reception facilities are underdeveloped because of lack of professional assistance. Therefore our school caught the opportunity to establish a vocational training course for tourist information centre assistant. In order to improve the professional skills of the students the involved teachers have figured this project to materialize the theoretical notions learnt by the students during the first year.
Description of goals	GENERAL GOAL: familiarizing students with the professional tourism context, giving an example of ITC marketing techniques. SPECIFIC GOALS: improving the communication skills of the students in the presentation of their territory (historical monuments, local artists, naturalistic and archaeological beauties). Consolidation of the ability to use digital tools and technologies. Strengthening the language skills in Italian and English.
Key skills to be developed	The following professional skills will be developed: Communication skills (both Italian and English) Regional expertise (folk, arts, architecture topics)
Other subjects involved	Tourism techniques IT skills and movie editing Knowledge of legal management of copyright and privacy issues

Transferable skills to be developed	planning speaking in public computer skills desire to learn and improve being expressive team working
Location and timing	The project will take place on the school premises, inside the usual classroom (provided with IWB) and the IT lab. Moreover, the movie clips will be shot as much as possible outdoor, in the places that will be promoted through the video. The entire project will take 30 hours to be realized. The total amount is divided as follows: 14 hours tourism techniques and regional expertise 8 hours english 2 hours law 6 hours ICT
Methodology of work	Jigsaw technique Cooperative learning: Working in small groups Studying the local attractions and tourism facilities, also through on-site visits Working from home or after school hours, even in mixed groups
Use of mobile devices and software	Each student will get a tablet to use as a platform for planning, taking notes, filming and sharing information within his working group. The IT lab will be available for editing movie and sound clips as well as images for the final presentation of the project. The following software and apps will be used: Polaris Office 5 for taking notes and for the distribution of study material and different tasks by teachers SimpleMind Free Maps for mind mapping PowerPoint to develop the storyboard of the presentation Wordreference as dictionary support for translations into English Paper Artist to edit images and Movie Maker to assemble the video
Other tools	The Internet, to collect further information about hotels, restaurants and other appropriate facilities.
Final Output/Product	The project aims to the production of a short presentation movie in Italian language (with English subtitles), whose subject is the promotion of the Prosecco region.
Storage Policy	The 5-minute-video realized by the students will be saved in MP4 format and will be uploaded on YouTube and then embedded on the school website, so that it may be available for everyone to see. The project will be stored on the school server in a dedicated folder, available for future use or further improvement.

Evaluation criteria	The students will be evaluated according to their gained competences: • advanced • intermediate • elementary • competence not achieved

Phases of the project and related activities

Structure of the course

Phases	Activities	Location/Timing
Phase 1: Knowledge acquisition	Presentation of the project by the trainers of the different subjects	2,5 hours in the classroom
	The trainer provides indications and methodologies for the acquisition of resources and information	2,5 hours in the classroom
Phase 2: Comprehension and elaboration of the gathered information	Brain storming and planning of group work Mind mapping of the presentation structure and duties assignment Group research of useful information to fill in the structure Improvement of communication skills both in Italian and English language Improvement of all technological skills needed to realize the movie clip Selection and classification of the collected material	15 hours in the classroom
Phase 3: Realization of the final product	Shooting of movie clips Recording of commentaries Editing and mixing of images and sound Graphics for titles and subtitles	9 hours in total, spent outdoor for filming sessions and in the IT lab for editing work
	Final presentation and discussion of the product	1 hour in the school Aula Magna

EVENTUAL DIFFERENCES AND ADAPTATIONS FROM THE ORIGINAL MODEL TO THE ACTUAL IMPLEMENTATION

October 2015

Intruments availables	Project's wish list	Dissemination's must know
LIM Tablet a vieo promoting the school available on youtube	Videos with eng sub for promotion of the prosecco region flipped classroom Tourism and language	promotion of focus groups and training on specific areas

TCMB AND ZUBEYDE

THE MODEL

General items

Description of the Organization	T.C.M.B. Technical and Vocational High School is a public-state school is in Istanbul. Currently with around 1600 students (ages between 14-19), 102 teachers, one headmaster and 6 vice principles there are electrics-electronics, chemical processing , civil engineering and HVAC are main fields. Has a great network including stakeholders, private sector, industry, NGOs, other schools,vocational training centers, adult education centers, other types of organizations and decision-makers. In the "Lifelong Learning " modular program; yearly near 5000 adults are attending 60 hours certificate programme courses in our institution accreditted by the Turkish Ministry of National Education. EU relations and international affairs are higly considered in the institution.
The context of the class	11th and 12th grades. 34 students in a class. No special needs. But there may be inclusions.
Groups of learners	The population class is 34. And the class is divided into 3 or 4 groups. 1 trainer for each group.
Prerequisites	Should be successful with the basic electrics & electronics subjects Knowledge of AC engine types is required.
Responsible staff member	Headmaster
Other involved staff	• Trainer/Lecturer • Trainer/Lecturer
Involved external experts	Fatih project – Megep project run by M.O.N.E.

Detail items

Title of the teaching unit	Ac Machines with the household electrical gadgets.
Idea to be developed (Proposal)	Requested by M.O.N.E. with the MEGEP project (developing vocational training)
Description of goals	This module is provided with the necessary electrical household environment alternating current motors found in appliances and types for students. And it will support the trainer to evaluate easily all the processes with the installation and maintanence
Key skills to be developed	Students will gain • Ability to installation, • troubleshooting and maintenance operations • teamwork • self-confidence • hand-craft skills On the next step students will be able to provide. 1. Electrical appliances used in A.C. engine 2. A.C. used in electrical household appliances of motor
Other subjects involved	Technical English IT and use technology (applications & programmes) Technical drawing
Transferable skills to be developed	Use of Technical English Communication Maintanance and Installation Use of Technology and apps
Location and timing	Takes place at : Workshops, Labs At the last level (12th grades) 3 days (24 hours) a week on the job training (apprenticeship) 24 hours per week at school (11th grade) 2 hours a week at home (homework – research – report)

Methodology of work	Presentation Demonstration Working in small groups Pre-study with simulation Evaluation - Practice exams with real models
Use of mobile devices and software	Android smart boards (Fatih project) Tablets Applications Experimental sets
Other tools	Mechatronics and automation sets used with computers
Final Output/Product	Students know the structure and assembly of these connection types and able to maintain and repair.A.C. used in electrical household appliances motor types. Students can prepare a digital instruction guidebook for a specific household gadget as a project work at the end.
Storage Policy	Project works to be downloaded on the website of the school. Dissemination to other vocational schools by sharing it with M.O.N.E. Presenting it at technical exhibitions held in May annually. Presnting it at in-service trainings
Evaluation criteria	Self-evaluation using check list Practice exams

EVENTUAL DIFFERENCES AND ADAPTATIONS FROM THE ORIGINAL MODEL TO THE ACTUAL IMPLEMENTATION, SUGGESTIONS AND OBSERVATIONS

October 2015

TMCB

Intruments availables	Project's wish list	Dissemination's must know
Smartboard Tablets Android Internet, not always wifi Group work, cooperative learning, problem solving.	3 or 4 group, each with one trainer. Maintenance and installation of electrical households. Create an instruction digital guidebook for specific household tool, also with video	big school, many interdisciplinary projects, "tradition" of involvement in all kind of projects, based on voluntary participation

Zubeyde

Intruments availables	Project's wish list	Dissemination's must know
Smartboard Android Internet group work case study problem solving e-newspaper	Web programming and web desigining use of flash animation Video with sub Website in Turkish and English	periodical meetings of teachers of the same subject ICT teachers support the rest of the teachers in the use of tecnology

February 2016

TMCB

- Made 2 training sessions with 7 teachers from the Electricity/Electronic Department.
- Are involving 2 classes (pneumatic system in automation): 26 students and 33 sediments respectively aged 15-17. Students are usually divided in 2 subgroups (especially for labs).
- Use of: Kohoot, Aurasma and Antropi (a Turkish App to prepare lessons within can also be used with the whiteboard).
- In the future, they plan to use also: Skitch, Coach's eyes, Google classroom (e.g. for evaluation), and, Prezi.

- Already transferred use of Apps they learnt in this prospect in other 2 EU projects.

Zubeyde

- Testing activities will be implemented from September 2016. Actually the school was under some very important restructuring that made very difficult organizing testing. Moreover, the Government furnished tablets for the staff but not for the students yet which is expected in 5 months.
- Made meeting with school master and responsible.
- They are using some Apps with students' own devices when they assign home works.
- They are actually introducing Apps in the ICT department, but since September in the graphic and chemistry Depts. too. Teachers and students use the same Apps.
- Materials are stocked in the school Google Drive.

July 2016

Both schools

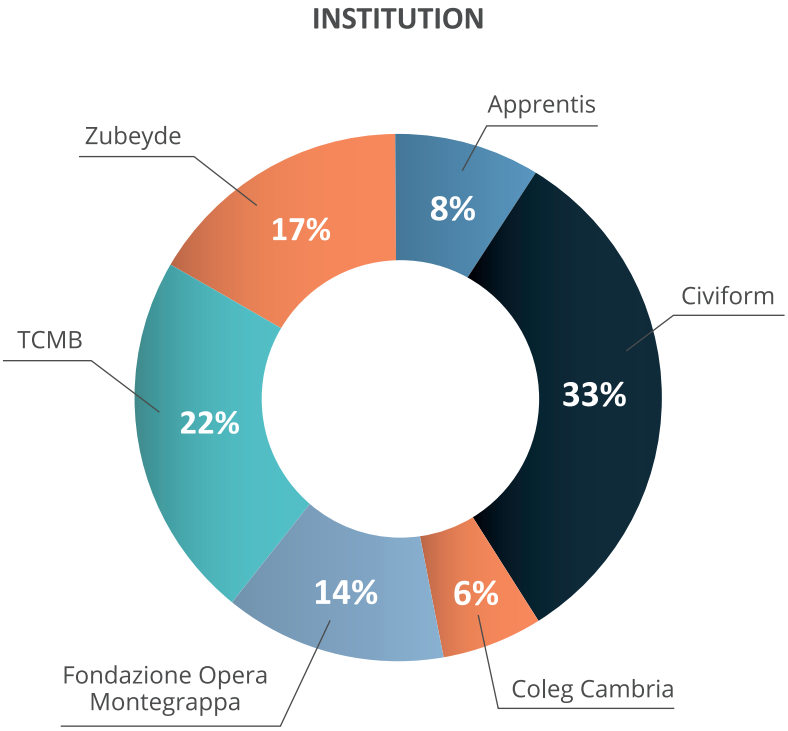
- They have never worked on a model such the one proposed by Molvet and had to change it many times
- TCMB augmented the classes involved to 3, with 3 teachers directly involved in the project. About 60 of the 100 teacher of the school were indirectly involved and have experimented with some App.
- In Zubeyde also there were 3 classes and 3 teachers involved, and about 50 teachers indirectly involved. The problem was that some teachers didn t want to use technologies

EVALUATING THE WORK DONE

First round of evaluation: what lesson can be learned and how can we use it to address the future actions. The questionnaires were submitted to learners and educators just before the beginning of the activities, to gain a better vision of the partners' situations, and also to create a baseline in case of future evaluation.

STUDENT'S QUESTIONNAIRE

Where do you study?



The data from all the institutions are presented together. Clearly some institution will have a greater weight on the average result as more students participated, but we do not have reason to believe that students should have different opinions on the basis of the institution they attend, therefore this is not considered to be a problem.

What type of mobile device do you use? Can you list all of them?

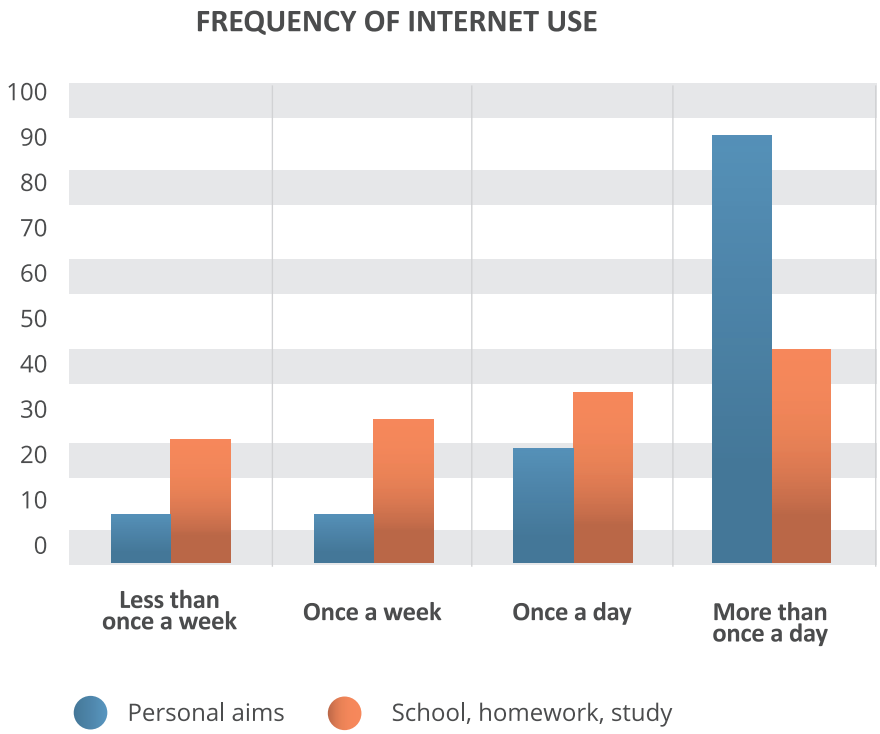
What is the operative system of the mobile device you use more often?

What apps do you use most often?

What apps do you use for school?

How often do you use Internet for personal aims?

How often do you use Internet for school, homework or study?

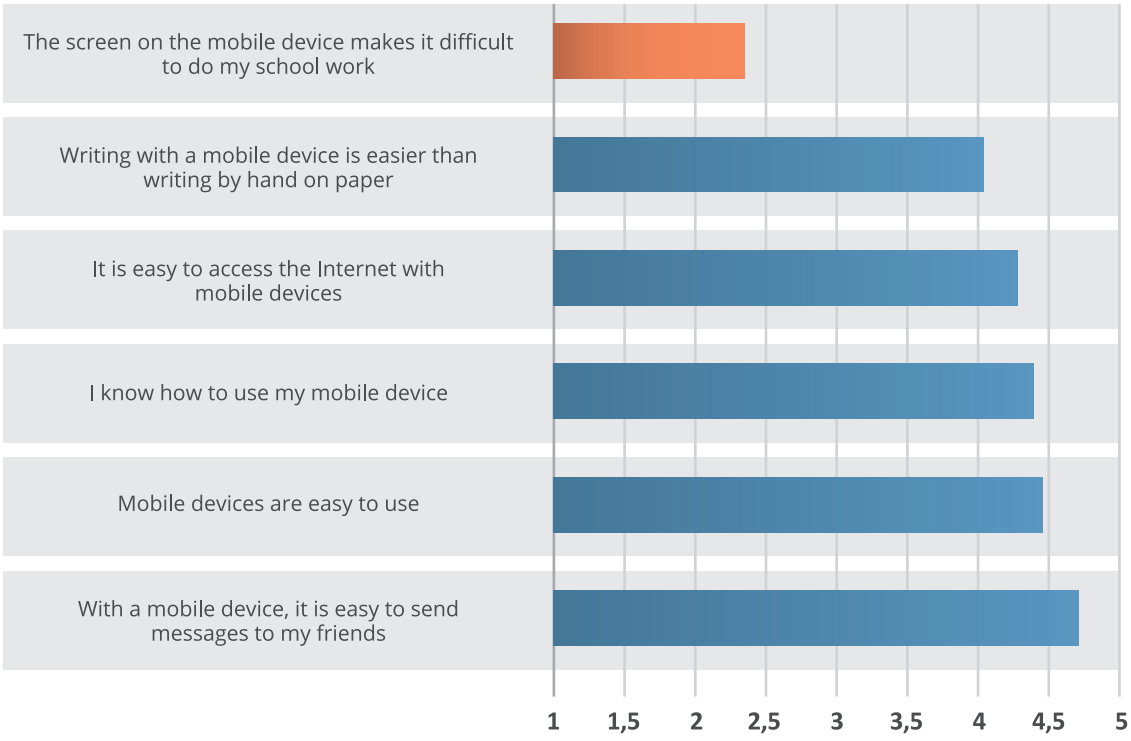


The smartphone is by far the most widely adopted mobile device, and in most of the cases the operative system used is android. Students mostly use apps that allow to connect and communicate, such as whatsapp, facebook and instagram, while there is greater variety on the apps adopted for school, that cover different aims, from communication to research, or are used for specific activities such as Indesign or Word. Surely the use for personal aims is more frequent than the one for school, but it is still interesting to note that internet is definitely included in the school routine of most of the students.

Technical aspects of using a mobile device

Generally, mobile devices are evaluated as easily used for school aims, with mean values between 4 and 5 for all positive items (on a scale going from 1 to 5).

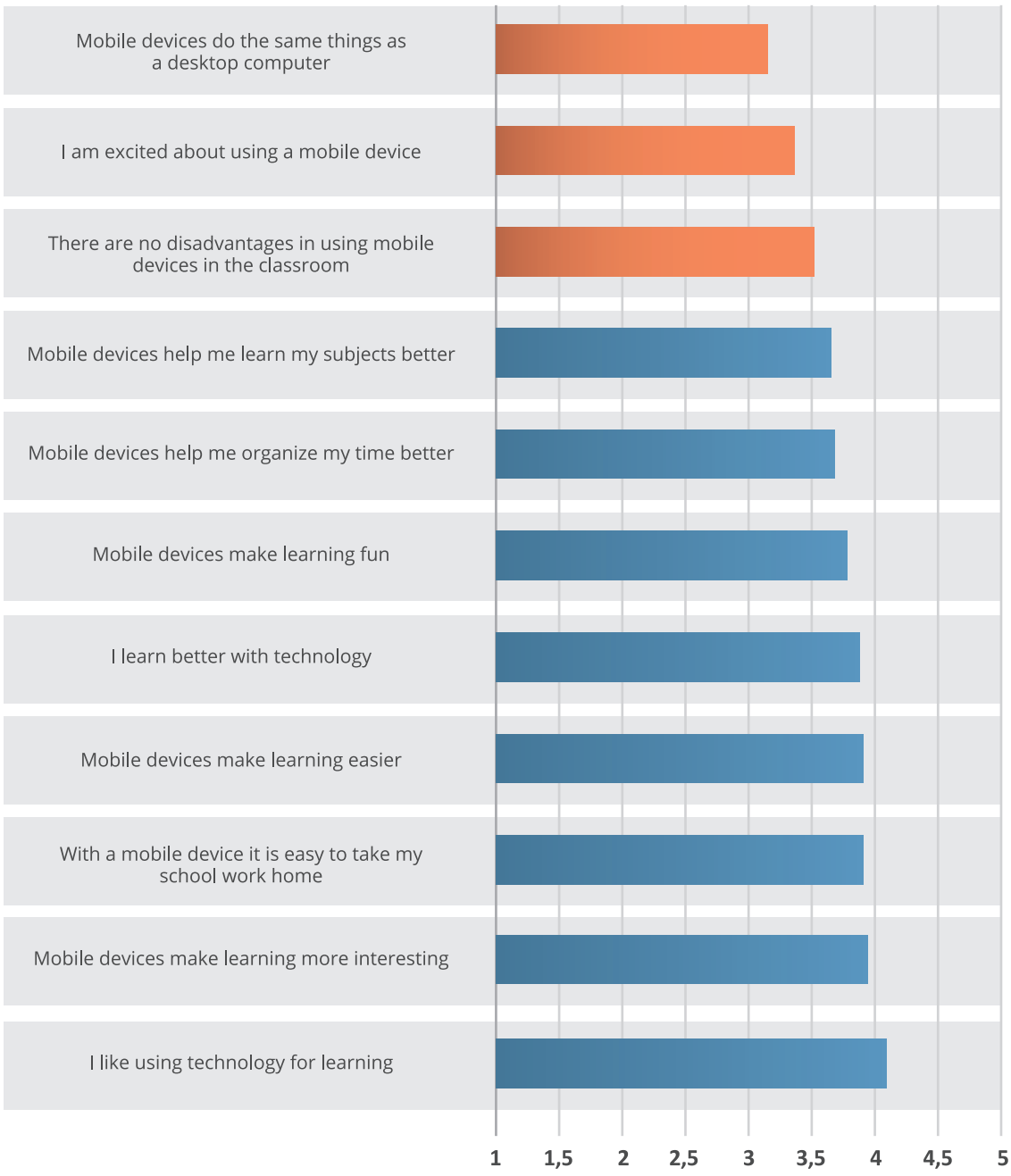
Mean values



Learning with mobile devices

When asked more specifically to evaluate the use of mobile devices for learning activities thought, the mean values are lower, with only one item reaching 4 (I like using technology for learning). Not everybody seems to agree on the idea that mobile devices make learning easier, more fun, or more efficient. Moreover there seems to be awareness of potential problems connected with the use of mobile devices at school (some of these are also expressed in the open question).

Mean values



The answers to the open question "What do you think about using mobile devices and Internet for school?" can be organized around 8 leading themes:

- Helpful (30 answers)

- Generally a good idea (28 answers)
- Has pro and cons and/or can be improved (5 answers)
- Necessary (5 answers)
- Interesting/Fun (4 answers)
- Allow free wifi (4 answers)
- It's good to learn how to use the technology (2 answers)
- Not so good (7 answers)
- We want tablet ~~(2)~~ (6 answers)

Mostly the students show enthusiasm and positive attitude to the introduction of mobile devices in education. Mobile devises are seen as "good", "Fine and fast convenient", and "A big change for the school system". They are considered useful because "they're easier and quicker to learn with", "helps the students organize the time better", "it is important to update schools". These tools can be used to "gather information", are "helpful for the homework", "easily reach communication". Using mobile device to study has also other benefits: "lessons are more entertaining and practical", "exciting", "interesting".

Some student has an even more extreme position and consider the migration to digital as a real necessity for school to be up to date with the outside world. "I think it's a technology that is proven , since we are in 2016 , and today we still use books. In addition , using the tablet , we have less paper waste , and as today more and more prevails the phenomenon of deforestation , consuming paper when we can avoid it is unacceptable!"

Some student point out some of the problems of the integration of digital devices in the classroom: the integration "needs improvement", and "would be better if it is used for more exciting thing". Possibly in some school experimentation has not started yet as students observe that "There have to be Wi-Fi in schools", "it would be nice if they let us to use", "I think it should not be banned. Communication Is most natural human rights.", and "we want tablets".

Naturally, there is also some different, negative opinion, although it's a minority of them. Mostly they focus on the idea that the old methods of studying should be preferred and preserved. Opinion go from more mild opposition, such as: "It is an interesting idea But It isn't necessary", "it is a good idea for looking up information on the topic but easy for pupils to get distracted and go off topic", "it's fun, but not always", "I prefer using book for studying and mobile devices for research" to a more stern opinion: "Unnecessary application of school subjects cannot use the tablet as an absurd system. Writing paper and pencil is always better and more permanent system. In addition, self-discipline is more important to learn instead of mobile devices".

What do you think about using mobile devices and Internet for school?

Helpful	i think it is very important for student because it makes learning more easier for student
	It's an interesting idea and really helpful
	Ca nous aide
	intresting,you can learn
	I think that the school can benefit from using these as they're easier and quicker to learn with
	I think it's a quick and easy way to learn
	i think it is a good idea to use my phone to help me learn
	I think it helps to study
	It Is more esier
	They are useful
	It's better to use the tabet because you understand better
	I support the use of mobile devices in school because the technology helps the students learning and organize the time better
	I think it is very useful because learning is easier and it is important to update schools
	I think it is very useful because learning is easier using mobile device
	i think the technology is very usefull for helping student's learning
	I think that using mobile devices and internet help students to learn easier than a normal lesson
	i think that mobile devices are useful
	i think that it is useful for some lessons
	I think that mobile devices are useful for school
	I think using mobile devices and internet at school is very important for learning. Students learn better with technology devices
	I think it is useful to gather information.
	I think using mobile devices is very easy and helpful for the homework
	I think it is useful
	Everything is getting easier. we can easily reach communication and the other things we want to know
	Useful and Helpful
	It would be better It would be nice
	It makes learning easier
	easy to use and education is healthy
	We make our job easier with mobile devices
	I think it makes our lessons easier

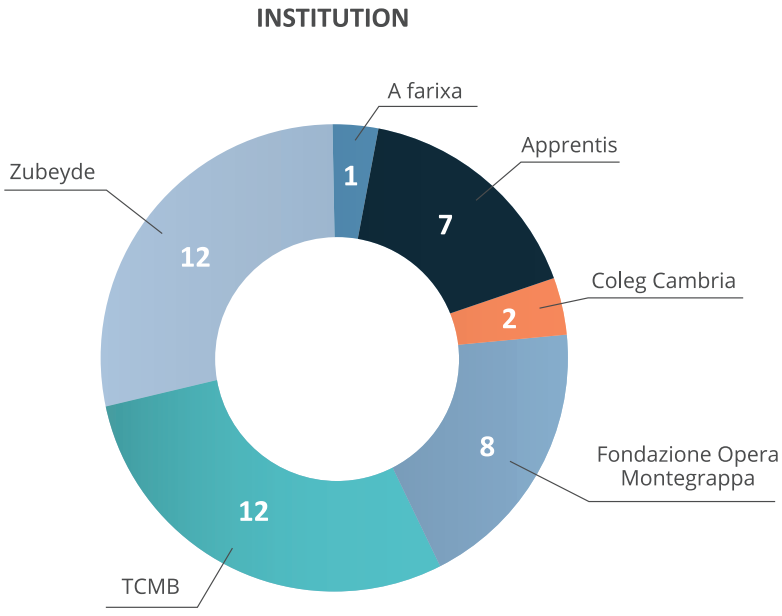
Generally a good idea	i'ts good (19 times) A big change for the school system I think it is an excellent innovation for all 👍 I am strongly agree Nice I like it I think is very good for students learning using mobile devices Fine and fast convenient. Good
I'ts good to learn how to use the technology	i think is very important of using the mobile device It contributes to technological training tool. Tablets and mobile devices are included in this
Has pro and cons	it is a good idea for looking up information on the topic but easy for pupils to get distracted and go off topic It is an interesting idea But It isn't necessary I think it's fun, but not always I prefer using books for study and using mobile devices for do my homeworks I think it is very comfortable when you have to do some researches but I prefere to use the books or the exercise books when i have to study Needs Improvement it would be better if it used for more exciting thing There have to be Wi-Fi in schools it would be nice if they let us to use I think it should not be banned. Communication Is most natural human rights.
Necessary	I think it's a technology that is proven , since we are in 2016 , and today we still use books. In addition , using the tablet , we have less paper waste , and as today more and more prevails the phenomenon of deforestation , consuming paper when we can avoid it is unacceptable! I think it's very useful in the school because it makes learning easier and it's important to update school methods Bence gerekli/ I think necessary I think the mobile device usage in school is a must. tablet must be distributed in schools I want the tablet for school, and I want the Internet to be accessible at each school.
Interesting	It's fantastic and also is too interesting

Fun	It's a good thing because lessons are mor entreteinng and practical It s a very good idea, because it's so cool to use the tablet for our lesson' s The use of mobile devices are easier and also it makes easier learning our lessons. Using mobile device in lessons are exciting. mobil devices encourages me to study.
Not so good	Forse me si is Not Good for me i prefer a peaper for study at School Unnecessary application of school subjects can not use the tablet as an absurd system. Writing paper and pencil is always better and more permanent system. In addition, self-discipline is more important to learn instead of mobile devices.
Tablet issues	Tablet internet-ipad Different I want Tablets Tablet We want tablet I want tablet
Free wifi	4

At the end of the academic year the students should answer to the same questionnaire. The comparison of data allow to verify if the experience has had an impact on their perception, and on which direction.

TEACHERS QUESTIONNAIRE

Where do you work?

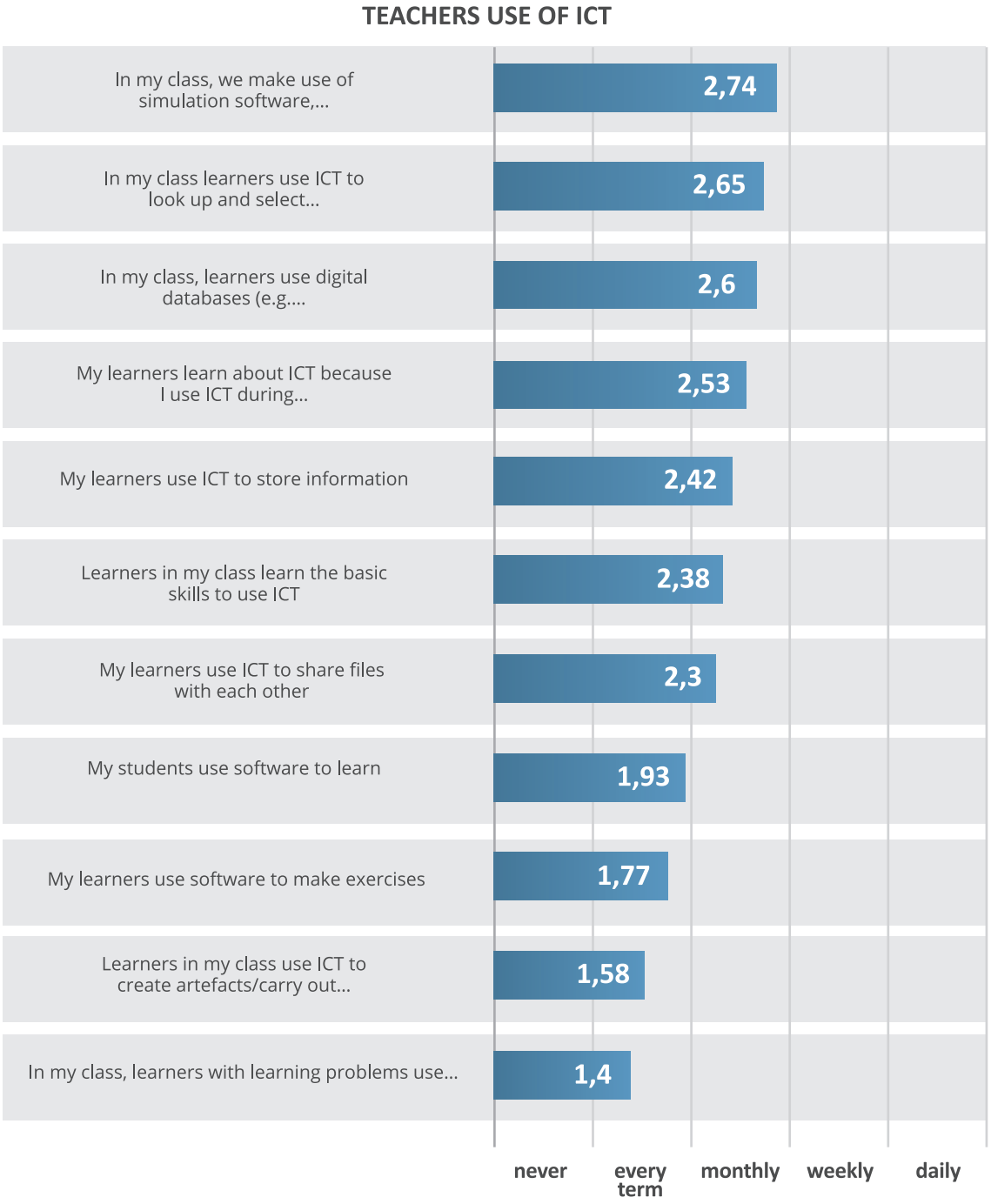


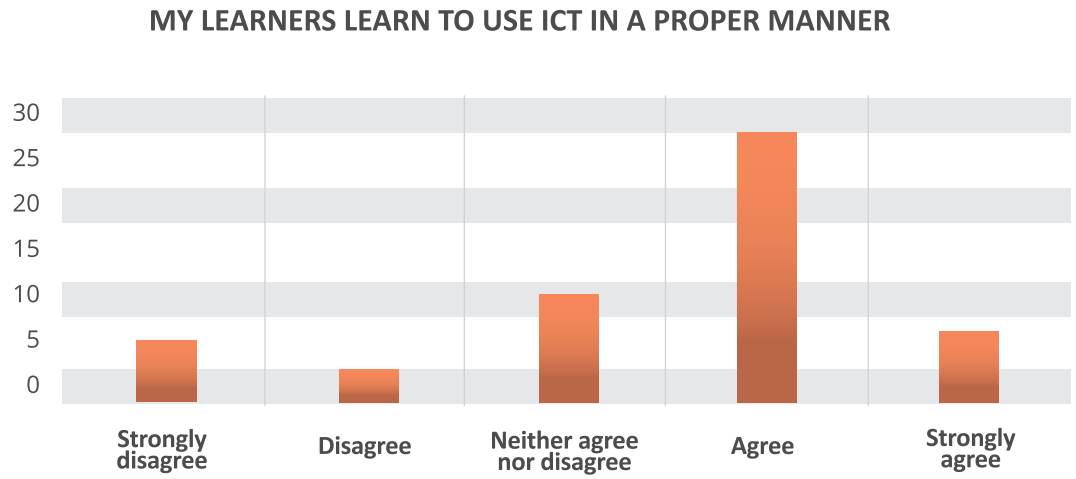
The number of respondents is 42, but the biggest group represented is surely the Turkish partner, with 24 respondents among the two institutions. The lecture of the data will be therefore strongly influenced by the Turkish experience.

Teachers use of ICT

The data show that there is at least a minimum diffusion of ICT adoption among the teachers. For example, only 4% of the respondents do not use “digital databases (e.g. Wikipedia, GoogleEarth, GoogleBooks, etc.) to look up for information” and only 7% do not make them “look up and select information”. Still the adoption of ICT remain quite occasional, and not all the function are having the same diffusion. Especially low is the adoption of “appropriate educational software and instructional computer programs” for learners with learning problems (43& never uses them). But also the use of ICT for creative, concrete tasks is much lower than the one for the search of information.

However teachers seems quite confident about the ICT skills of their students. This data is of course positive but should also be carefully taken into account, as it may reveal a tendency to over-estimate students’ ICT skills.


TEACHERS USE OF ICT
In my class, we make use of simulation software,...
2,74
In my class learners use ICT to look up and select...
2,65
In my class, learners use digital databases (e.g....
2,6
My learners learn about ICT because I use ICT during...
2,53
My learners use ICT to store information
2,42
Learners in my class learn the basic skills to use ICT
2,38
My learners use ICT to share files with each other
2,3
My students use software to learn
1,93
My learners use software to make exercises
1,77
Learners in my class use ICT to create artefacts/carry out...
1,58
In my class, learners with learning problems use...
1,4
never
every term
monthly
weekly
daily



The items are then resumed in a scale that gives a global indications of each respondent level of ICT use

Scale: teacher's use of ICT

Reliability Statistics

Cronbach's Alpha	N of Items
,874	12

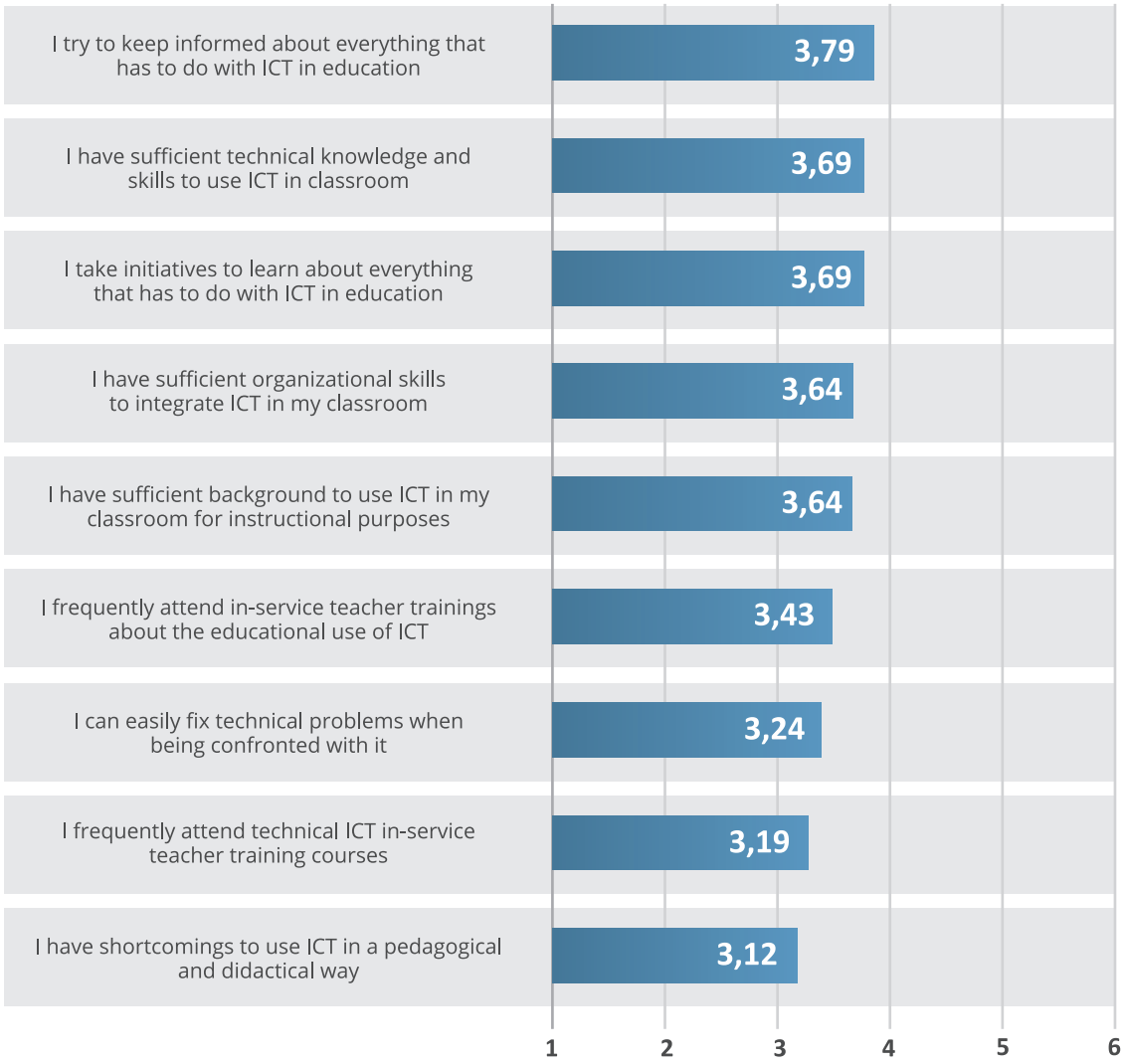
Statistics

Teacher's use of ICT scale

N Valid	40
N Missing	3
Mean	2,3708
Std. Deviation	,84689
Minimum	,17
Maximum	3,67

ICT teachers conditions

Teachers' evaluation of their own skills with ICT seems to express a moderate confidence. Surely the items assessing motivation and personal effort receive higher value while the means are a little bit lower for items concerning technical preparation and attendance to specific training programs. However means value are all within the range of 3, leaving space for improvement in their confidence on their skills.



The items are then resumed in a scale that gives a global indications of each respondent's evaluation of its own ICT condition.

Scale: ICT teacher's condition

Reliability Statistics

Cronbach's Alpha	N of Items
,822	9

Statistics

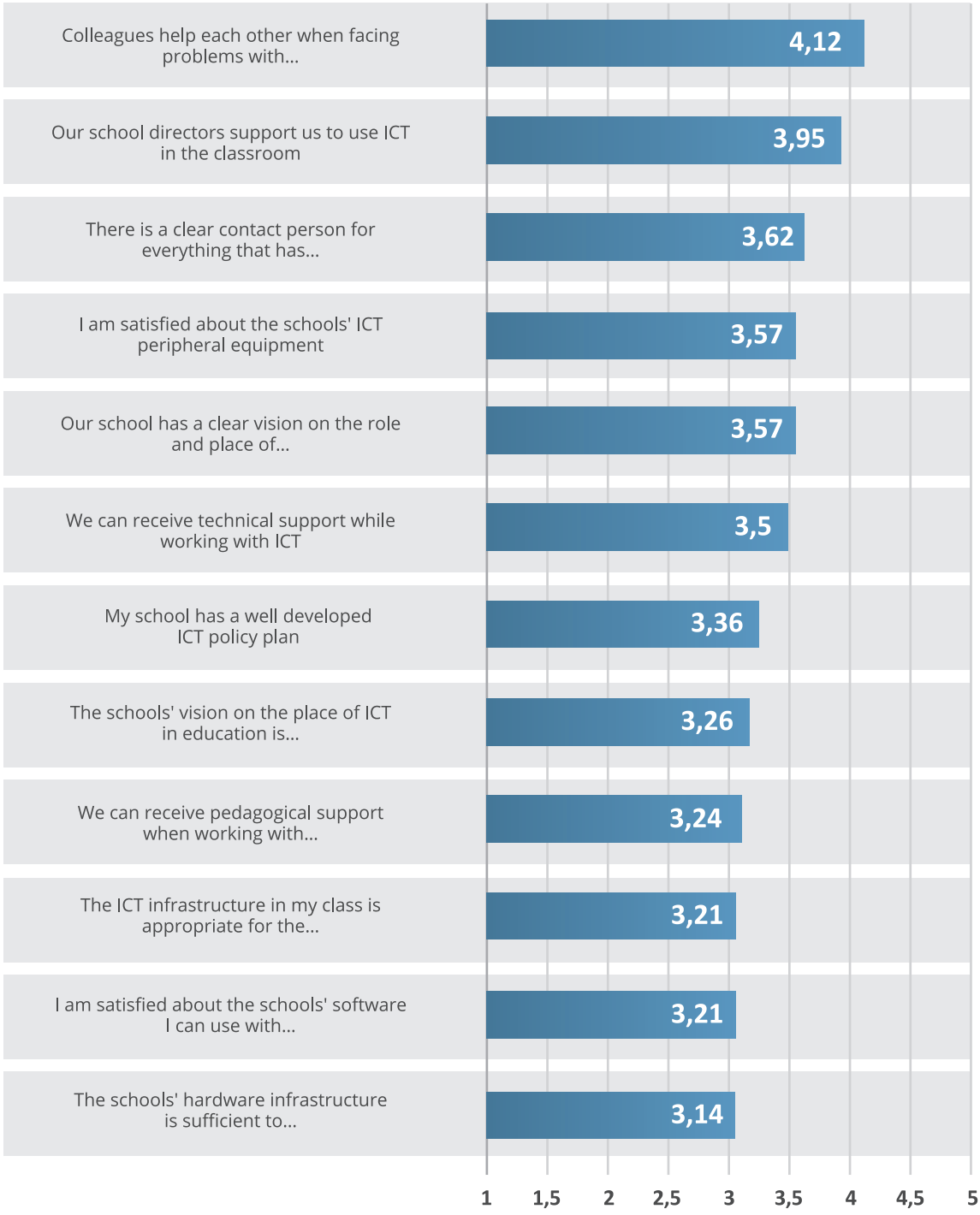
ICT teacher's condition

N Valid	42
N Missing	1
Mean	3,4921

Std. Deviation	,66628
Minimum	1,67
Maximum	4,67

ICT school's conditions

Values are on average similar to the ones concerning the teacher's ICT situation, but their range is wider: while the feeling of support among colleagues is quite high, satisfaction about technical equipment tends, once again, to be lower.



The items are then resumed in a scale that gives a global indications of each respondent's evaluation of the school ICT conditions.

Scale: ICT school's conditions

Reliability Statistics

Cronbach's Alpha	N of Items
,893	12

Statistics

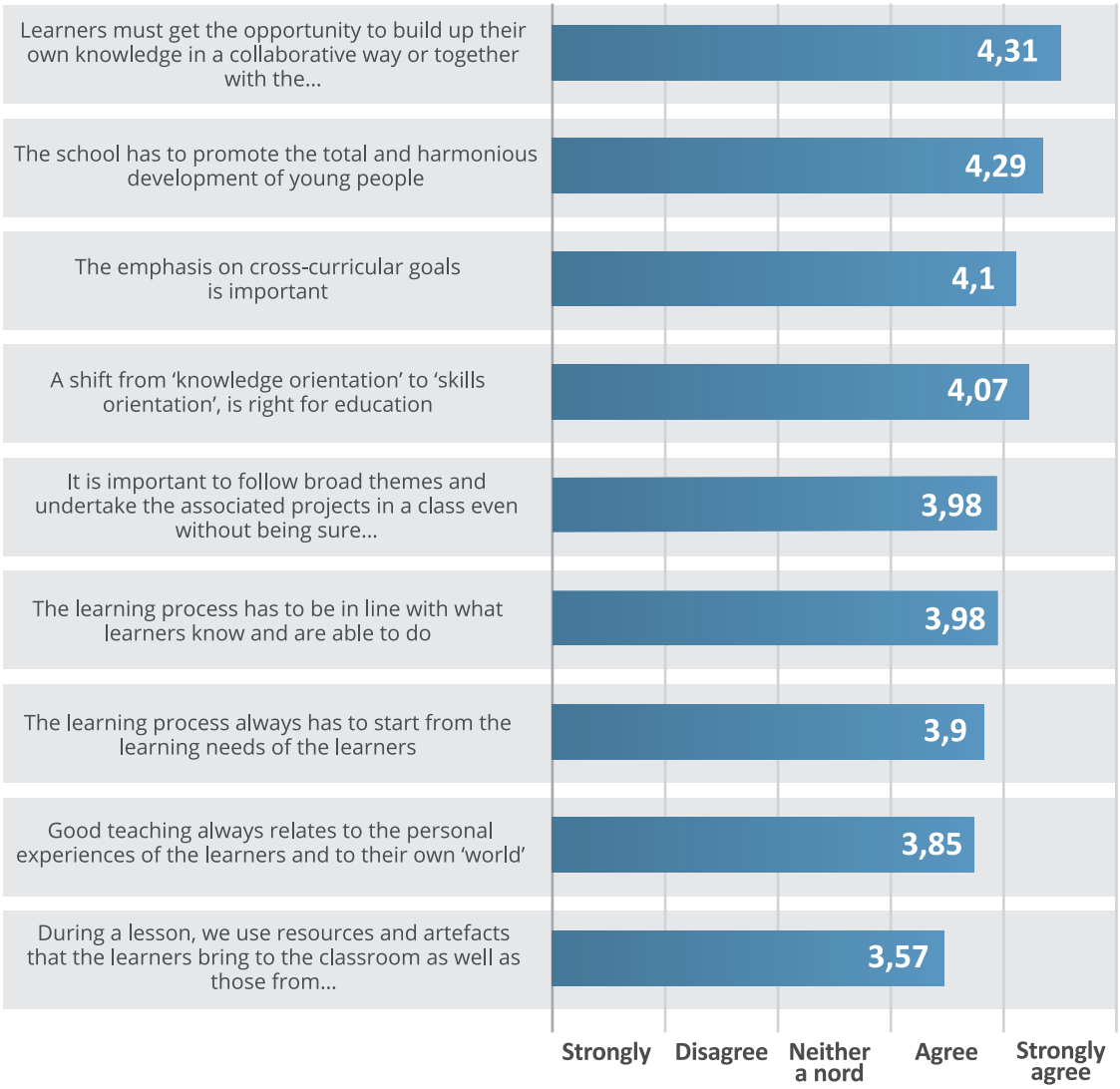
ICTschoolCond

N Valid	42
N Missing	1
Mean	3,4802
Std. Deviation	,66356
Minimum	1,92
Maximum	5,00

BELIEFS ABOUT EDUCATION

Scale of developmental beliefs

The items of this scale evaluate the propensity of teachers to think that “education should be oriented towards broad and individual development, be process oriented with an open curriculum, and to what degree knowledge should be acquired through construction” (Hermans van Braak an van Keer 2008).



Reliability Statistics

Cronbach’s Alpha	N of Items
,818	9

Statistics

DEvelBeliefs

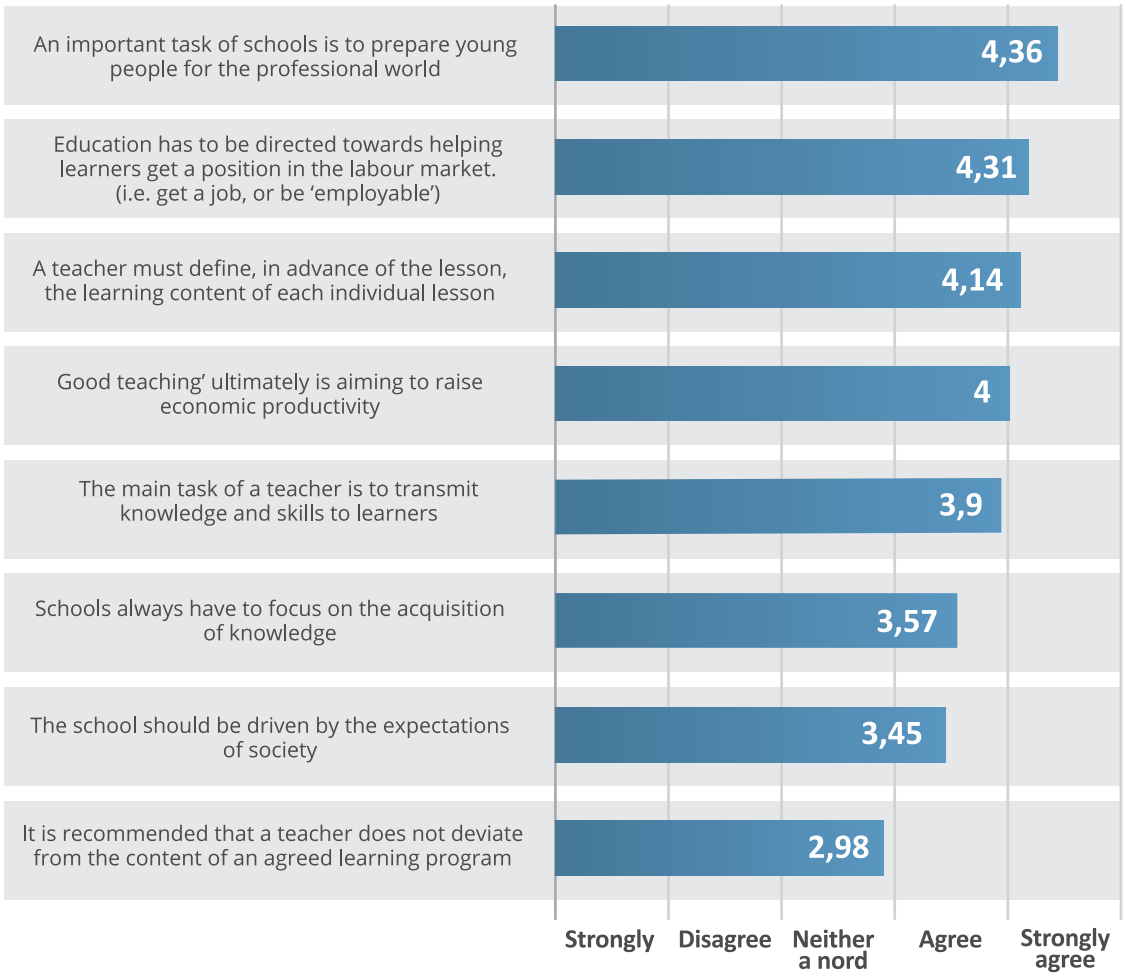
N Valid	40

N Missing	3
Mean	3,9972
Std. Deviation	,54693
Minimum	1,22
Maximum	4,89

The answers to this scale confirm what emerged from the qualitative interviews: values are quite high and variance is low, the sample show strong developmental beliefs regarding educations. Such beliefs lead to a more positive attitude toward student-centred methodologies, such those promoted by the Molvet project.

Scale of transmissive beliefs

The items that compose this scale assesse "the extent to which respondents believe education serves external goals and is outcome oriented with a closed curriculum. It also evaluates to which extent knowledge acquisition is perceived as being most adequately achieved through transmission (Hermans van Braak an van Keer 2008).



Reliability Statistics

Cronbach's Alpha	N of Items
,736	9

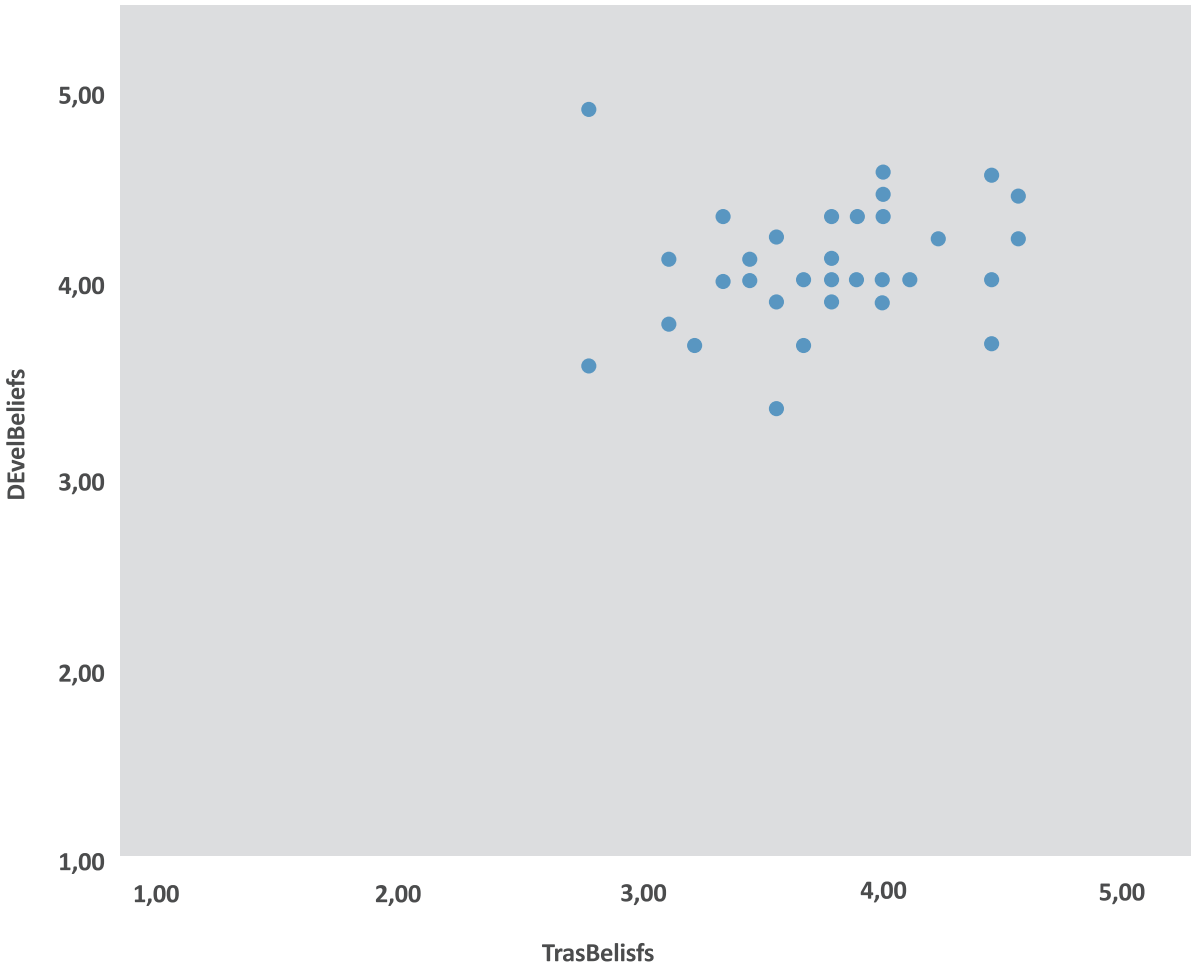
Statistics

TransBeliefs

N Valid	42
N Missing	1
Mean	3,6958
Std. Deviation	,56818
Minimum	1,33
Maximum	4,56

Values on the scale of transmissive beliefs are lower than those of the scale on developmental beliefs, but still quite high, with a mean value of 3,7 on a scale going from 1 to 5. The results is in line with previous research, as the two variables are considered to be independent dimensions: teachers can hold both developmental and transmissive beliefs in relation to the goals of education, the nature of education, and knowledge acquisition in education. However, this dimension is considered to be related to a preference for more traditional styles of lessons, and therefore not facilitating the changes promoted by the Molvet project.

Distribution of the respondents on the two scales



Correlations

The correlation between more general educational beliefs and specific evaluation of different aspects of the ICT conditions of the education reveal some unexpected pattern.

The evaluation given by the respondents of their use of ICT for the didactic do not show correlation neither with developmental nor transmissive beliefs, while the results of previous research lead to the expectation that higher values on the developmental scale should have been associated with higher level of use of ICT for classes.

At the same time both the evaluation of the teachers' ICT condition and of the school condition show that developmental beliefs are moderately/strongly correlated to satisfaction on the two variables created. Basically this means that teachers with higher level of transmissive beliefs consider their preparation on the use of ICT and, even more, the quality of their institution on the ICT available, satisfactory. So, they think that the situation pre-Molvet was already technologically satisfactory. This data is somehow in contrast with the evaluations emerged by the qualitative interviews and may hint for a lower urgency to innovation.

Teachers use of ICT with educational beliefs

Correlations

			DEvelBeliefs	TransBeliefs	teacher's use of ICT scale
Kendall's tau_b	DEvelBeliefs	Correlation Coefficient	1,000	,234*	-,209
		Sig. (2-tailed)	.	,048	,082
		N	40	40	38
	TransBeliefs	Correlation Coefficient	,234*	1,000	,128
		Sig. (2-tailed)	,048	.	,272
		N	40	42	39
	teacher's use of ICT scale	Correlation Coefficient	-,209	,128	1,000
		Sig. (2-tailed)	,082	,272	.
		N	38	39	40

*. Correlation is significant at the 0.05 level (2-tailed).

ICT's teacher's conditions with educational beliefs

			ICT teacher's condition
Kendall's tau_b	DEvelBeliefs	Correlation Coefficient	,015
		Sig. (2-tailed)	,896
		N	40
	TransBeliefs	Correlation Coefficient	,231*
		Sig. (2-tailed)	,041
		N	42

ICT school's conditions and educational beliefs

			ICTschool-Cond
Kendall's tau_b	DEvelBeliefs	Correlation Coefficient	-,110
		Sig. (2-tailed)	,350
		N	40
	TransBeliefs	Correlation Coefficient	,362**
		Sig. (2-tailed)	,001
		N	42