Learning Guide on Flipping the Classroom in Adult Education

iFlip - Flipping the Classroom in Adult Education
Erasmus+ 2015: 15-204-012651

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- Arteveldehogeschool, Belgium
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The Learning Guide on FTC in Adult Education is the final output of the Erasmus+ project Flipping the classroom in adult education. The content was prepared in collaboration with all participating partners respectively. The content of the Part 1 is a compilation of printed and online published resources and is referenced in text and at the end of this guide.

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INTRODUCTION

Adult learners differ from younger students in several ways: their time is limited due to other life responsibilities, they have different levels of prior knowledge, some lack ICT skills, some work in shifts and are unable to participate in courses and some have had a negative experience with education process in their past (drop-outs) and need special attention. But most still wish to learn something new and to acquire new skills in an innovative way. For those reasons, traditional teaching methods often do not meet their needs and requirements. The option is e-learning or distant learning, but this presents difficulties for those who lack ICT skills and need additional support or have limited access to modern technology. In addition, many experience difficulties engaging in education after a longer break and prefer guidance and support. Personal contact is valued and is hard to replace it with modern technology.

Therefore, Flipping The Classroom (FTC) approach seemed to be a more suitable combination and solution - the learners watch and listen to lectures in advance, and then use precious class-time for what previously was often done in homework: tackling difficult problems, working in groups, researching, collaborating, crafting and creating.

This suggested approach seemed suitable for adult learners since they can decide when to learn and how to divide their time. At the same time, it enables educators to adjust in-class time to individual's needs - focusing on basics with some learners and providing more advanced activities to challenge others. This encourages and promotes the use of ICT enriched with support and guidance from a coach/educator. The personal contact is provided with sufficient autonomy, space and freedom for learners to design their own learning path. The FTC technique presents an intense, efficient and creative way of learning.

Within the iFLIP project first the needs of adult learners in participating countries were identified. Then the FTC technique was introduced to educators in adult education during a training. Educators transferred the FTC technique to adult education, designed classes and developed materials that met the adult learners' needs; pilots were done in partner countries. Once the pilots had been executed those pilots were assessed and feedback was provided. Additional modifications had been done according to the feedback given from adult learners.

This guide is set out to serve as a useful tool for all educators and stakeholders interested to introduce the FTC approach in adult learning. As the approach proved to be very flexible it can however be applied in various types of educational programmes, regardless of level and subject.
The consortium for this project consists of partners active in different fields but all involved in adult education. The partners in the project were:
creative way of learning.

Within the iFLIP project the needs of adult learners in participating countries were identified and the FC technique was introduced to educators in adult education during a training. Educators transferred the FC technique to adult education, designed classes and developed materials that met the adult learners' needs; pilots were done in partner countries. Once the pilots had been executed these pilots were assessed and feedback was provided. Additional modifications had been done according to the feedback given from adult learners.

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The consortium for this project consists of partners active in different fields but all involved in adult education.

The partners of the project include:

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1 FLIPPING THE CLASSROOM IN ADULT EDUCATION - CONCEPTUAL FRAMEWORK

1.1 FLIPPED CLASSROOM – WHAT IS IT?

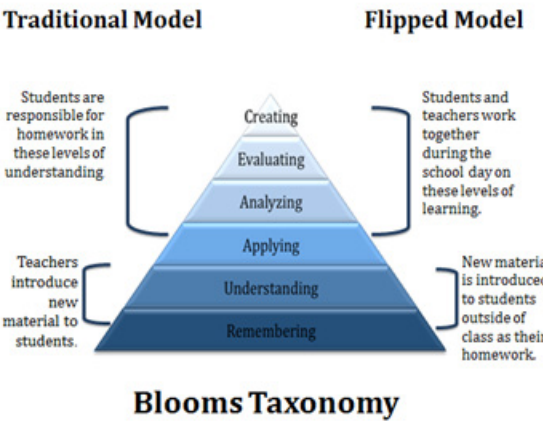
From traditional to flipped teaching

In the traditional model of classroom instruction, the educator is typically the central focus of a lesson and the primary disseminator of information during the class period. This educator-centred approach implies that the educator responds to questions while learners defer directly to the educator for guidance and feedback. In a classroom with a radically traditional style of instruction, individual lessons may be didactic and content oriented. Learner engagement in the traditional model may be limited to

activities in which learners work independently or in small groups on an application task designed by the educator. Class discussions are typically educator-centred, the educator usually controls the flow of the conversation. Typically, this pattern of teaching also involves giving learners the task of reading from a textbook or practicing a concept by working on a problem set, for example, outside school.

The flipped classroom intentionally shifts instruction to a learner-centred model through which it is possible to explore topics in a greater depth and create more meaningful learning opportunities during the in-classroom activities, while educational technologies such as online videos are used to deliver content outside of the classroom. In a flipped classroom, content delivery may take a variety of forms. Often, video lessons, assignments, self-evaluation tests prepared by the educator or third parties are used to deliver content, although online collaborative discussions, digital research, and text readings may be used.

The true essence of the flip is really to focus on the learner. Bloom's Taxonomy provides the framework for comparing the lecture-centred class to the flipped class. Instructors focus on higher level learning outcomes during class time and lower level outcomes outside of class. This means the flip could be as simple as watching a video before class and then attending class for more in-depth discussions that involve judging, analysing, and creating. If learners work with the fundamental material before class, they are better prepared to apply the information and engage in higher-level discussions with their peers and the instructor.



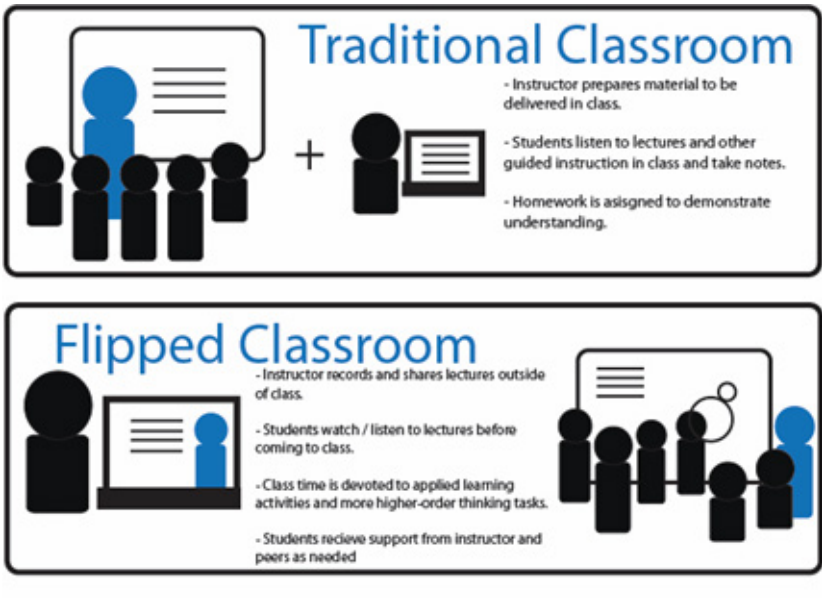
Ways that Bloom's Taxonomy is applied to traditional vs. flipped classroom activities.

The definition of flipped classroom

The most widely used description of the flipped class is a learning environment in which the activities traditionally completed outside of class as homework are now completed in class during instruction time. Moreover, the activities traditionally completed in class are now completed on learners' own time before class. This means learners watch a video of pre-recorded lectures before class. Then, when they arrive to class, they work through assignments or activities with their peers and the instructor. Many models however start with face-to face contact first, followed by different out of class activities. While that is probably the most familiar idea of the flipped classroom, flipping can mean more than watching videos of lectures. It involves completing different online activities, tests, quizzes, etc, which can be checked by the educator prior the class. One of the essential goals of the flipped classroom is to move beyond the lecture as the primary way to deliver information and knowledge and structure class time. A well-developed lecture can be effective, but instructors rely on it too heavily and often to the exclusion of other more meaningful teaching and learning strategies. A flipped classroom allows instructors to introduce new ways of doing things. Yet adding something new generally requires letting go of something old. In the flipped classroom, instructors need to let go of their reliance on the lecture and focus on other ways to enhance learning by introducing active learning strategies that put learners in the centre of the learning experience. Expanding the Definition of a Flipped Learning Environment (Honeycutt, 2014)

According to Honeycutt (2014) "Flipped classroom can also be described as moving from an instructor-centred learning environment to a learner-centred learning environment. It could also be defined as shifting from individual to collaborative strategies. Although, it is possible to flip a class using individual activities such as quizzes, worksheets, reflective writing prompts, and problem-solving assignments. The key is to complete these activities during class time. Flipping may or may not include technology." As explained by Bergmann and Sams (2012), "Ultimately, flipping a classroom involves shifting the energy away from the instructor and toward the students and then leveraging educational tools to enhance the learn-

ing environment." Educational tools include but are not limited to use of technology. While videos and other technological tools can be effective in a flipped classroom, they are not required. Expanding the Definition of a Flipped Learning Environment (Honeycutt, 2014)



Source: http://www.slu.edu/cttl/resources/teaching-tips-and-resources/flipped-classroom-resources

1.2 THEORETICAL FRAMEWORK

The flipped classroom is based on the constructivist model. Learning is an active, social process. Learners can use their previous experiences and existing knowledge to build an understanding of the new material.

There have been two major factors which encouraged the implementation of a flipped classroom.

PREVALENCE OF ONLINE VIDEOS, MATERIALS AND INFORMATION

POOR LEARNING OUTCOMES FROM TRADITIONAL CLASSROOMS

These two factors influenced teachers Aaron Sams and Jonathan Bergman at Woodland Park High School in Colorado to record PowerPoint presentations for their students. These were posted online for students who missed class, and eventually the popularity of students using these presentations to learn grew. The students began to use the lectures to learn before class and time in the classroom was dedicated to applying the knowledge learned via the digital lectures and students then ask for greater knowledge or clarification in class. Sams and Bergman began to lecture on the outcome of their use of the flipped classroom resulting other teachers adopting this model in order to leave classroom time for collaborative work and development of student knowledge/skills base.

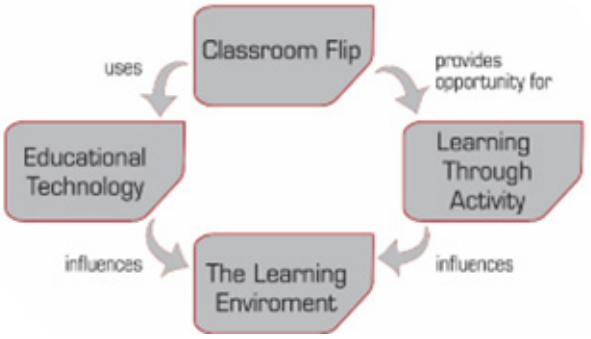
A primary theory that underpins flipped classroom pedagogy is “active learning” which Bonwell and Eison (1991) refer to as “anything that involves students in doing things and thinking about the things they are doing” (p. 2). Further, Bloom’s Taxonomy (1956) of learning behaviours (particularly

the higher-order cognitive functions) can be seen as the goals of active learning. In support of active learning, Bransford, Brown and Cocking (2000) explain that for deep learning to occur students must:

- first develop a strong foundation of knowledge based on fact,
- understand how that knowledge sits within a specific concept/framework; and
- then retrieve and apply that knowledge in a range of contexts.

The flipped classroom supports this type of learning as it exposes students to foundational concepts through online readings, videos and activities prior to class, and ensures that class time enables students the opportunity to actively exercise higher cognitive functions. Moreover, the formative feedback provided during flipped class time helps instructors clarify knowledge and misconceptions so as to ensure students are able to "organise their new knowledge in a way that is more accessible for future use" (Brame, 2013, p. 3).

Dr. Jeremy F. Strayer from Ohio State University established the framework for flipped classroom. He stated that "Extensive use of educational technology to deliver course content outside of class is central to the classroom flip idea. Active learning during class time is the other necessary feature of the classroom flip. These two foci influence student learning environments in fundamental ways."



1.3 FOUR PILLARS OF FLIPPED CLASSROOM

A Review of flipped learning (Hamdan, McKnight & Arfstrom, 2013) presents four pillars of flipped learning. Just as no two traditional classrooms are identical, such is the case with flipped classrooms. Because Flipped Learning focuses on meeting individual learner learning needs as opposed to a set methodology with a clear set of rules, a team of experienced educators from the Flipped Learning Network, along with Pearson's School Achievement Services (2013), identified the key features, or pillars, of flipped classrooms that allow Flipped Learning to occur. The four Pillars of F-L-I-P are Flexible Environment, Learning Culture, Intentional Content, and Professional Educator

1. FLEXIBLE ENVIRONMENTS:

Educators must expect that class time will be "somewhat chaotic and noisy" and that timelines and expectations for learning assessments will have to be flexible as well. Flipped classrooms allow for a variety of learning modes; educators often physically rearrange their learning space to accommodate the lesson or unit, which might involve group work, independent study, research, performance, and evaluation. They create Flexible Environments in which learners choose when and where they learn.

2. LEARNING CULTURE:

The classroom becomes learner-centred. According to the guide: "Learners move from being the product of teaching to the centre of learning, where they are actively involved in knowledge formation through opportunities to participate in and evaluate their learning in a manner that is personally meaningful." Learners can theoretically pace their learning by reviewing content outside the group learning space, and educators can maximize the use of face-to-face classroom interactions to check for and ensure learner understanding and synthesis of the material.

3. INTENTIONAL CONTENT:

Educators are required to evaluate what they need to teach directly so that classroom time can be used for other methods of teaching, such as active learning strategies, peer instruction, problem-based learning, or mastery or Socratic methods, depending on grade level and subject matter.

4. PROFESSIONAL EDUCATORS:

The instructional videos used for flipped classrooms cannot replace trained, professional educators. In the Flipped Learning model, skilled, professional educators are more important than ever, and often more demanding, than in a traditional one. They must determine when and how to shift direct instruction from the group to the individual learning space, and how to maximize the face-to-face time between educators and learners. During class time, educators continually observe their learners, provide them with feedback relevant in the moment, and continuously assess their work. (Hamdan, McKnight & Arfstrom, 2013, 5-6)

1.4 PHASES OF FLIPPED CLASSROOM

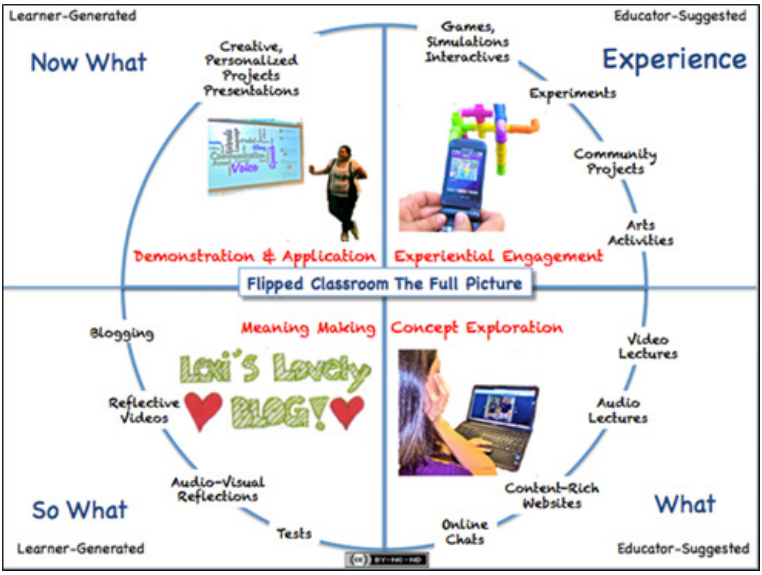
The following chapter presents four phases of flipped classroom as described in website article User Generated Education, written by Jackie Gerstein.

The advantage of the flipped classroom is that the content, often the theoretical/lecture-based component of the lesson, becomes more easily accessed and controlled by the learner. One of the major, evidenced-based advantages of the use of video is that learners have control over the media with the ability to review parts that are misunderstood, which need further reinforcement, and/or those parts that are of particular interest. When educators are asked to replace their in-class lectures with videotaped ones (either their own or others) that learners watch at home, educators may not know what to do with this now void in-class time. Those who advocate for the flipped classroom state that class time can then be used for discourse

and for providing hands-on, authentic learning experiences.

For educators, who are used to and use the didactic model, a framework is needed to assist them with the implementation of the Flipped Classroom.

What follows is an explanation of the Flipped Classroom Model, a model where the video lectures and podcasts fall within a larger framework of learning activities. It is a cycle of learning model, which provides a sequence of learning activities based on the learning theories and instructional models of Experiential Learning Cycles:



The value of a flipped class is in the repurposing of class time into a workshop where learners can inquire about lecture content, test their skills in applying knowledge, and interact with one another in hands-on activities. During class sessions, instructors function as coaches or advisors, encouraging learners in individual inquiry and collaborative effort.

The flipped classroom constitutes a role change for instructors, who give up their front-of-the-class position in favour of a more collaborative and

cooperative contribution to the teaching process. There is a concomitant change in the role of learners, many of whom are used to being cast as passive participants in the education process, where instruction is served to them. The flipped model puts more of the responsibility for learning on the shoulders of learners while giving them greater impetus to experiment. Activities can be learner-led, and communication among learners can become the determining dynamic of a session devoted to learning through hands-on work. What the flip does particularly well is to bring about a distinctive shift in priorities— from merely covering material to working toward mastery of it.

So far, flipped classroom was primarily used in higher education. The goal of the project iFLIP was to introduce the model in adult education, with required adaptations and supporting training for educators. The model has been tested in five countries in different classes. The results are presented in this Learning guide on FTC in Adult education.

EXPERIENTIAL ENGAGEMENT: THE ACTIVITY

The cycle often begins with an experiential exercise. This authentic, often hands-on learning activity fully engages the student. It is a concrete experience, which calls for attention by most, if not all, the senses. Learners become “hooked” through personal connection to the experience and desire to create meaning for and about that experience (ala constructivist learning).

Setting: These activities are designed for in-class time and often occur in a group setting. In a blended course, these are synchronous activities conducted during face-to-face instructional time. In an online course, learners could be asked to go to a community event, museum, . . or the creative educator could provide some type of hands-on activity or simulation for learners to complete during a real-time synchronous webinar session via Adobe Connect, Elluminate or through a 3D Learning experience.

CONCEPTUAL CONNECTIONS: THE WHAT

Learners are exposed to and learn concepts touched upon during Experiential Engagement. They explore what the experts have to say about the topic. Information is presented via video lecture, content-rich websites and simulations like PHET and/or online text/readings. In the case of the flipped classroom this is the time in the learning cycle when the learners view content-rich videos.

Concepts should be presented in accessible form. By providing learners with online resources and downloadable media, learners can control when and how the media is used. This is the major value of flipping the classroom. Content-based presentations are controlled by the learner as opposed to the lecturer as would be the case in a live, synchronous, didactic-driven environment.

Setting: These materials are used by the learners in their own setting on their own time. In other words, learners have the opportunity to access and interact with these materials in a personalized manner. They can view them in a learning setting that works for them (music, lighting, furniture, time of day) and can view/review information that they find particularly interesting or do not understand. It is asynchronous learning and as such permits the learner to differentiate learning for him/herself.

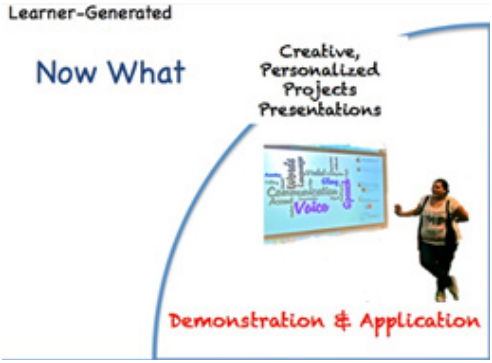
MEANING MAKING: THE SO WHAT

Learners reflect on their understanding of what was discovered during the previous phases. It is a phase of deep reflection on what was experienced during the first phase and what was learned via the experts during the second phase.

Learners can articulate and construct their understanding of the content or topic being covered through written blogs or verbal-based audio or video recordings. Within the standard school system, this would be the phase when learners are tested about their understanding of the content. If this is the case, it is recommended that the tests target higher levels of Bloom's Taxonomy – evaluation, applying, synthesizing.

Setting: If possible, learners should be given the opportunity to reflect upon and make meaning of the content-related concepts within their own time schedule . . . both at a time when they feel ready to do so and taking the time they personally need for producing self-satisfactory work.

DEMONSTRATION AND APPLICATION: THE NOW WHAT



During this phase, learners get to demonstrate what they learned and apply the material in a way that makes sense to them. This goes beyond reflection and personal understanding in that learners have to create something that is individualized and extends beyond the lesson with applicability to the learners' everyday lives. This is in line with the highest level of learning within Bloom's Revised Taxonomy of Learning – Creating – whereby the learner creates a new product or point of view. In essence, they become the storytellers of their learning

Setting: This phase of the cycle is best when it occurs in a face-to-face, group setting within the classroom. The reasons for recommending this type of synchronous learning are

- the educator can guide the learner to the types of projects and tools best suited for him/her, and

- an audience of peers and mentors increases motivation and provides opportunities for feedback.

1.5 DIFFERENT FLIPPED CLASSROOM MODELS

iFLIP model is very versatile. lt is not 'one size fits all' model. As every classroom is different, with different levels of access to technology, different levels of motivation on the part of the learners, and different technological know-how on the part of the instructors, the module changes as well. Additionally, educators act in a different role. They must act more as the "guide on the side" rather than the "sage on the stage"—and that takes time and adjustment. Flipped classroom requires preparation and flexibility. The implementation part of the project did exactly that – tested different models and according to the group of learners and their need selected the most suitable one.

Some examples of Flipped classroom models:

THE STANDARD INVERTED CLASSROOM:

Learners are assigned the "homework" of watching video lectures and reading any materials relevant to the next day's class. During class time, learners practice what they have learned through traditional schoolwork, with their educators freed up for additional one-on-one time.

THE DISCUSSION-ORIENTED FLIPPED CLASSROOM:

Educators assign lecture videos, as well as any other video or reading related to the day's subject —TED Talks, YouTube videos, and other resources. Class time is then devoted to discussion and exploration of the subject. This can be an especially useful approach in subjects where context is everything — history, art, or English.

THE DEMONSTRATION-FOCUSED FLIPPED CLASSROOM:

Especially for those subjects that require learners to remember and repeat activities exactly — think chemistry, physics, and just about every math class — it is most helpful to have a video demonstration to be able

to rewind and rewatch. In this model, the educator uses screen recording software to demonstrate the activity in a way that allows Learners to follow along at their own pace.

THE FAUX-FLIPPED CLASSROOM:

This idea is perfect for younger learners for whom actual homework might not yet be appropriate. This flipped classroom model instead has those learners watch lecture video in class — giving them the opportunity to review materials at their own pace, with the educator able to move from learner to learner to offer whatever individual support each young learner needs.

THE GROUP-BASED FLIPPED CLASSROOM:

This model adds a new wrinkle to helping learners learn — each other. The class starts the same way others do, with lecture videos and other resources shared before class. The shift happens when learners come to class, where they team up to work together on that day's assignment. This format encourages learners to learn from one another and helps learners to not only learn the what the right answers are but also how to explain to a peer why those answers are right.

THE VIRTUAL FLIPPED CLASSROOM:

For older learners and in some courses, the flipped classroom can eliminate the need for classroom time at all. Some college and university professors now share lecture video for learner viewing, assign and collect work via online learning management systems, and simply require learners to attend office hours or other regularly scheduled time for brief one-on-one instruction based on that individual learner's needs.

FLIPPING THE TEACHER:

All the video created for a flipped classroom doesn't have to begin and end with the educator. Learners too can make use of video to better demon-

strate proficiency. Assign learners to their record practice role-play activities to show competency or ask each to film themselves presenting a new subject or skill as a means to "teach the educator". (7 Unique Flipped Classroom Models -- Which is Right for You?, 2016)

1.6 LIMITATIONS AND CRITICISMS - WHAT ARE THE DOWNSIDES?

Critics argue the flipped classroom model has some drawbacks for both learners and educators.

For learners there exists a 'digital divide.' Not all families are from the same socio-economic background and thus access to computers or video-viewing technology outside of the school environment is not possible for all learners. This model of instruction may put undue pressure on some families as they attempt to gain access to videos outside of school hours.

Additionally, some learners may struggle due to their developing personal responsibility. In a self-directed, home learning environment learner who are not at the developmental stage required to keep on-task with independent learning may fall rapidly behind their peers.

Others argue that the flipped classroom leads to increased computer time in an era where adolescents already spend too much time in front of computer screens. Inverted models that rely on computerized videos do contribute to this challenge, particularly if videos are long.

Additionally, flipped classrooms that rely on videos to deliver instruction suffer some of the same challenges as traditional classrooms. Students may not learn best by listening to a lecture and watching instructional videos at home is still representative of a more traditional form of teaching. Critics argue a constructivist approach would be more beneficial.

Educators may find challenges with this model as well. Increased

preparation time is initially likely needed, as creating high quality videos requires educators to contribute significant time and effort outside of regular teaching responsibilities. Additional funding may also be required to procure training for educators to navigate computer technologies involved in the successful implementation the inverted model.

The flipped classroom is an easy model to get wrong. Although the idea is straightforward, an effective flip requires careful preparation. Recording lectures requires effort and time on the part of faculty, and out-of-class and in-class elements must be carefully integrated for learners to understand the model and be motivated to prepare for class. However, recording the videos is not even the real challenge. The real challenge is what to do with the extra time in the class. As a result, introducing a flip can mean additional work and may require new skills for the instructor, although this learning curve could be mitigated by entering the model slowly.

In summarising the value of a flipped class is in the repurposing of class time into a workshop where learners can inquire about lecture content, test their skills in applying knowledge, and interact with one another in hands-on activities. During class sessions, instructors function as coaches or advisors, encouraging learners in individual inquiry and collaborative effort.

The flipped classroom constitutes a role change for instructors, who give up their front-of-the-class position in favour of a more collaborative and cooperative contribution to the teaching process. There is a concomitant change in the role of learners, many of whom are used to being cast as passive participants in the education process, where instruction is served to them. The flipped model puts more of the responsibility for learning on the shoulders of learners while giving them greater impetus to experiment. Activities can be learner-led, and communication among learners can become the determining dynamic of a session devoted to learning through hands-on work. What the flip does particularly well is to bring about a distinctive shift in priorities - from merely covering material to working toward mastery of it. (Things you should know about... Flipped Classrooms, 2012)

2 ADULT LEARNERS AND EDUCATORS NEEDS ANALYSIS

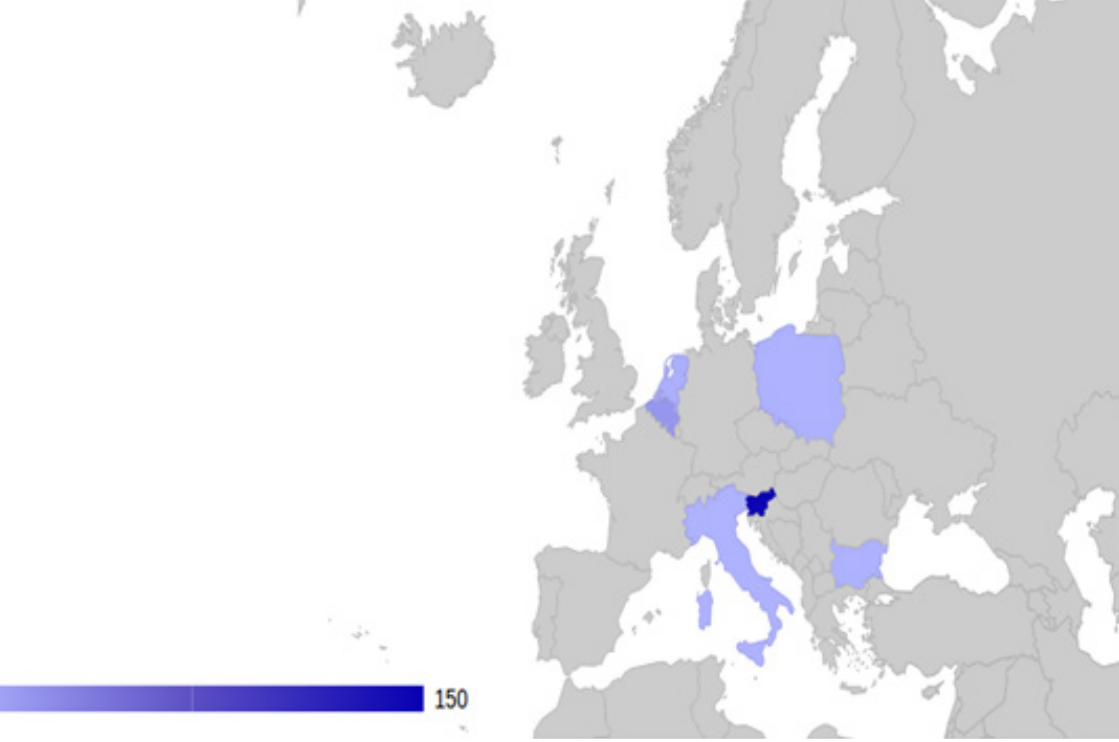
This chapter outlines the main findings of the Adult Learners Needs Analysis Report (ALNAR) result of the research, which iFlip partners have done as part of the project implementation.

The Adult Learners Needs Analysis Report (ALNAR) was set out to inform the partners of the current developments related to flipped classroom awareness and practices, and of the existing preferences among learners and trainers/educators on learning/teaching pathways and approaches.

The ALNAR was planned in 4 focus quadrants: learners and their needs, trainers/educators and their teaching practices, case studies and good practice models, and flipped classrooms methods in use. The first two focus quadrants were attempted by means of online surveys. The second two quadrants were addressed by desktop research.

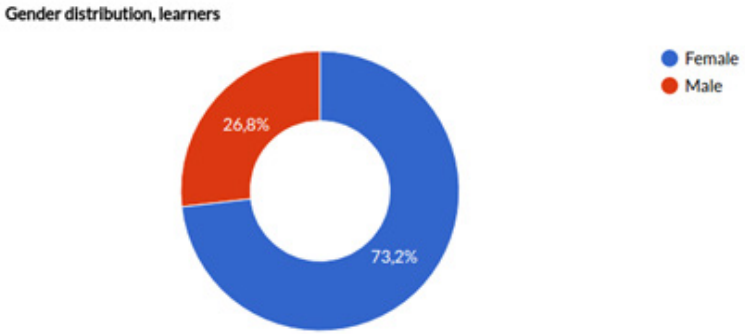
2.1 ADULT LEARNERS: SURVEY SUMMARY AND CONCLUSIONS

The total number of respondents in this survey is n=220 with all partners reaching or exceeding the required sample size. Slovenia is overrepresented in the survey, but analyses found no significant correlation between country of origin of respondents and their answers, meaning that we can accept the results of the aggregated sample as valid. Six factors exhibit a positive correlation between the country of origin and the learning factors – 3 of them show weak correlation in the lower end (0.20 to 0.22) and the other 3 show correlation up to the top end of the weak range (0.27 to 0.36).

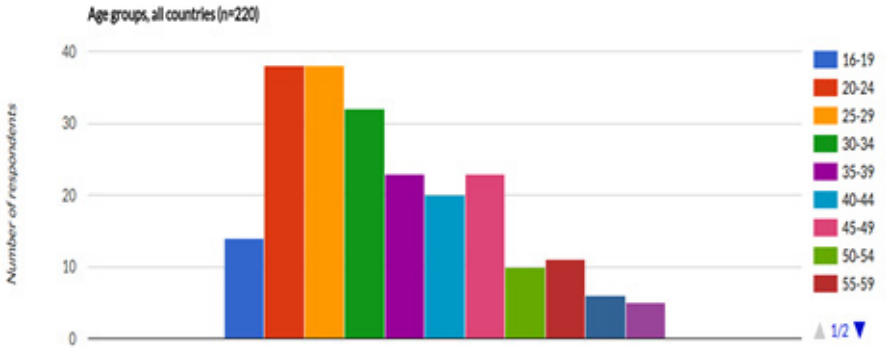


Number of respondents by country

Gender distribution shows 27% males and 73% females.

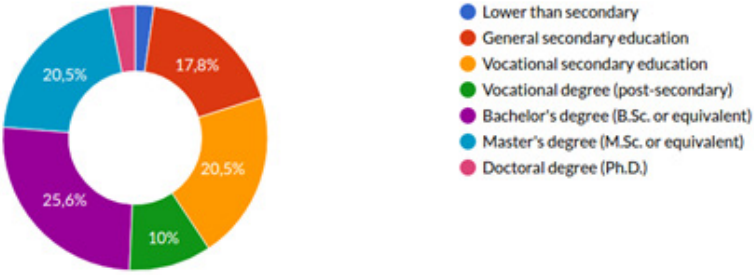


Age distribution provides sufficient response in all major age groups. However, calculated correlation reveals no significant dependencies between age and learning factors on which the survey is focused. Only 3 of the studied factors exhibit a negative correlation with age between -0.20 and -0.30 (weak) with all other factors having a correlation between 0 and +/- 0.20 (very weak).



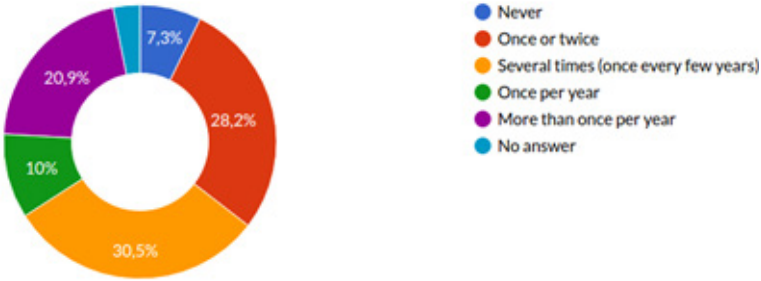
Forty-nine percent of the respondents have HE (Bachelor, Master, or PhD). Thirty-one percent have vocational education and training – at secondary education level combined with a vocational degree, or at post-secondary vocational training level.

Educational attainment level of respondents, all countries (n=219)



Five of the 19 learning factors show weak correlation to the frequency of learning activities. Only 3 learning factors correlate (weak) to the educational attainment level of the respondents. As for the frequency of additional learning activities, the results show that just over 30% have participated in several (one every few years or so) learning activities in the last 10 years. A similar but slightly lower share of respondents (28%) have done this once or twice. Another 10% responded with "once per year", and 21% with "more than once per year". If we were to aggregate the last two groups, we would come to a balanced distribution of about 30% each among the three main answers – (1) one every few years, (2) once or twice, and (3) once or more than once per year. A mere 7% said they did not participate in additional learning in the last 10 years at all.

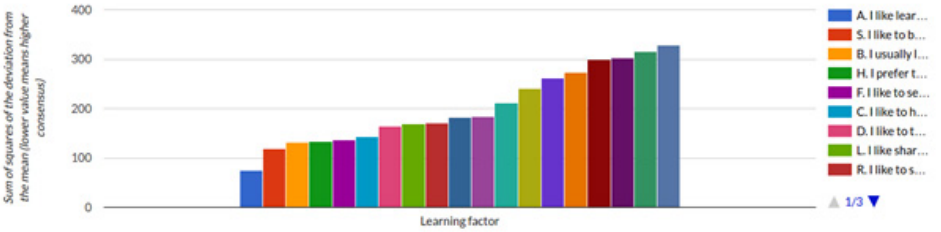
Frequency of additional learning of any kind in the last 10 years, all countries (n=220)

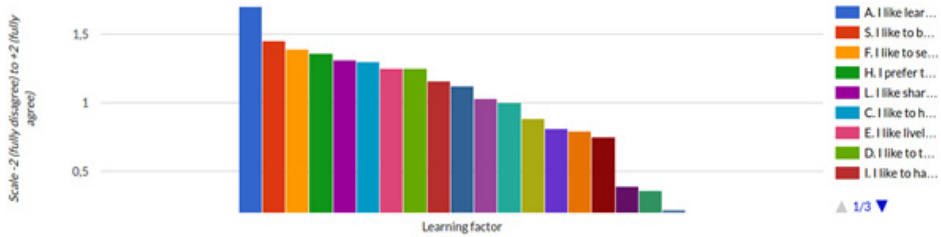


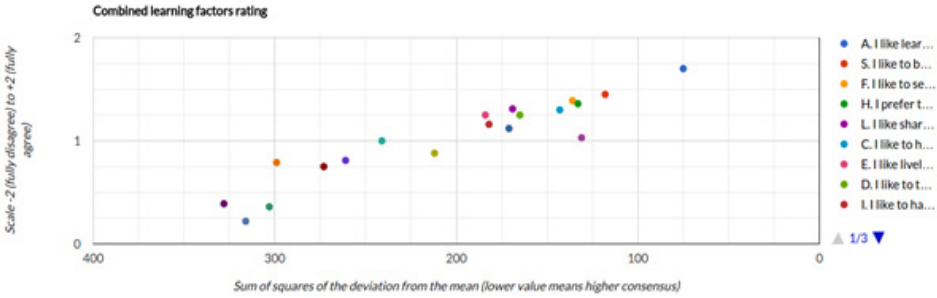
Learning factors survey data was statistically processed to obtain (1) a nominal scale value (scale between -2 and +2), and (2) a sum of squares of the deviations from the mean. A combination of the two values provides insight into which learning factors gather (1) positive responses and (2) greater consensus among respondents.

There are 11 factors which have a nominal scale value of 1.00+ and a distinct consensus in the answers (corresponding to a numeric value along the x-axis of less than 200.

A. I like learning new things
S. I like to be able to track my own progress and measure achievements
F. I like to set my own learning pace
H. I prefer to have time to explore and reflect upon new ideas
L. I like sharing my opinion on things I have read, listened to, or seen
C. I like to have control over the learning process
E. I like lively discussions in class
D. I like to take initiative and construct my own learning path, given some guidelines
I. I like to have additional materials and resources along the main training texts/content
R. I like to set my own learning goals
B. I usually learn fast and with ease





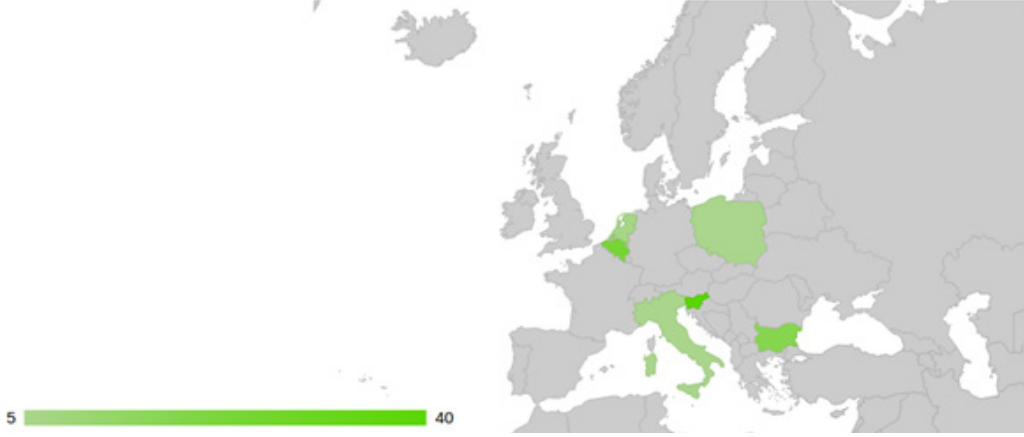


In addition, there are 3 factors which have an intended negative connotation in their wording, which was meant to make sure respondents do read carefully all questions and consider attentively all factors which they have been presented for assessment. We suggest that the following 3 factors be taken in consideration as they have distinct scale values indicating disagreement (on a negative statement), which should translate in a positive solution. These 3 factors have a scale value of well below 1.00 (0.22-0.39) However, the consensus is rather low (sum of squares of over 300), hence our suggestion that they be considered, but not be placed center-stage.

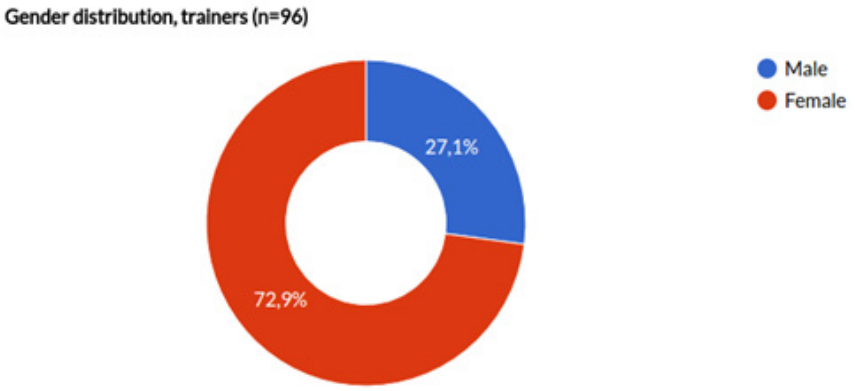
G. When in class, I like to sit quietly and listen
J. Having too many training content sources upsets me
Q. When I can't keep to-date with assignments and learning deadlines, I tend to lose motivation for learning

2.2 ADULT TRAINERS AND EDUCATORS: SURVEY SUMMARY AND CONCLUSIONS

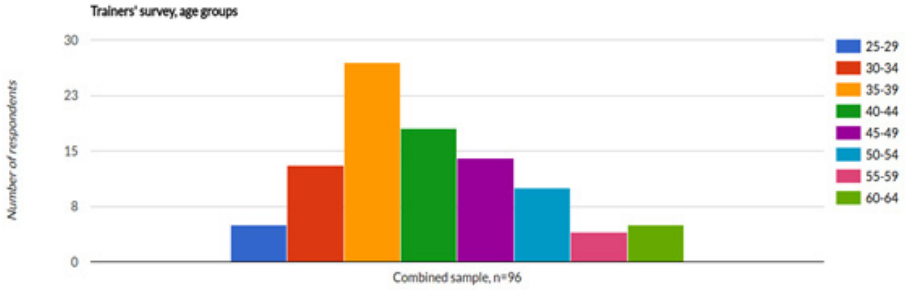
The total number of respondents in this survey is n=96. With an agreed sample of 5 per country, Italy is slightly below the target (n=3), with Slovenia (n=40), Belgium (n=24), and Bulgaria (n=18) more than offsetting this. Netherlands and Poland were on target.

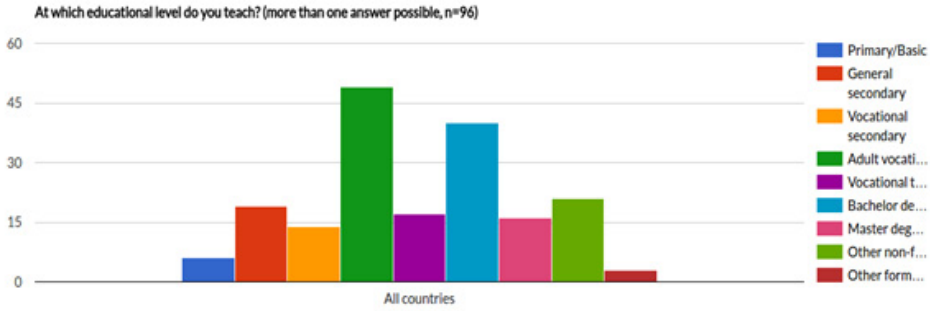


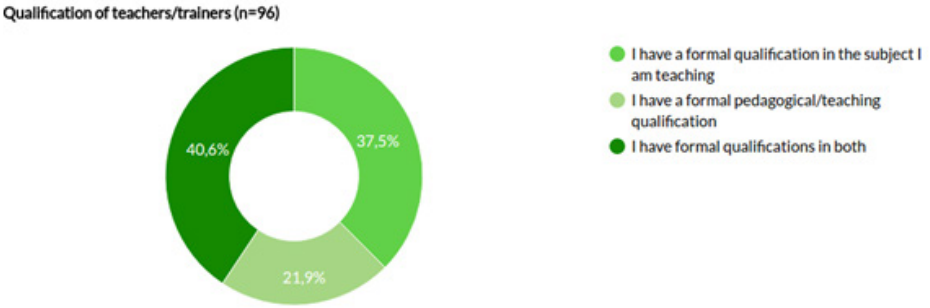
Gender distribution shows 27% males and 73% females.



Age distribution provides sufficient responses in all major age groups. Almost half (47%) of the respondents fall within two age groups in the 35-44 years range.

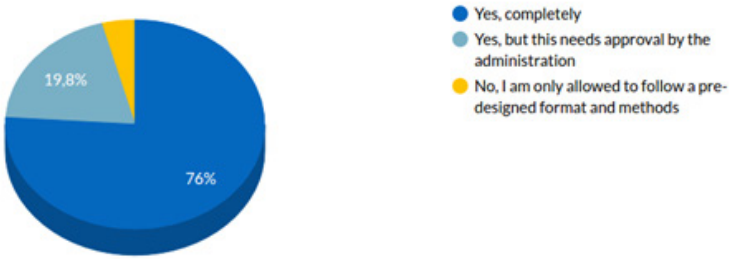






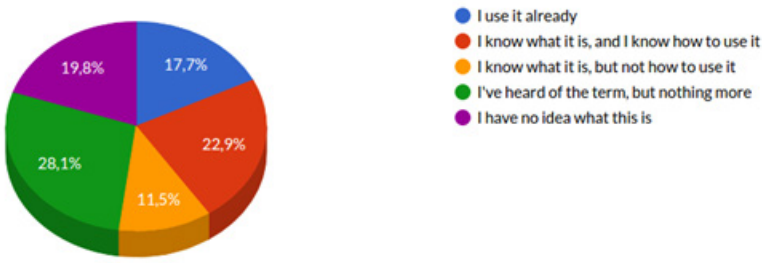
When answering a question on whether in their current teaching occupation the respondents have freedom of choice as to the teaching methodology, 76% say they have complete freedom, 20% say they need approval from the administration, and only 4% have a prescribed methodology to follow with no freedom. This distribution outlines an excellent pool of trainers and educators for iFlip to target and work with, and this part helped partners when trying to identify the trainers to involve them in the training and later invite them to the events promoting project results. A share of 3/4 stating, they have full flexibility on the choice of methodology suggests easier access to future experimentation and experimentation data.

In your current employment as a teacher/trainer/instructor, do you have the freedom of using a teaching methodology of your choosing (n=96)



Looking at the question which purpose was to establish if and how far in the implementation of the FTC method respondents are, we found that about 18% already use it, and another 23% are immediately ready to use it ("I know what it is and how to use it"). This brings a combined share of 41% of trainers/educators who would be ready and able to work with FTC with some assistance on the content part from iFlip. Yet another 11.5% seem to be in need of some additional training on the practical aspects, as they claim that they "know what FTC is, but not how to use it". A remarkably high share of respondents (just over 28%) have but heard of the term. They could become interested in FTC provided adequate and sufficient training is provided both on theory and practice. And another share of almost 20% have no clue at all what FTC means.

Are you familiar with the Flipped Classroom concept/method? (n=96)



The most interesting question is a matrix-type question asking respondents to rate different statements regarding their own teaching style and approach. Interestingly, the results show no or very weak correlation levels with age or with the degree of familiarity with the FTC concept. However, careful study of the numbers indicated that there may be a stronger correlation when we consider the country of the respondents. We measured this as moderately strong (0.4-0.6) in 3 factors and as strong (0.6-0.8) in 1 factor. Due to the small sample sizes per country, we could not derive statistically significant results for all countries, but we were able to do this for Slovenia (n=40), for all countries except Slovenia (n=56), and compare these with the results from the aggregated sample (n=96). We have summarised our findings in the table below, and the result is also graphically depicted at the end of this page. Because this question is tightly bound to the training approaches which we discussed and integrated in the pilot iFlip FTC courses, we are also attaching a downloadable spreadsheet to the live version of this survey (http://projectiflip.eu/en/alnar-surveys) which contains additional statistics for all the factors, namely shares by type of response (and also arranged in 3 datasets – all data, all data except Slovenia, and Slovenia only). It was recommended for partners to go through these simple datasets and consider the answers in the context of the sample of respondents which they targeted with the survey. A reasonable minimum threshold for the training approach/factor to be included in their FTC course design, perhaps somewhere in the range 1.25-1.50 (see the last graph on this page was recommended. It should be stressed that while the iFlip courses were designed with the FTC approach in mind, the survey only shows what the educators' current practice was (which may, or may not, necessarily cover all FTC course requirements. However, a closer match between the current practice and the future course requirements would ensure smoother take up and lower resistance to change.

Summary of training approaches/factors. Highlighted rows show moderately strong (0.4-0.6) to strong (0.6-0.8) correlation between responses and country of respondents.

2.3 CASE STUDIES AND GOOD PRACTICE MODELS

This chapter presents some of the findings of the Adult Learners Needs Analysis Report (ALNAR) research, which iFlip partners have done as part of the project implementation.

Partners made a desk research in their countries to see where and in what context FTC learning method was already introduced. The collection of 12 case studies and 6 good practices from all around the world was prepared. In some countries (Belgium, Poland, Bulgaria) more examples of flipped method used in practice were found. In others there were only pilot version or test done within EU projects. Here the selection of 6 is presented, chosen with the aim to demonstrate transferability and usability of the flipped learning method in different educational sectors and levels and not with the aim of representing every country. The entire collection is available online: http://projectiflip.eu/wp-content/uploads/2016/11/iFLIP-ALNAR-SecC-Summary.pdf

Good practice models used in different countries were analysed and are compiled in single document, available online: http://projectiflip.eu/wp-content/uploads/2016/11/iFLIP-ALNAR-SecD-Summary.pdf

1. FTC USED IN CLASS AFTER PARTICIPATING AT THE EDID CONFERENCE ON FLIPPED LEARNING

Reporting partner/country: Andragoški zavod Ljudska univerza Velenje, SI Origin of the method description: OŠ Solkan (elementary school), Slovenia

1. General setting:
The FTC was developed and used in the Elementary school Solkan, year 3 (age group 8-9), in subjects Math and Natural science. Each of the educators chose on topic to prepare and develop materials and construct a lesson according to the goals of the curricula.

For Natural science it was “Farm during seasons# and for Math “Parts of the whole”. Lessons were recorded using Screencast-O-Matic, which is easy enough to use to make a start. Materials were arranged and cut into short videos, multimedia features were added using SmartBoard. Videos were published on YouTube and linked to online classroom.

2. Description:
Although the experiment was intended for younger learners, they took it quite seriously. They have watched videos several times, most together with parents and other family members. This was followed by so called “homework” time in the classroom, where learners used the knowledge to fill out some tasks and exercises. Learners were very engaged and active; especially those with learning difficulties had less problems solving the tasks and required less help. At the same time not having to explain the content gave educators more time to focus on individual learners who needed help and support.
Sources and further reading:

- Source: http://mlearningvili.blogspot.si/2014/01/obrnjeno-ucenje-na-os-solkan.html
- Math Example
- Learning material (video): http://youtu.be/EPqIX0xT_hY
- In the classroom: http://youtu.be/easFbWn2cMQ
- Natural Science: Learning material (video): http://youtu.be/PYK0xvxEFTCE
- In the classroom: http://youtu.be/RwpwYG94liE

2. FTC USED IN SUBJECT ONLINE INTRODUCTION TO DIDACTICS / DIDACTICS FROM A DISTANCE

Reporting partner/country: Artevelde University College, BE
Origin of the method description: Educator training Center for Adult Education – CVO Vlaamse Ardennen

1. General setting:
Didactics is a course in the first year that introduces learners to course didactics. Learners are often confronted with diverse didactic models that they have to know and that they have to link to their observations during the observation phase of the internship. Function: 1. Online learning activity as preparation: a multitude of learning paths were developed about didactics: introduction to didactics, didactic models, linking the didactics to videos. The objective is that learners browse through these paths to process their assignment. 2. Guiding, practicing and co-operation: the learning

paths are linked to an assignment. An InterVision moment is organised before the deadline focusing on how the learners processed the didactic moments critically.

2. Description:
The E-learning setting allows learners to follow the course mostly independent from both time and place. A classroom session before the end of the assignment allows the educator to check how much of the course the learners already grasp. This combination -online preparation and intervision - forms an adequate base for the learners to start their observation and internship program. Amount of contact moments: 30% - 70% distance learning (= blended trajectory with regular contact moments).
Used tool: The learning paths were developed using Xerte.

Necessary infrastructure: PC and Xerte account (available at Tollnet.be)
Average preparation time: Developing the learning path itself doesn't take a lot of time. What does take a lot of time is shaping the learning path: WHAT will it contain and IN WHICH ORDER? In total, it will take about 10 to 15 hours of developing. It's important that you select and organize your materials before starting with Xerte.

3. FTC USED IN THE ENGLISH LANGUAGE MODULE AT THE ADAM SMITH COLLEGE OF MANAGEMENT SINCE 2013

Reporting partner/country: NTC/Adam Smith College of Management, BG
Origin of the method description: Adam Smith College of Management, BG

1. General setting:
The setting of this experiment is the English Language (EL) module of the 2-year management qualification programme at Adam Smith (EQF 5). Set for attended classes during weekends, the programme is designed for busy people and targets ever-increasing efficiency of class-time use. The

EL module is one of 18, and although it is part of the mandatory curriculum, it has often been regarded by students as of somewhat secondary importance. With erratic attendance due to very busy work and personal schedules on the students' part, we needed a solution which would allow the educator to:

- Work with random number of students during class time (attended learning);
- Maximise oral interaction to improve effectiveness of taught communication skills;
- Provide individual feedback, support and learning pathways based on entry levels of language competences and individual speeds.

2. Description:
What started as an experiment and was later partially introduced to other modules at Adam Smith, consists of:

- One introductory class meeting for the educator to establish the entry level, suggest to Learners and agree with them upon target learning outcomes (targets are, in most cases, individual).
- A set of videos (Youtube), which were selected by the educator (but not produced by Adam Smith), and are situation-based.
- Detailed instruction to accompany the videos, ranging from how to approach the videos, what to pay attention to (e.g. words, structures, non-verbal behaviour, etc.).
- Tasks (e.g. building a thesaurus, translate portions, re-tell the story, etc.) and quizzes for self-assessment.
- Two follow-up attended class sessions in a time agreed with the group.

- Final presentation of written coursework and oral presentation before the class.

Communication (asynchronous) between the class and the educator takes place in our e-learning platform, the Exploratorium (Moodle). Individual/ group video-conferencing possible upon request or educator evaluation.

4. CONTENT STUDY OF BASIC PHYSICS / MASTERING PHYSICS EDUCATION

Reporting partner/country: Artevelde University College, BE
Origin of the method description: Teacher training for secondary teaching education – University College Artevelde, BE

1. General setting:
This is a good practice for online instructions and online learning activity for learning physics, with focus on mechanics. The content is taught using the workbook Giancoli, which has an online learning package attached to it called 'Mastering Physics'.
Function:

- The online learning activity: Instruction and guidance: the contact moments involve the contents of the workbook (instruction). After each contact moment, the students are referred to a series of exercises to work with the content. Work flow can be followed by checking the tracks, and feedback on exercises can be given in the next contact moment.
- The physical learning activity: Practice: Mastering Physics allows the teacher to create exercises based on the content of the workbook. Every series of exercises is visible online for a short time right after each contact moment. There are learning paths with exercises to check the cognitive level of the students, regarding the theory the application of it.

2. Description:
An online training package with tracking of the student activities has many advantages. It provides an anchor for the students to regulate their learning process; they can estimate via the training package to what extent they are mastering the learning content and they get an indication of the expectations. For the teacher, the tracking offers important information to define the starting point for the educational process.

- Used tool: Mastering Physics is a learning environment in which the teacher can create exercises and assignments.

- A tutorial giving more information about the program: https://www.youtube.com/watch?v=1u2P47LUHD0

- Result: http://www.pearsonmylabandmastering.com/northamerica/masteringphysics/

- Necessary infrastructure: A personal login for students and teachers is necessary. The login data is linked to the Giancoli handbook that students have to buy.

- Sources and further reading: https://www.youtube.com/watch?v=1u2P47LUHD0

5. FTC USED IN THE PROJECT BASED METHOD MODULE AT AHE / UNIVERSITY OF HUMANITIES AND ECONOMICS IN LODZ SINCE 2009

Reporting partner/country: AHE/University of Humanities and Economics in Lodz, PL Origin of the method description: AHE/ University of Humanities and Economics in Lodz

1. General setting:
Project Based Method (PBM) – the essence of the module is a stand-alone problem-solving by the learner. Educator acting as an adviser who prepares the learner for tasks and advise how to solve these, with which alone

learner cannot cope. The workshop is a method of work aimed not only to transmit the knowledge, but on the development of personality and personal competence. This “active learning “promoting approach has many elements of flipped learning.

2. Description:
Learners in groups determine and develop under the guidance of an educator the common project related to their interests in the field of study. This action aims to acquire the practical skills necessary for the efficient performance of the work in the future. The learners gain a specific experience and the skills such as:

- ability to solve problems
- ability to take decisions
- ability to analyse a situation and drawing conclusions
- ability to communicate and cooperate in the group

Classes are conducted by the workshop method; whose essence is the active participation in the activities of all learners – the lecturer is a mentor and a moderator of the action taken. All members of the course work, learn, solve problems, learning some valuable lessons. An important role of the educator is not only a skilful control of the events, but also to be open to proposals and suggestions of the learners. With this method each attachment is different from other attitude, they learn to solve new problem situations.

The steps of project realization are as follows:

- independent determination of objectives and tasks
  formulation of ways of their implementation
- creative problem solving

- analysis of the effects of the adopted solutions
- evaluation of the value of the effects of the implementation
- deployment of adopted solution

Daily communication (asynchronous) – if necessary – between the groups and the educator takes place by e-mail, Skype and E-learning platform.

6. FTC USED IN ANAMNESIS LESSONS, DENTAL ASSISTANT, INTERMEDIATE VOCATIONAL EDUCATION, LEVEL 4, YEAR 1, SCHOOL-BASED PATHWAY

Reporting partner/country: Foundation Knowledge Center Pro Work, NL
Origin of the method description: Deltion College, NL

1. General setting:
This example is used for the course Anamnesis, Dental Assistant, Intermediate vocational education, year 1, School-based pathway. There were two groups, 50 learners in total. This form of distance learning is given by a qualified educator in the subject given. The educator is also trained in the use of virtual and flipped classroom. The Deltion helpdesk is available for real time online assistance. The presence/absence of the learner is monitored by the educator. The distance learning hours are incorporated in the Learners' roster. All learning outcomes are covered during an exam.

The learners are present in the virtual classroom via a webcam. Lesson cycles are evaluated at the end of the period. If, due to technical or other problems it is not possible to organize the distance learning, another time/day will be scheduled. In case another problem arises, the activity can always be moved to school.

2. Description:
The learner is instructed to log into the virtual classroom at a set time to view a recorded lesson. A network to discuss via text, chat and video has been set up. During and after watching the videos the learners need to work on a number of assignments together. The educator guides the group and can monitor the process live (and can intervene if necessary). The next day a 1,5-hour lesson is scheduled to further deepen and process the outcomes of the assignments.

This scenario is an answer to the educational question whether learners are able to do distance learning collaboratively. In contrary to the Deltion ICT pilot "Afstandsleren" (Distance learning), the educator does not guide individual learners, but groups of learners. The assumption is that the guidance will be easier to achieve, partly because learners themselves also have a role to fulfil amongst themselves. Every week during the third period the learners get instructions during an Anamnesis/Patient history lesson. At home the learners process the theory in groups based on an assignment that they have to hand in together. They have two hours to do so. After the distance learning the theory will be deepened at school.
Sources and further reading:

- Research results (Dutch)
https://deltion.mediamission.nl/Mediasite/Play/df6565ba6f644e64b39f-6529135c36a71d

- Link to video of pilot (Dutch)
https://deltion.mediamission.nl/Mediasite/Play/0b67708bb5ef4d-f1a6e1315a009871491d

Results of desk research show that FTC method is already used in most partner countries but rarely in the field of adult education. Some examples in adult education can be found in language courses, as those subjects usually include the use of ICT by default and seem therefore easier to flip. However, FTC is not about simply introducing the videos to courses, it requires careful planning and additional requirements. All 12 identified case studies were taken into consideration during modules development,

selection of subjects and during final implementation when newly developed flipped lessons were tested.

3 METHODOLOGY FOR FTC COURSE DEVELOPMENT - FROM CONCEPT TO IMPLEMENTATION

The aim of the conceptual framework presented in Part 1 and Adult learners and educators needs analysis presented in Part 2 was to prepare a ground for the development of the course on Flipping the Classroom. The aim of the course was to prepare materials and format for educators to follow and learn how to implement flipping the classroom method in their subject.

The development was divided in two parts:

- Developing a format / methodology that enabled educators to develop flipped teaching materials and courses by themselves. The format provides concrete tools and manuals that help to develop materials and courses quickly and easily, based on the FTC concept.

- Based on the work presented in Part 1 'flipped' teaching material on the framework itself was developed. This material focused on using self-learning tools.

Once the format and the course were developed the educators followed the course. During the course the educators developed FTC package that they later used in their training.

Initial plan was to go straight from format development to master course in Belgium, but partners decided to test modules and their usability first. Therefore, pilot testing was held at Artevelde University College, which served as evaluation tool and provided useful feedback for modification of the modules prior the official training in Belgium later attended by 15 educators from 5 countries.

3.1 TESTING THE MODULES PILOT FLIPPED CLASSROOM

From October to December 2017 Artevelde University College organized a pilot testing of the first version of the FTC course "Flipped Classroom, What, Why and How to design it". The aim was to test and evaluate the modules for final modification before the international training.

A) PARTICIPANTS

Fifteen people participated, all between 23 and 30 years old. They all were finishing their educator training at the end of the academic year 2016-2017, and became teachers for lower secondary education in one of the following subjects: science, music, art, health and care, history, computer science, economics, English language, French language, Dutch language, sport, economics etc. This mix of subjects brought a big variety in the pilot group.

B) ORGANIZATION

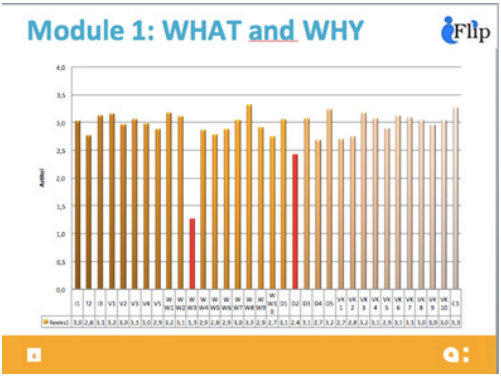
The participants went through the modules independently and were coached when necessary by the pilot educator from the Artevelde University College.

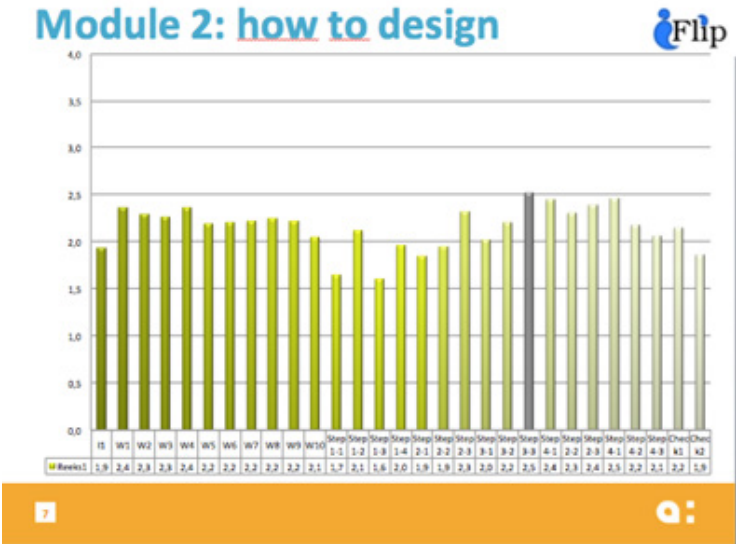
After finishing a module, the participants met in class for a face-to-face moment with the educator. This was necessary to get feedback both about the learning process and about the content of the module and the separate slides. During these face-to-face lessons the participants asked relevant questions and they were spontaneously giving peer feedback. The impact of learning from each other was interesting to observe.

C) FEEDBACK AND EVALUATION

The participants filled in a detailed evaluation form per module and per slide. They gave a score on a Likert scale (1 to 4) and added extra comments where necessary.

On average the slides and modules scored well, except for a minority of slides that scored less. Reasons of negative scores were mostly too much text, level too low or too high, unclear content.




Module 2: how to design
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Reeks1 1,9 2,4 2,3 2,3 2,4 2,2 2,2 2,2 2,2 2,2 2,1 1,7 2,1 1,6 2,0 1,9 1,9 2,3 2,0 2,2 2,5 2,4 2,3 2,4 2,5 2,2 2,1 2,2 1,9
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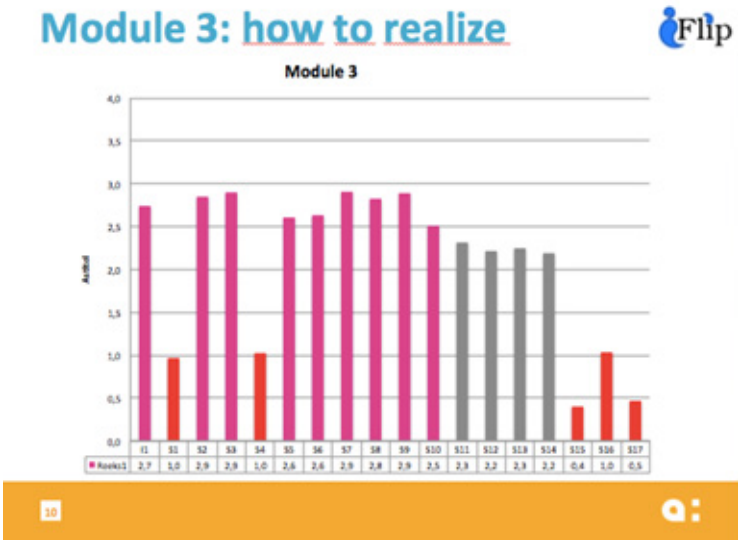
Module 3: how to realize
iFlip
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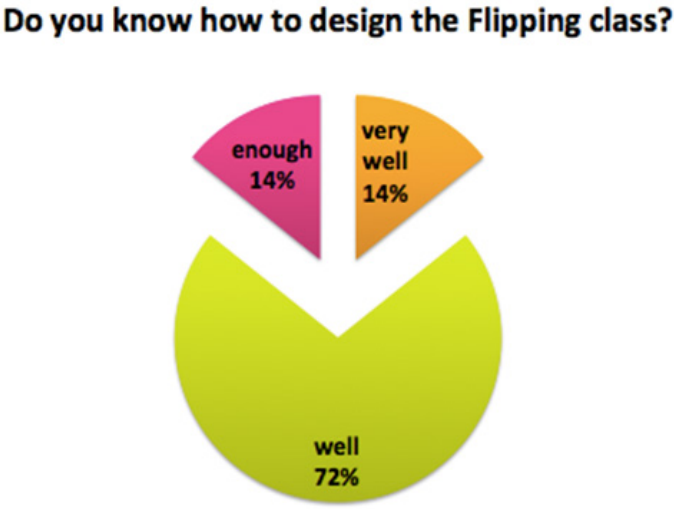
10

Lut De Jaegher and her intern Helena Pauwels presented the results of the evaluation and feedback from the Artevelde University College during the iFlip-meeting in Amsterdam (16/12/2016).



More than 90 % of the participants were able to write down the steps needed for the creation of a FTC lesson. They all answered positively to the question “do you know what FTC is and how to design it”.

D) FOLLOW UP

Artevelde University College adjusted the content of the modules according to the feedback. The modules were later tested again by two interns from Artevelde University College and then translated in English for the start of the master class.

3.2 TRAINING IN BELGIUM

Once modules were modified the preparation for the master class started. Well before the selection of the participants attending the course took place. As a help questionnaire was used to narrow down the selection. The main criteria were:

- interest in using innovative learning approaches and methodologies,
- interest and independency implementing ICT in the learning process and
- sufficient knowledge of English language.

Partners involved participants with the thought of having the biggest positive impact and filing the largest gap in relation to their learners' needs.

A) ONLINE MODULES

Training in Ghent was organized in a flipped way itself. The iFLIP modules were shared with participants before the training in Belgium. The idea was that participants already have basic idea about flipped learning before the face-to-face training.
The focus was on:

- research and theory and
- how can blended learning/flipped classroom be a good tool for learning.

THE CONTENT IS DIVIDED IN 3 MODULES:

Modules can be accessed on:
http://xerte.zorgopleiden.nl/play.php?template_id=40

B) FACE-TO-FACE TRAINING PART

Training was 5 full days training event held at Arteveldehogeschool In Ghent. It was a combination of individual and group work. During the training draft materials were prepared for the piloting courses which were later organized in partner countries.

DAY 1: Structure and didactics:

- How to design the framework of the flipped classroom course
  - o Didactical principles
  - o Structure: flipped/F2F
  - o Inserting incentives and assessments
- Making a framework for your own flipped classroom course
- Presenting the framework to the other participants

DAY 2: Tools and media

- How to create and develop the e-learning materials
- Tips and tricks for making e-learning material attractive, activating and motivating
- Tools
  - o Learning platform
  - o Assessments
  - o Screen capture
  - o Video recording and editing
  - o Communication tools
  - o Gamification
  - o Diverse

- Experimenting, choosing and using tools to develop your own flipped classroom course

DAY 3: Learning activities:

- Using tools to develop your own flipped classroom course
- Presentation
- Peer-feedback

DAY 4: Finalisation of the flipped course:

- Realisation
- Publication
- Feedback

DAY 5: Presentation and evaluation:

- Presentation of the developed materials
- Peer-evaluation of the developed materials

C) FEEDBACK AND EVALUATION

After the master class completion participants provided feedback – partly in a form of discussion with the course mentor, partly in form of questionnaires which were sent to them.

Results showed that most had little experience in flipping the classroom before the course but used some other methods that included ICT. They felt they have learned enough and were confident they will be able to implement the method in their courses. Last day was used for presentation and peer evaluation of the materials developed during the training and this served as a great feedback on how much they have learned and where the weak points are. It was mostly the fact that they have learned many new tools which now they need time to master and implement in practice. The fact that modules are online and therefore available at later time and as point of reference was evaluated as very positive.

Here are some statements from participants regarding how they liked the course in general:

WHAT DID YOU APPRECIATE ABOUT THE COURSE?

- The lecturer was very professional.
- Presentation a lot of educational tools, practical exercises and not just theory.
- It was good because students will be interested, and I realised there is lot of options for improvement of teaching material.

WAS THERE ANYTHING YOU DIDN'T LIKE?

- Nothing.
- Nothing was bad. We got a lot of information and tools at once.

But here could be more demonstrations about how does online classroom work.

- There is a lot of work for preparation and many options for improvement which can be a good or a bad thing.

4 PILOT COURSES IN PARTNER COUNTRIES – SUMMARY OF FINDINGS AND RECOMMENDATIONS

After the master course the trainers who completed the training implemented FTC methodology and developed materials during pilot courses in partner countries.

Pilot courses served as evaluation tool and were carefully monitored and evaluated. Adult learners provided important feedback on FTC implementation. The results served as guidelines when adjusting the methodology and materials.

Sixteen piloting courses were prepared by teachers from five partner countries. The courses were authored by educators who attended the C1 specialised training in Gent, or by their colleagues to which the training was passed via internal know-how sharing sessions. The initial plans included a total of 15 courses, 3 for each of the 5 piloting countries. The Slovenian partner produced 4 courses.

The courses are offered free of charge and require a minimum effort for a quick registration. A total of 303 participants registered in the pilots, 266 of which reached different stages of the courses and had a varied degree of participation. The courses were announced as demonstration pilots, and had no mandatory requirements for enrolment or completion. There was no grading or awarding of marks. Registration for the online part of the courses remains open.

The evaluation questionnaires which were standardised across the iFlip project provided data for the positive acceptance of the new format, sheer

interest in the diverse content and activities elements. Teachers were active and together with the IT assistants managed to create an interesting and activating environment in each of the pilot courses.
Pro Work monitored the implementation by collecting data and running analyses and evaluations on the available data. The work was focused on the following key elements:

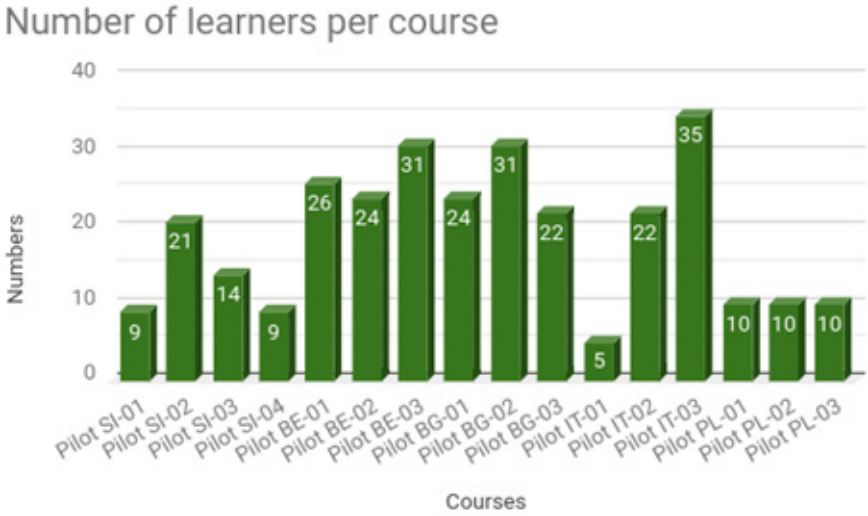
- Monitoring the design of the pilot courses and analysing their content elements and structure
- Monitoring the implementation of the pilot courses
- Analysing the National Pilot Reports produced by each partner organisation
- Summarising the pilot courses and the resource types pertaining to the FTC method
- Analysing the learners' surveys and their evaluation of the courses at partnership level
- Analysing the educators' surveys
- Visualisations of the underlying data
- Review of similar studies and qualitative comparisons
- Drawing conclusions and formulating recommendations

The Pro Work team worked closely with the partner organisations and was able to request and receive additional information when this was needed. After delivering national pilot reports the common piloting report was prepared and shared with partners.

THE FTC METHOD WAS INTRODUCED IN THE FOLLOWING COURSES IN PARTNER COUNTRIES:

COURSE CODE	COURSE TITLE	No. of students enrolled	START DATE
Pilot SI-01	Verbs in Italian	9	Nov 2017
Pilot SI-02	Barbara's classroom of Slovene	21	Nov 2017
Pilot SI-03	iFlip English Class (Present Perfect vs. Past Simple)	14	Nov 2017
Pilot SI-04	Selection of data in Excel and merging documents	9	Nov 2017
Pilot BE-01	Vlog for Educational Purposes	26	Dec 2017
Pilot BE-02	Social and digital media literacy	24	Dec 2017
Pilot BE-03	Masterclass Flipping the Classroom	31	Dec 2017
Pilot BG-01	Funny Microeconomics	24	Dec 2017
Pilot BG-02	Verbal and Non-Verbal Communication	31	Dec 2017
Pilot BG-03	Blue Ocean Strategy	22	Dec 2017
Pilot IT-01	Theories and models for the investigation of religious contexts	5	Oct 2017
Pilot IT-02	Computer graphics	22	Oct 2017
Pilot IT-03	Teaching technologies	35	Oct 2017
Pilot PL-01	Culture in a company – it is a develop-mental issue	10	Jan 2018
Pilot PL-02	Increase the group's resources. How to work in a team?	10	Jan 2018
Pilot PL-03	Coping – coping with stress	10	Jan 2018

The educators were at liberty to choose the topic and the format of their courses and were encouraged to experiment with different formats, settings, functionality, resources and activities. Although Moodle LMS was the preferred platform, some educators used different LMS. From the start, the main focus of the piloting was indeed to allow educators to find their own preferred format and modality of work with the FTC method which was intended to install a sense of control and comfort, and to allow ample grounds for deployment of their personal teaching styles.



4.1 COUNTRY EVALUATIONS REFERENCED TO THE NATIONAL PILOTING REPORTS

Background Information

Sixteen courses were developed according to the FC concept by educators from LUV (SI), Artevelde (BE), NTC (BG), Unipa e-learning (IT), AHE (PL). A total of 15 educators were involved in the development process of the courses. All educators have years of experience in educating adults using the traditional educational approach, which is teacher-cantered. Thus, the FTC approach is a challenge not only for the learners but for the educators also. The development process in all partner organizations consisted of several stages following the methodology created during the iFlip project.

A) SLOVENIA

Ljudska univerza Velenje (LUV) is public non-profit institution providing adult education. LUV provides courses in different formal and non-formal programmes. The nature and needs of the participants dictated the need for new and innovative approaches. The learners are adults, parents, usually employed, working in shifts with different obligations which makes it difficult to participate in face-to-face lessons regularly. Introducing flipped method makes it possible for them to prepare themselves and reduce the time in face-to-face lessons. It enables those of them who have difficulties following the course to spend more time to emerge in the topic and ask for help during the classes.

LUV developed four courses which covered the following topics:

- Verbs in Italian (Pilot SI-01)
- Barbara's classroom of Slovene (Pilot SI-02)
- iFlip English Class (Present Perfect vs. Simple Past) (Pilot SI-03)
- Selection of data in Excel and Merging documents (Pilot SI-04)

A total of 53 participants took part in the pilots. Only a name provided by the participant and a valid email address were collected. After the pilots, participants were asked to fill out a questionnaire. A total of 37 filled questionnaires were returned. Not all of them were filled out completely.

A mix of resources and activities was used in the creation of the courses (video-tutorial, video-lesson, PowerPoint presentation, quiz, assignment, workshop, interactive resources, forum) in order to achieve the aims of the training modules and to correspond with the needs and features of the adult learners.

The responses from the participants in the piloting courses were very positive and they were happy to try the new approach. Although little hesitant

at the start, they were eager to try and learn using technology instead of classic learning materials. Especially the group of immigrants (participants in Pilot SI-02) encouraged teacher to provide more materials in flipped manner. They preferred to learn at their own pace, and using computers allowed them to check for words they didn't understand during the explanation. They were able to play videos again if needed and they could do exercises at their speed. The level of knowledge in adult learners varies a lot and this allowed for those with better knowledge to learn more and those with less to ask questions.

The method is well accepted among adult learners and teachers. The majority of the participants think the flipped method is helpful in the learning of the course. Some students believe the flipped method is suitable for learners with good digital literacy. "Good for students who know how to work with ICT," comments one of the pilot course participants. All in all, the majority of students who took part in the piloting courses were aged between 31–40 years therefore we can assume they had no major difficulties using digital technology since they probably are using it on a daily basis.

All learners however replied that online learning alone is not something they would be interested in. Social contact between them and interaction is still very important to them. Especially with those using computers at work online learning environment was found less appealing. There is another concern when preparing the materials. Chosen and trained educators were all familiar with using different devices and some experienced in online learning platforms. For educators with little knowledge in this field use of the method present great challenge and support should be provided. The quality of materials varies according to the ICT knowledge of educators which should not be the case.

Experience showed that method can be implemented in different courses. LUV chose courses most visited to reach greater long-term impact and meet the needs of the market.

B) BELGIUM

Artevelde University College (AHS) is one of Flanders' largest university colleges and offers study programs in teacher training, business and graphic and media education, journalism, health care and social work. AHS has experience and expertise in training educators to increase their ICT-skills when they want to create courses using digital tools. The 3 piloting courses were developed and created by the same teachers that followed the FTC training in Ghent in April 2017. Each of them created courses according to their knowledge and interests. They choose contents that can seamlessly be implemented for adult education in a wide range of training institutes.
The three pilot courses can be found on the LMS environment of the Artevelde University College (Chamilo) and on the iFlip-website. They could be accessed freely after registration with name and email address.

AHS launched the following three courses:

- Vlog for Educational Purposes (Pilot BE-01)
- Social and digital media literacy (Pilot BE-02)
- Masterclass Flipping the Classroom (Pilot BE-03)

The courses were announced and open for registration during the poster presentation event https://www.arteveldehogeschool.be/oso/posterpresentatie/) at Artevelde University College on 21/06/2017, with 200 participants from secondary and adult education schools. The three courses were announced as pilots, and each learner could take the whole course or a part according to his or her interests and pace. Some of the learners were working on the online parts all by themselves, while others were working in pairs to learn the content. Some of them were not only experiencing this FTC teaching method using the pilot, but also started experimenting how to create their own F2F course.

A total of 81 people applied for participation to the pilots by providing their name and email. At whole 60 participated and finished and another 21 will

take the course from March to June 2018 because it fits better in their schedule. After piloting sessions, the participants were requested to share their opinions through filling out the iFlip questionnaire for learners. 26 participants returned completed questionnaires.

The following resources, incorporated in the LMS program, are used In the development of the courses: book, file, folder, label, page and URL. Media used in the three courses are video, pictures, podcasts and PowerPoint presentations with spoken text. To ensure interactivity the educators use several tools (for example Padlet, discussion forum, and survey). The interactivity is useful for the educators to have an idea of the learners' thoughts, whereas for the learners it is interesting to feel part of a learning community. Several activity options of the LMS program are used as feedback and evaluation tools for the pilots: assignment, choice, feedback, forum, quiz, survey.

Although the comments that attention should be paid to training time and equipment, all three AHS pilots are positively evaluated. The FTC method is highly appreciated by the educators and learners. The resources give learners the opportunity to learn at their own pace. While preparing the pilots, the educators discovered more and more possibilities to use interactivity, give feedback, organise the content. It inspired them to become more and more creative in developing and presenting the content and to install feedback, discussion and work sessions. For adult learners, FTC and the variation of media and other resources used made the content attractive and interesting to learn and gave the possibility to recapture, rewind, get and give feedback, discuss with peers and educators and to ask questions. The F2F moments were experienced as intense and interesting, both for the learners and the educators, because the learners came to class with a lot of feedback, questions, ideas.

Now that the pilots are realized and the know how to create course content with the FTC method is developed, the technique will be incorporated in the curriculum of the teacher training in Arteveldehogeschool. With 1500 students studying to become a teacher in secondary education and a large number of teachers, also from adult education, attending the Arteveldeho-

geschool for a training or completion course, many future educators can be instructed and guided in the use of FTC. The teacher educators from the Arteveldehogeschool will also get numerous of opportunities to be trained in the FTC method.

C) BULGARIA

The National Training Center (NTC) provides training and qualifications in business and related technologies for adult learners. It should be noted that the BG partner organisation has been shifting its training offerings to the FTC method in the last 5-6 years, and that the faculty has already had the opportunity to discuss and experiment this new teaching mindset. The educators picked out the subjects of the iFlip courses from their own professional field.

The three courses can be found on the online learning platform of NTC & The Adam Smith College of Management (Moodle LMS) as well as on the iFlip project website, and are named as follows:

- Funny Microeconomics (Pilot BG-01)
- Verbal and Non-Verbal Communication (Pilot BG-02)
- Blue Ocean Strategy (Pilot BG-03)

Only a name provided by the participant and a valid email address were collected. A total of 77 participants took part in the pilots, 16 of which only made a registration, but did not follow through. The remaining 61 reached different stages of the course and had a varied degree of participation. The courses were announced as demonstration pilots and had no mandatory requirements for enrolment or completion. At the end of each pilot course the participants were asked to fill in the questionnaire for adult learners. A total of 24 participants filled out the questionnaire.

The three courses were developed according to the Flipped Classroom concept by educators from NTC & The Adam Smith College of Manage-

ment. Each of these three educators were involved in the development process of one course. These three same educators attended 5 days training in Gent, Belgium as part of the iFlip project. During the development process the educators were supported by NTC's technical assistants who are familiar with the online learning platform and also helped with the use and integration of other didactic tools and instruments, including design following teachers' instructions and raw models.

All Bulgarian courses start with an introduction video, recorded by the teacher, in which the teacher and the course are presented. Large variety of resources are used to present and explain the course content: book, webpage, label, interactive resources, bespoke learning videos with animations, learning videos with animations. Feedback from the adult learners is obtained by using different activities: quiz, assignment, forum.

NTC reports the overwhelmingly positive assessment by teachers and adult learners of the FTC method. The diverse content/activities and use of different interactive resources has been highly appreciated by adult learners. Adult learners share that they like the fact that in order to prepare for the course they need to watch different videos, do tests and perform tasks. During the lectures they worked in groups, finding solutions for difficult exercises and cooperating for research tasks. Adult learners report as positive: - watching videos can be repeated over and over; - quiz - good feedback on own progress; - participants determine their own speed and learning hours; - the FTC method is suitable for larger groups, for varied groups (background, interests, age).

At the same time teachers indicate that pilot work is more successful when the designing of the courses is done in collaboration with an IT assistant. This helps teachers focus on the didactics of the course and not on the technical implementation, though they also confess that the IT-related work was a great learning experience for them as well. There is a notable trend that adult learners started looking for the same types of interactive resources in other courses delivered by NTC. The FTC method is well accepted and highly valued by the Bulgarian participants in the project.

D) ITALY

Consortium Unipa e-Learning begins its activities with the strategic decision of the University of Palermo and ANFE (National Association of Emigrants' Family) to invest in research, training, guidance, testing, development as well as application of new methods of learning, above all e-learning. The Consortium has a technologic partner Clio Spa, an electronic publishing private company, which is active in the field of e-learning.
UNIPA e-learning created three courses, namely:

- Theories and models for the investigation of religious contexts (Pi lot IT-01)
- Computer graphics (Pilot IT-02)
- Teaching technologies (Pilot IT-03)

The courses were developed by educators from the University of Palermo. One of these educators attended 5 days training in Gent, Belgium as part of the iFlip project. Another one of the educators that had passed the training in Gent supported the Italian teacher of the pilot course because of their collaboration at the University. The educators choose the subjects of the iFlip courses from their own professional field. The three courses can be found on the online learning platforms Moodle and Fidenia as well as on the iFlip project website.

The courses were launched with free access and only a name and email address were requested during the registration process. The participants in piloting were students of regular university courses and had been trained in using the blended approach. 62 adult learners took part in piloting courses and all of them provided useful feedback through filling out the learners' questionnaire.

Introduction videos for two of the courses were recorded by the teachers and uploaded on the platform which hosts the course. Different sets of re-sources and activities were used in each course compliant with the course

structure and features. Resources like book, file and learning videos were used to introduce the course content. Activities like quiz, forum, survey were used to receive feedback regarding the learners' progress.

A positive assessment of FTC method by adult learners and teachers is observed. Adult learners share that they like this new method of teaching instead of the face-to-face one. They like working in groups too as well as cooperating for research tasks. According to teachers the method is suitable for larger groups irrespective of the subject. They understood that it is important for them to have ICT skills as well as to be able to use these new tools. This approach helps teachers to focus on the didactics of the course and the best way to teach it in order to make it clear to the learners.

Unipa e-learning will continue to work according to the FTC method and is encouraging teachers to use iFlip techniques in their courses.

E) POLAND

Akademia Humanistyczno-Ekonomiczna w Lodzi (AHE) is an accredited higher education institution and is focused on educational research, innovative teaching and e-learning.

AHE offered three courses which covered the following topics:

- Organisational Culture - as a key to the organisational development (Pilot PL-01)
- Increase the groups resources. How to work in teams? (Pilot PL-02)
- How to cope with stress in a workplace (Pilot PL-03)

The courses are available on the Moodle platform supported by AHE and on the iFlip project website. The courses were offered free of charge and required a minimum effort for the registration – only a name, surname of the participant and valid email address is needed to register to AHE Teaching Platform. The data were collected by the platform.

A total of 30 adult learners participated in the pilot courses. There were three educators involved in piloting. All participants filled out the proposed questionnaires.

A number of resources and activities are used in order to create course content and make it more understandable and comprehensible for the students. These include page, file, folder, assignment, forum, videos, dictionary.

Both adult learners and educators assess positively the piloting courses and the FTC method. Although there are some aspects that are not well appraised like little training time, sometimes tasks and instructions are not clear, the aggregated assessment is predominantly positive.

4.2 AGGREGATIONS AND OBSERVATIONS

A) LMS PLATFORMS OR LEARNING ENVIRONMENTS

The educators in this project used 3 different platforms for their pilot courses, and different educators in the same organisations were free to choose different platforms.

Moodle LMS (14 courses, all organisations). Free and open-source LMS available as hosted solution or for installation on own server running under Linux, Windows, and macOS. The Moodle Mobile app is available for Android and iOS, and Moodle Desktop is available for Windows, macOS, and Linux.
https://www.moodle.org/

Edmodo LMS (1 course, SI). Proprietary LMS available online and for Android, iOS, and Windows. Edmodo mobile is available for Android, iOS, and Windows.
https://www.edmodo.com/

Fidenia LMS (1 course, IT). A free online social learning platform (in Italian only) with paid premium services. Mobile app available for iOS e Android.
https://www.fidenia.com/

Though 14 of the 16 courses were built in Moodle and the number of courses built in Edmodo and Fidenia is too small for any meaningful quantitative evaluation, the feedback from learners and educators did not indicate any significant departures from the average values which could be attributed to the choice of learning platform.

Based on the observations and the discussions with both educators and decision-makers from the organisations involved, it seems that the successful model for future flipped classroom courses in adult education would be to stick to one platform so that all courses in one organisation can be delivered through the same platform. This has the significant advantages of providing seamless learning experience to learners who participate in more than one course, and the ability of the organisation to properly maintain the software platform and its settings. This said, we acknowledge that in some circumstances the particular course design may require features and functionality not available in the organisation's platform of choice, therefore arrangements need to be put in place to allow the design and delivery of such courses to continue and remain as closely integrated as possible with the overall learning infrastructure.

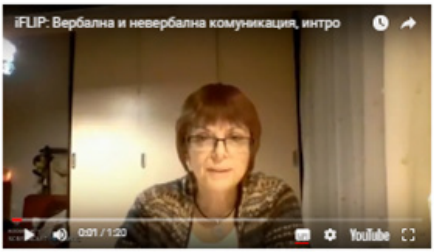
B) RESOURCE AND ACTIVITY TYPES

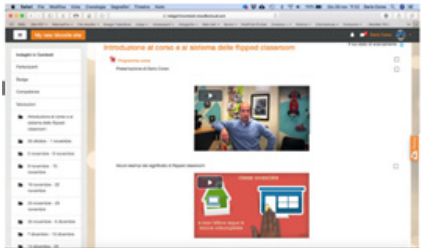
During the pilot courses we used and tested the following **content types, activities and tools.** Besides that, we have been constantly improving the quality of the resources by replacing content with glitches (e.g. not very good audio on a video clip) with improved quality.

We will start by describing and showing the different **content types, activities and tools** used when designing the courses, so that the next part becomes clearer to the reader:

- Introduction videos from the educators.

These were recorded by each teacher using their preferred device and recording software (both open-source and proprietary). In some cases the video clips were then passed on to technical assistants for editing (cut and paste, noise reduction, other effects). The final version of the clips was uploaded either directly to the course or to Youtube channels and linked from within the Moodle LMS which hosts the pilot courses.

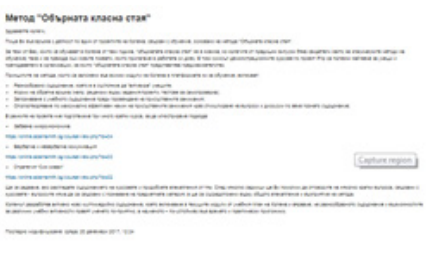




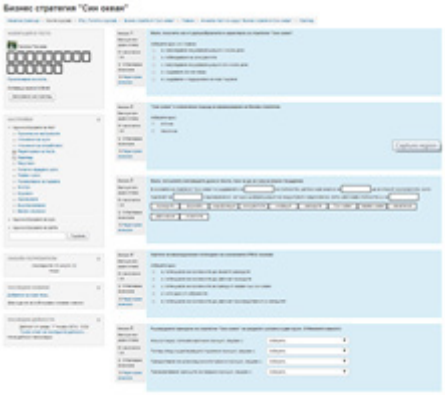
- Moodle LMS internal content & activity modules:

BOOK - this is the mainstream content module which corresponds to the classic paper-based textbook. Books allow to be structured in chapters and contain rich formatting, incl. embedded media and external apps code.

WEBPAGE - this is a stand-alone resource which, as with any webpage, can contain any html and other embedded code.



QUIZZ - quizzes are an activity module used as self-assessment or teacher-assessment. They support a wide variety of question types and can be constructed in a way which allows immediate automatic grading.



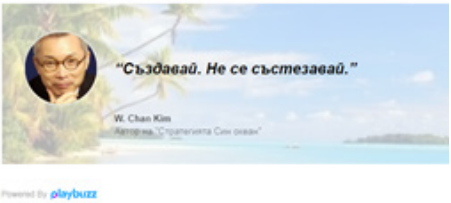
ASSIGNMENT - assignment activity modules are used to convey instructions to course participants and give explanations on what is expected from them. They usually cover course material or skills, mastery of which can be demonstrated by submitting a research-based project or a description of an accomplished task, individually or in group.

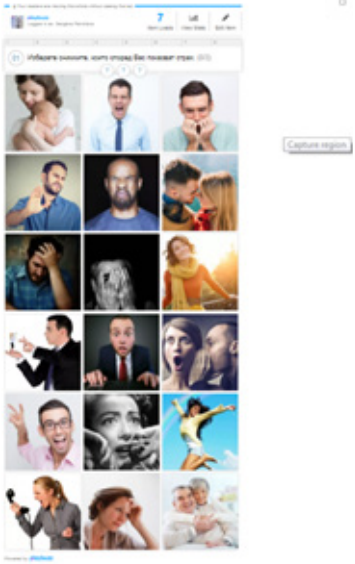
FORUM - forums are used to provide a space where participants can discuss with peers and teachers anything that is course-related. In practice, this module is rarely used, though it may seem to run contrary to the logic. Participants are nowadays more interested in getting control over their own learning and not so much into social activities within a course. In fact, our experience over the last years indicates that participants are much more likely to form a separate group (e.g. on Viber, WhatsApp, etc.) than to use the formal space provided by the educational organisation.

BADGES - badges are bringing the learning experience one step closer to full gamification. They have a powerful motivational value. During the pilots, a specially-designed badge was awarded to participants who were particularly active.

Interactive resources designed with playbuzz.com:

PLAYBUZZ is a very powerful interactive content builder which is widely used by media organisations. It allows you to design a number of interactive rich-media content which is then integrated via embedded code into any webpage, CMS or LMS platform





- Bespoke learning videos with animations

High-quality instructional videos produced in-house to help students respond positively to engaging learning content

- External learning videos with animations - SKY News –

Various video clips and animations which support the learning, but are produced outside the piloting organisations and are used with permission or under the fair use policy and/or creative commons licenses.

- Interactive resources designed with Edpuzzle

A video-making platform with educational orientation.

4.3 LEARNERS' EVALUATION SURVEY RESULTS AND ANALYSES

Evaluation of piloting was carried out via adult learners surveys. The questionnaire was developed by Akademia Humanistyczno-Ekonomiczna w Lodzi -- "Piloting-learners" questionnaire -- and data collected from it was later analysed in detail by Pro Work.

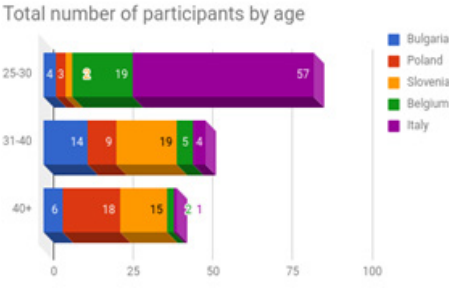
The collected questionnaires were as follows:

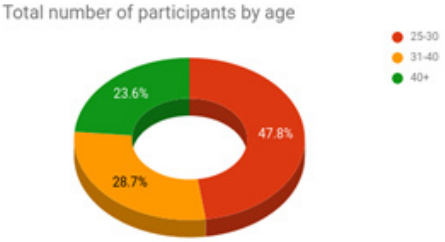
- All Learners n=179
- Slovenia n=37
- Belgium n=26
- Bulgaria n=24
- Italy n=62
- Poland n=30

The preliminary targets were set at 20 surveys per country and all countries met and exceeded these targets.
The comprehensive datasheets on which the analyses were carried out may be found in Piloting report.

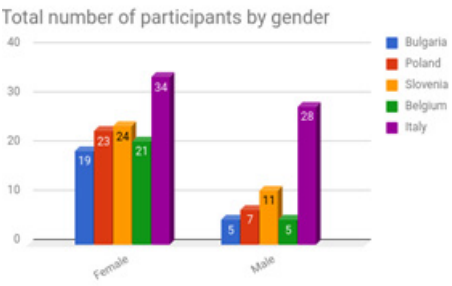
Demographics:

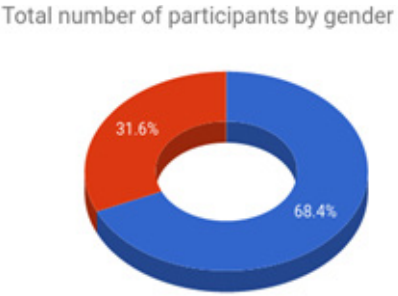
AGE. The distribution of respondents by age is presented in the following graphs. We see a clear dominance in the 25-30 age group with just under 50% of the total. However, Italy has provided a disproportionate number of surveys in this age group which is based on their own adult learners target group. Were we to adjust for this outlier, we could expect a more or less equal share of one third each for the three age groups for which we have aggregated data.





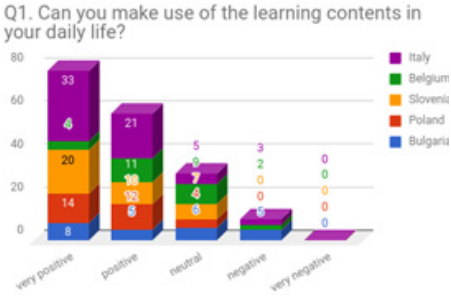
GENDER. The distribution by gender demonstrates a clear female majority among respondents. Further discussions with the partners indicate that this reflects the ratios of the general population of adult learners in each of the training institutions piloting the courses.

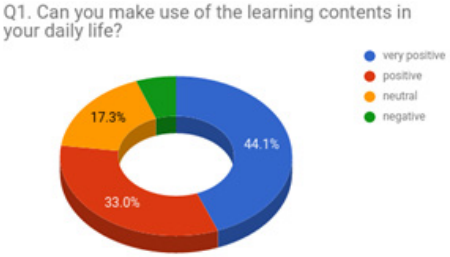




Q1. Can you make use of the learning content in your daily life?

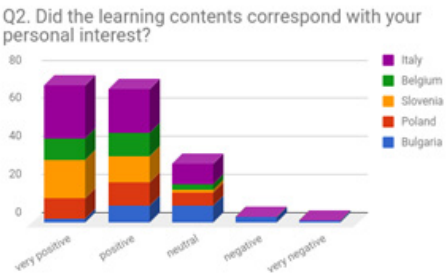
We recorded overwhelmingly positive responses to the question of direct applicability of learning content. Negative responses account for just 5.6% of all respondents. Neutral responses in similar surveys indicate learners inability to relate the content to their daily routines. In our case this can be explained by the nature of the piloting - learners were invited to test the courses regardless of their general interests and the courses were not mandatory in any way and/or part of the approved and accredited curriculum. The positive side of the responses totals 77.1% (positive and very positive).

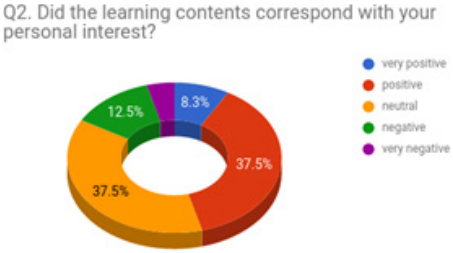




Q2. Did the learning contents correspond with your personal interest?

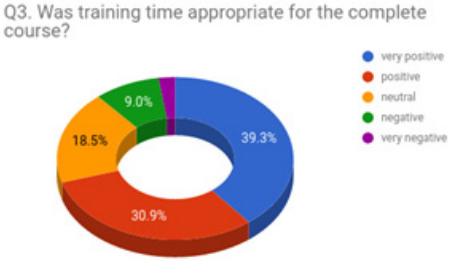
The next survey question shows the preferences and personal interests of the participants regarding the content of the pilot courses. The positive side of the responses (positive and very positive) sum up to 45.8%, neutral responses are at 37.5%, and the negative side (negative and very negative) totals 16.7%. Again, this should be considered in the light of free-registration and non-mandatory pilots where people who registered may have been initially attracted by the name or a friend's recommendation, without knowing the actual course content structure. We must reiterate that the question is whether the content corresponds with respondents' personal interests, and is not about the quality of content, which is evaluated further down in the survey.





Q3. Was training time appropriate for the complete course?

There seems to be a general consensus that the training time allocated by the piloting organisations was appropriate. We should not, however, neglect that almost one fifth gives a neutral opinion, and about 10% give negative or very negative answer. Educators should be looking into the source of that hesitation and disapproval when they design future courses.

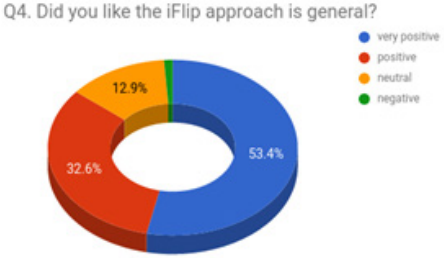


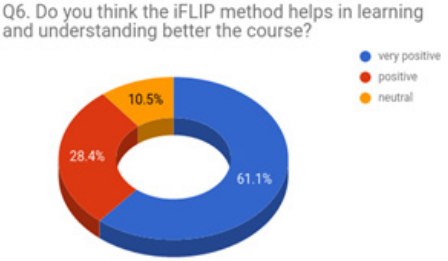
The next questions are no longer analysed in alphanumeric way. Group analyses was chosen where a set of questions where subjects overlap or supplement each other was studied. From analytical standpoint, there is much added value in reviewing the data from such questions in a set.

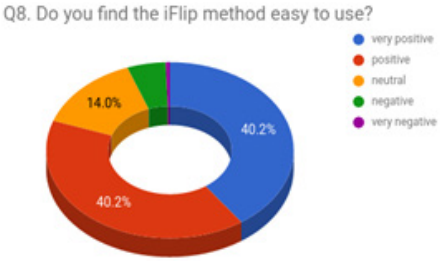
Q4. Did you like the iFlip approach is general?
Q6. Do you think the iFLIP method helps in learning and understanding better the course?
Q8. Do you find the iFlip method easy to use?
Q9. Do you find the iFlip method helpful in learning the course?

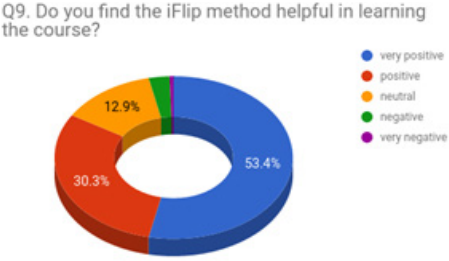
We seek to establish how did the respondents view the iFLIP method - from a general (Q4) perspective (considering they are not trained in FTC and have no previous experience or knowledge of the method), with regard to (Q6) whether it improves learning and understanding the particular course, the (Q8) ease of use (on the learner side), and (Q9) the overall helpfulness of the method in learning the course.

Positive-side answers across all 4 questions range from 80.4% to 89.5%. Clearly respondents attribute high value to the FTC method used in iFLIP. Neutral answers indicate that learners are unable to make such judgements at the time the survey was taken. Negative-side answers range from 0% to 5.6%.



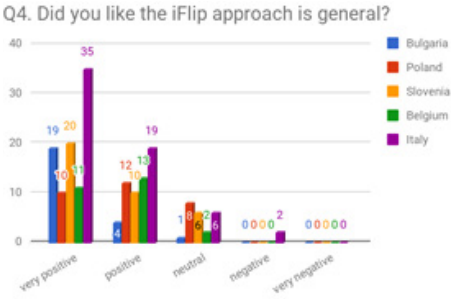


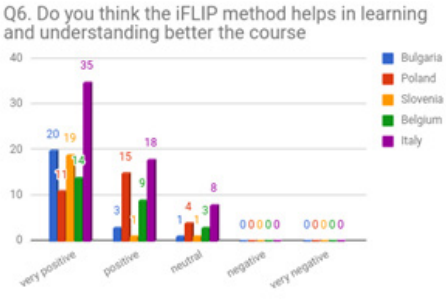


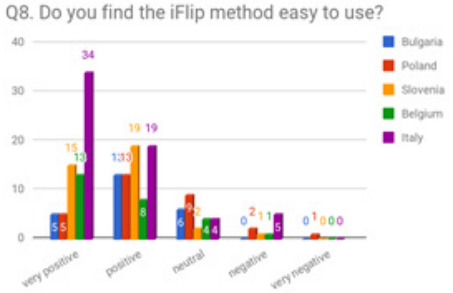


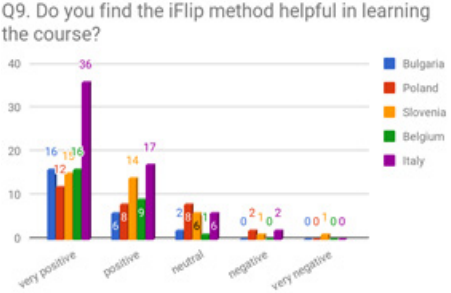
The next 4 graphs show the per country values of the same questions. The analysts' attention was drawn to Q8 which, with the exception of Italy, exhibits a pattern in which learners are somewhat more hesitant (compared to the other questions in the set) in their opinions on the ease of use of the method. This is the only question in the set where we see positive answers top the very positive answers (for Bulgaria, Poland and Slovenia). In our opinion, this could be due to any of the following: design, difficulty level, course instructions. In particular, we find a corresponding trend in Q10

(clarity of course instructions) where average values for Bulgaria and Poland are relatively low compared to the rest of the countries.



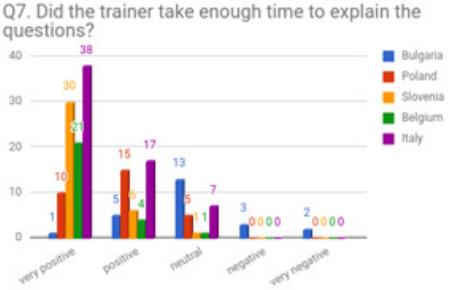






Q5. Was the trainer able to answer your questions?
Q7. Did the trainer take enough time to explain the questions?

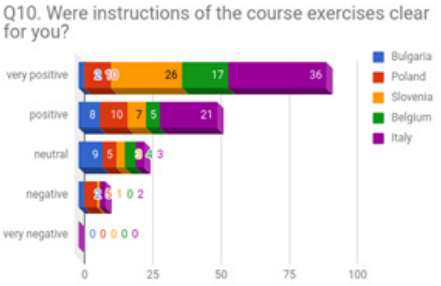
Q5 is a form of evaluation of the educators' competence in their respective field, and of their mastery in handling and addressing questions.
Q7 seems to be raising doubts about the teacher having taken time to explain outstanding issues. On a second reading though, the analysis shows that the majority of those who replied in the neutral range never placed a question online or did not attend the attended training session where they would have had the opportunity to answer a question. With regard to this, we believe that the respondents actually used the neutral option more like a N/A response option. This hypothesis has been confirmed in particular for Bulgaria in discussion with the BG partner.

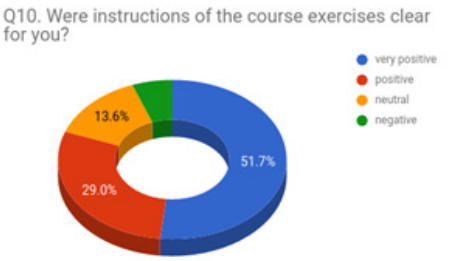


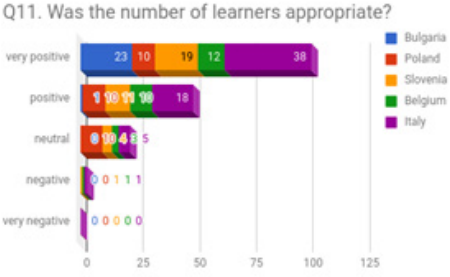
Q10. Were instructions of the course exercises clear for you?
Q11. Was the number of learners appropriate?
Q13. Was the equipment appropriate?

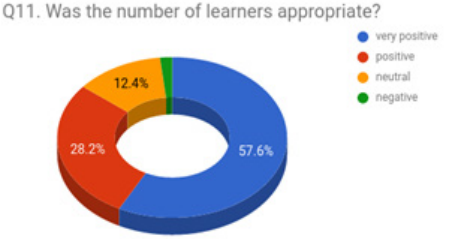
This set of questions revolves around the appropriateness of resources and inputs at rather technical level - clarity of instructions, number of learners in group, equipment used. We note that Q13 has a somewhat wider and not very clear subject field (which should be considered when reviewing the questions before they are used again, and perhaps rephrasing and breaking the question in several subsets would be appropriate). In its existing form, it may be thought of referring to: ICT equipment used in the training rooms for attended sessions, equipment needed to access the content and activities, other (non-ICT) equipment used during the attended sessions. We recommend that Q13 is analysed by the partner organisations with respect to each individual course.

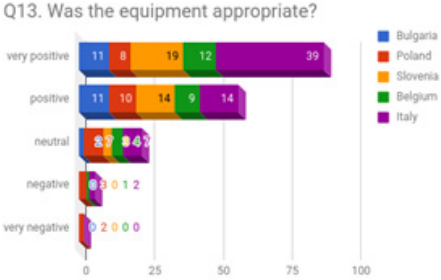
We find that Q10 is an important question which should find its proper feedback channel back to the educators (and technical staff involved in setting up the courses and writing instructions). Lack of appropriate instructions can easily lead to confusion, loss of motivation, and poor learning performance. This is of paramount importance in non-pilot course editions. As analysts and educators, we recommend that such instructions are tested for clarity and understanding before they are launched as part of a regular course.

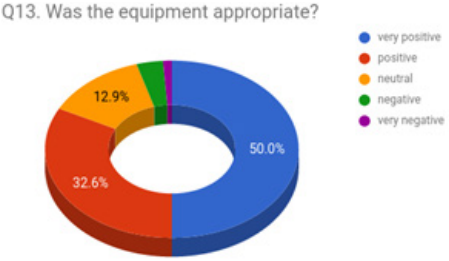








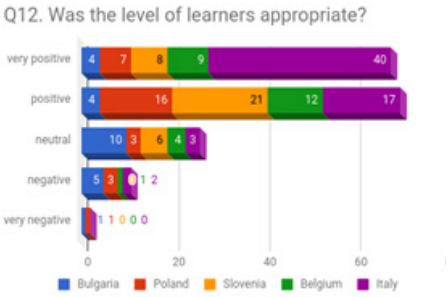


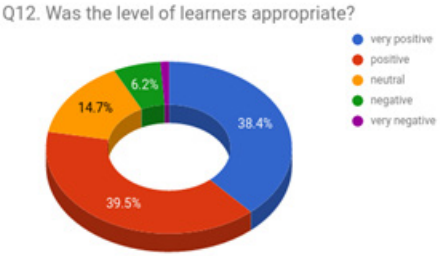


Q12. Was the level of learners appropriate?

As the pilots were freely available and there was no formal selection of participants, resulting in greatly heterogeneous groups at different knowledge/skill level, this question has little value if analysed at an aggregated level - the responses may be helpful to the educators and administrators at course and institution levels.

In non-pilot educational setting, the entry level of the course participants is part of the course requirements. The level of course materials and assignments is typically aligned with that entry level and target specific learning outcomes. The pilots had the format and purpose of demonstration courses and were also sandboxes for the educators who had the opportunity to experiment. When the participating organisations transition from the pilot versions to more elaborate versions linked to their accredited curricula, such variances will be limited.



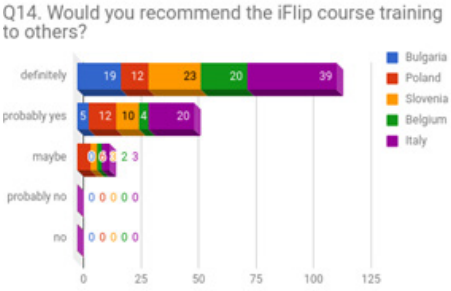


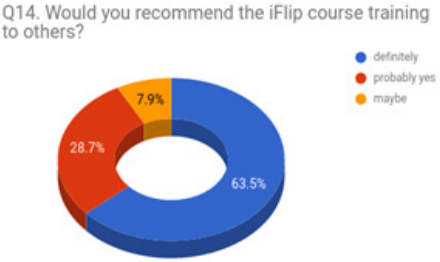
Q14. Would you recommend the iFlip course training to others?

At the end of the survey there was a question on the propensity to recommend an iFLIP course to others. Given that this is learners' survey and they have not been trained on the pedagogical aspects of the method, the learners consider the iFLIP courses as representatives of the FTC method. This places an indirect link between this question and the previously analysed questions' set Q4-Q6-Q8-Q9.

We see from the results that 63.5 % are determined to recommend the course in which they have participated, with a further 28.7 % saying that this is probably. Only 7.9 % are hesitant (maybe) and there are no negative answers.

The country data confirms that this distribution is valid across all piloting countries with only Poland showing parity between those who are strongly determined to make a recommendation and those who say that there is a positive probability to do so. Bulgarian respondents seem to be positively determined and not hesitating at all.





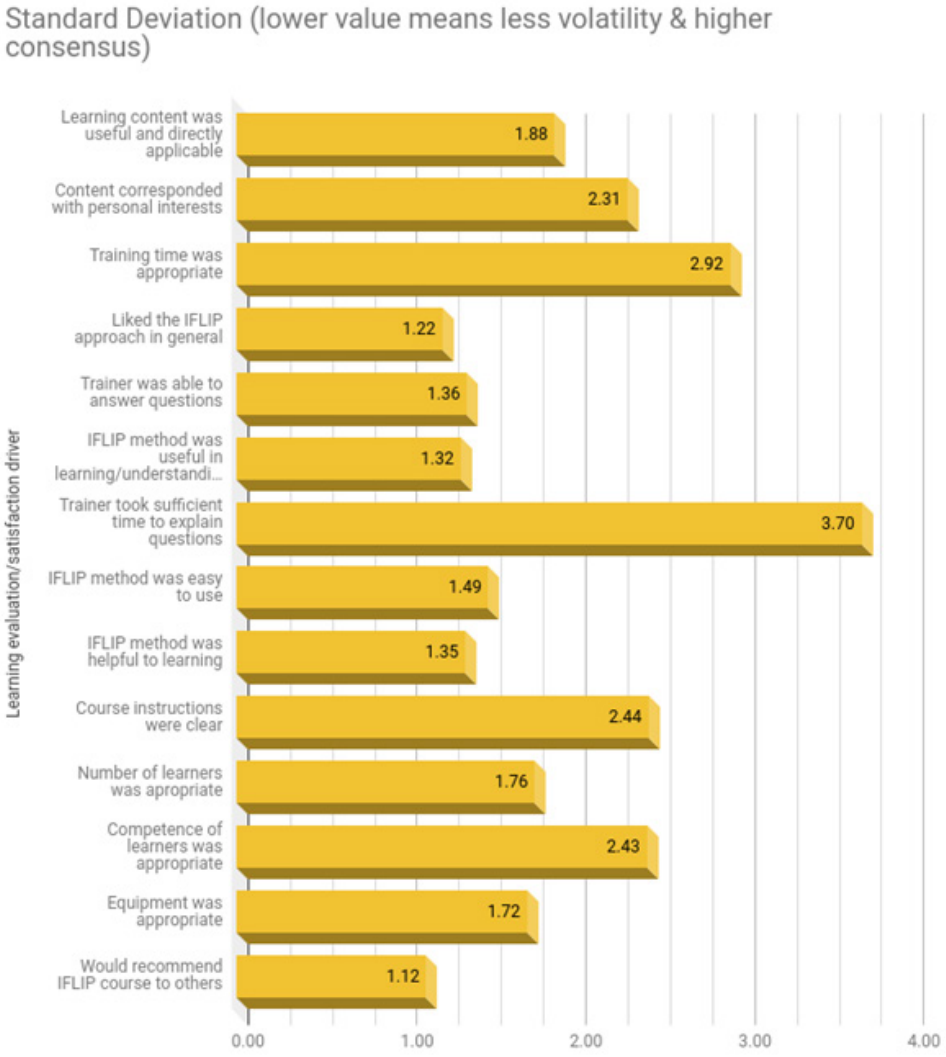
COMPARATIVE ANALYSIS OF THE LEARNING SATISFACTION DRIVERS.

The questions from the learners' survey give an insight into the learners' perceptions on the pilot courses. For the purposes of the evaluation, we consider them to be learning satisfaction drivers. We wanted to make sure that we do not put too much or too little weight on any of the aggregated results given that we had different sample sizes. At the same time, the evaluators did not have the comfort of large data samples from which to make proper stratification. Therefore, we decided that it would be methodologically correct to use all data in our aggregated tables and always present the individual countries' data next to it - this is what we did in this section so far.

Learning evaluation/ satisfaction driver (max +10, min. -10)	SI	BE	BG	IT	PL	All countries	Variance	St Dev
Learning content was useful and directly applicable	6.76	3.27	3.33	6.77	6.67	5.78	3.53	1.88
Content corresponded with personal interests	7.71	6.54	1.67	6.37	5.67	5.90	5.36	2.31
Training time was appropriate	7.08	5.58	1.04	6.37	1.17	4.80	8.52	2.92
Liked the IFLIP approach in general	6.94	6.73	8.75	7.02	5.33	6.91	1.48	1.22
Trainer was able to answer questions	9.32	9.42	9.00	7.98	6.17	8.29	1.85	1.36
IFLIP method was useful in learning/ understanding the course topic	9.29	7.12	8.96	7.21	6.17	7.53	1.75	1.32
Trainer took sufficient time to explain questions	8.92	8.85	0.00	7.50	5.83	6.70	13.66	3.70
IFLIP method was easy to use	6.49	7.88	4.79	6.61	3.17	5.73	2.22	1.49
IFLIP method was helpful to learning	5.54	6.35	7.92	7.13	5.00	6.66	1.83	1.35
Course instructions were clear	7.84	7.50	2.38	7.34	4.17	6.34	5.94	2.44
Number of learners was appropriate	6.86	6.35	9.79	7.50	5.00	7.09	3.11	1.76
Competence of learners was appropriate	5.29	5.58	1.04	7.66	4.17	5.40	5.88	2.43
Equipment was appropriate	7.22	6.15	6.88	7.26	3.17	6.35	2.95	1.72
Would recommend IFLIP course to others	7.78	8.46	8.96	7.90	6.00	7.78	1.26	1.12
Country averages across all drivers	7.36	6.84	8.96	7.19	4.83	6.52	1.33	1.15

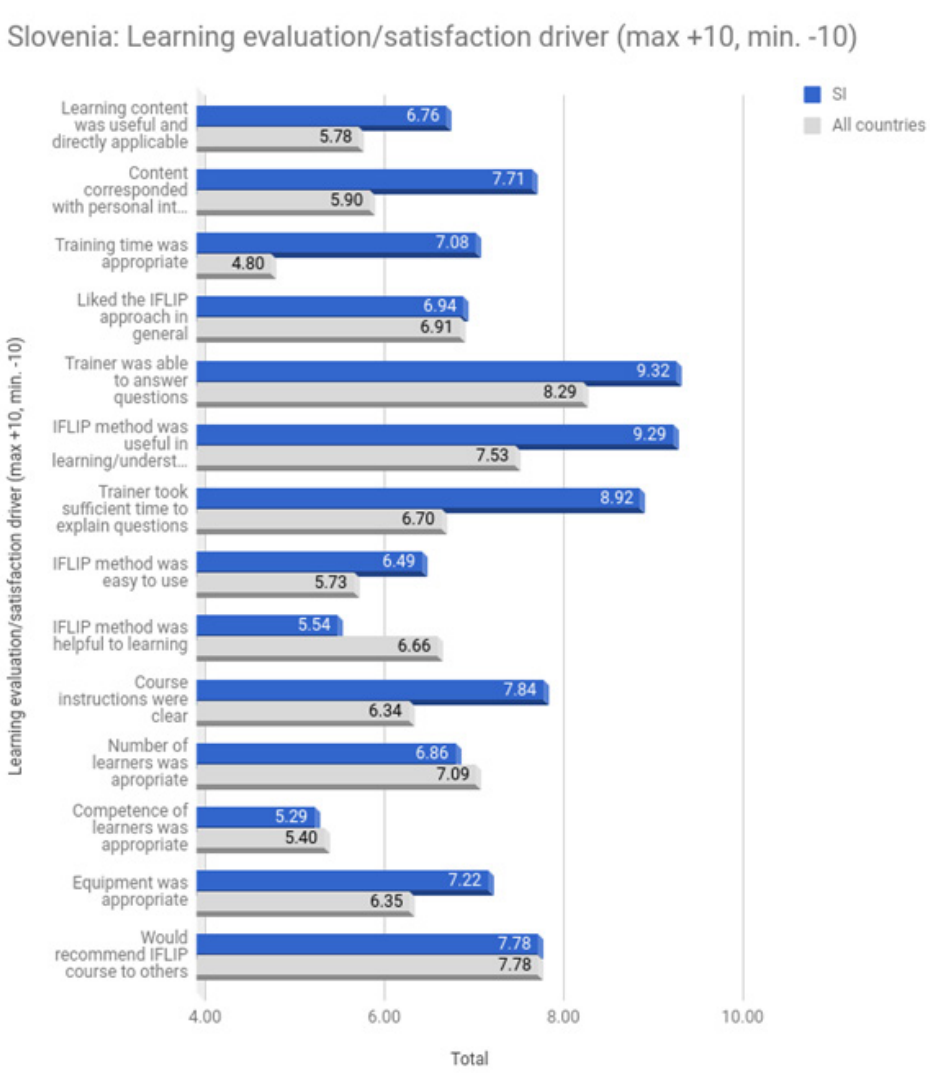
In addition to this cautious approach, we also calculated and studied the variance and the standard deviation of each country's average values for each satisfaction driver versus the average aggregated value for this driver for all countries. The results indicate the extent to which individual countries' results are close to (or depart from) the aggregated dataset, or their volatility. Such analysis would show if there are such significant differences, which would in turn lead us into recommending that each participating organisation investigates further the matter to establish the reason behind the differences. It could mean, for example, that some teachers have used a lot of some very engaging resource type, or that others have been lenient in preparing for their attended sessions. All such reasons would produce larger variance and standard deviations from the aggregated averages.

We also devised comparison charts between average value per country for each driver and aggregated average value.



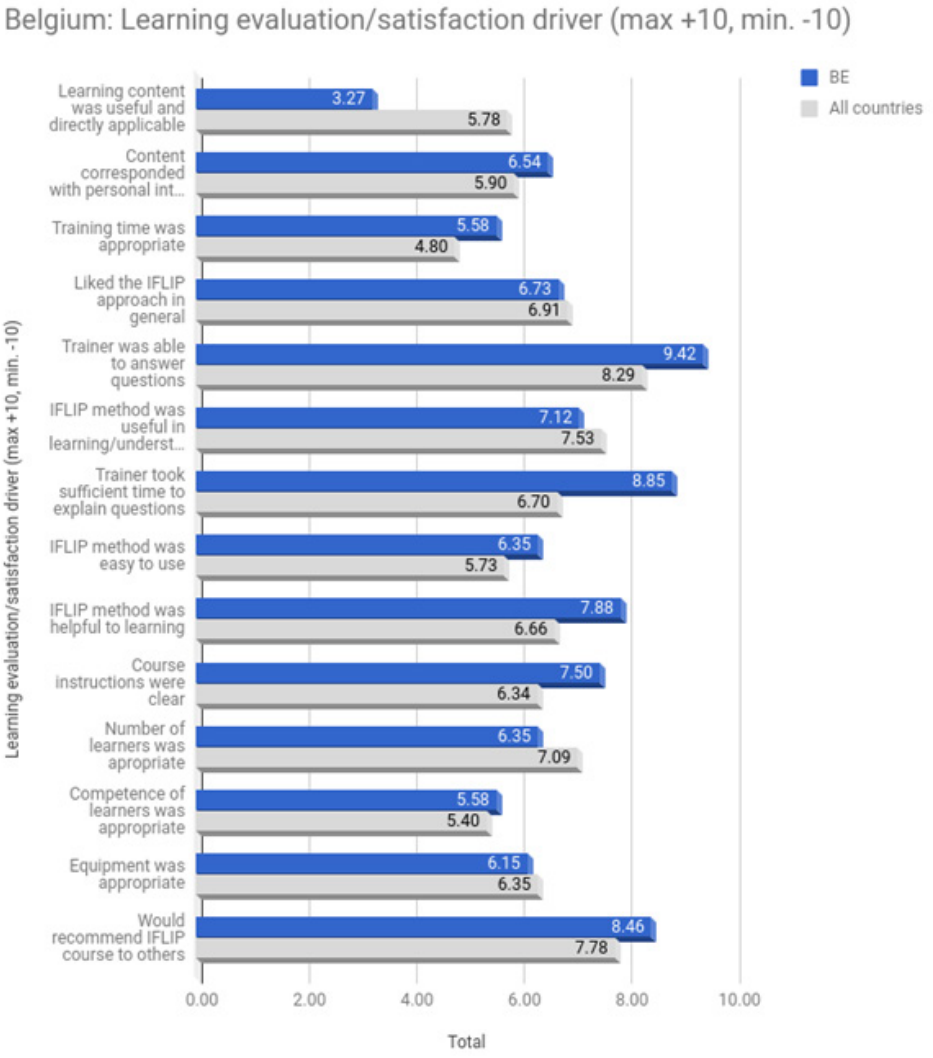
The standard deviation, a measure of volatility, shows us which learning satisfaction drivers have most significant departures (both positive and negative) from the all-country aggregated average. One driver is peaking (trainer took sufficient time to explain questions), which has been addressed already in the driver's analysis for Bulgaria. This is followed by another one

(training time was appropriate), addressed in the driver's analysis for Poland and Bulgaria. No other values exhibit significant variance.

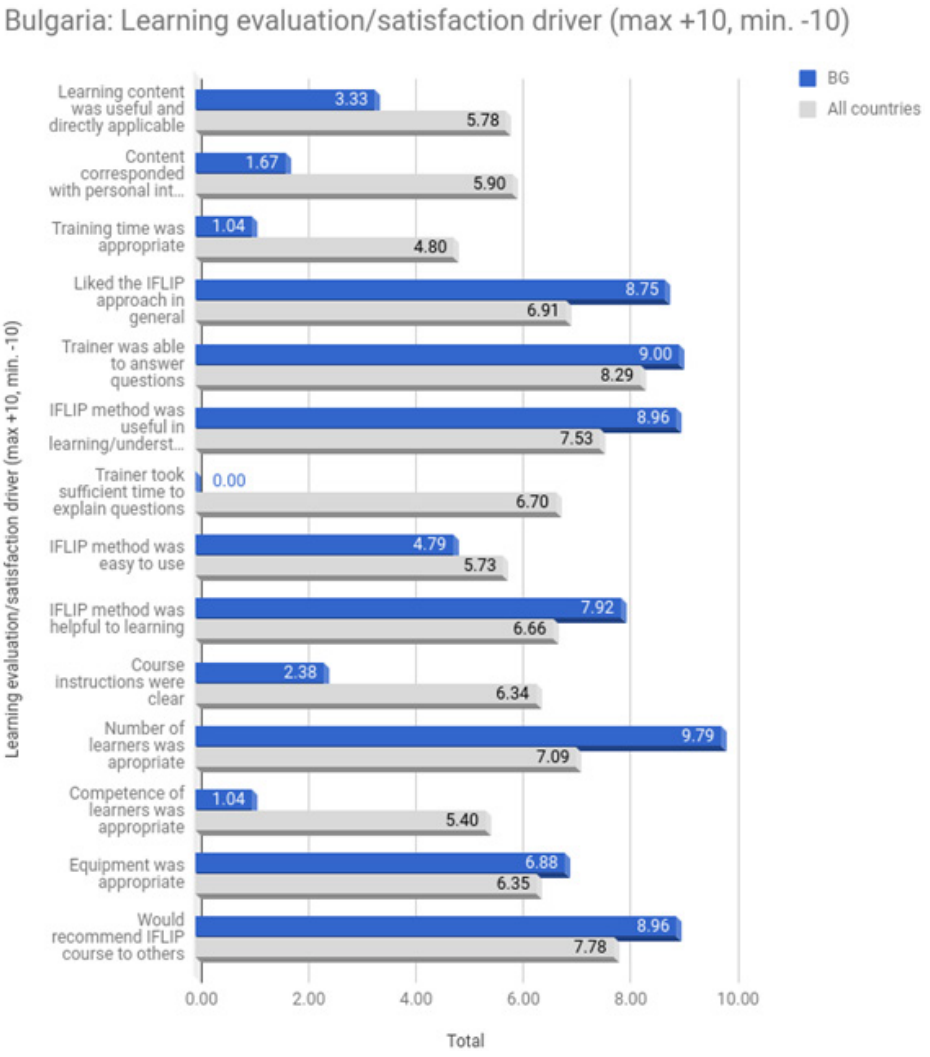


There are no significant departures for Slovenia compared to the all-country aggregated average values. The graph should be considered while keep-

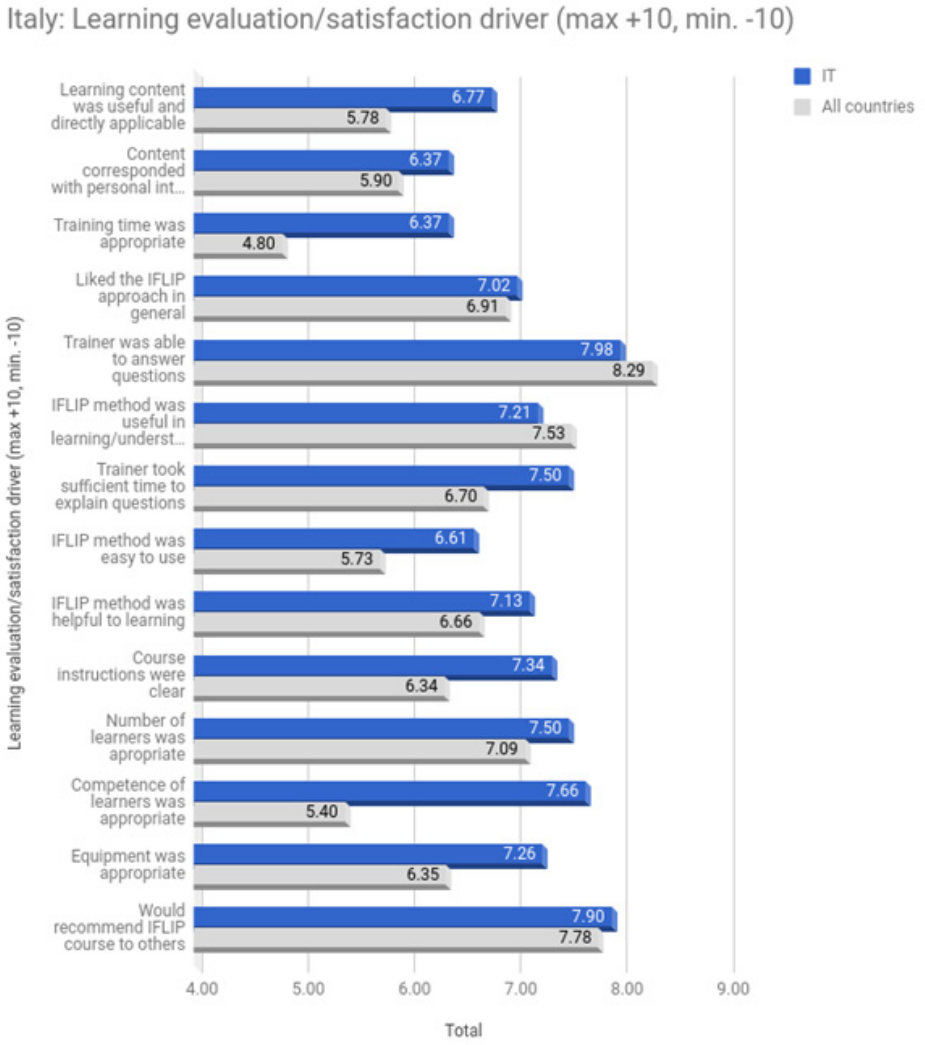
ing in mind that the scale, which is truncated in the graph for the sake of presentation clarity, ranges from -10 to +10 and that all results for Slovenia are above +5, i.e. in the topmost 25% of the scale. The average for Slovenia across all drivers is 7.36 vs. all-country average of 6.52.



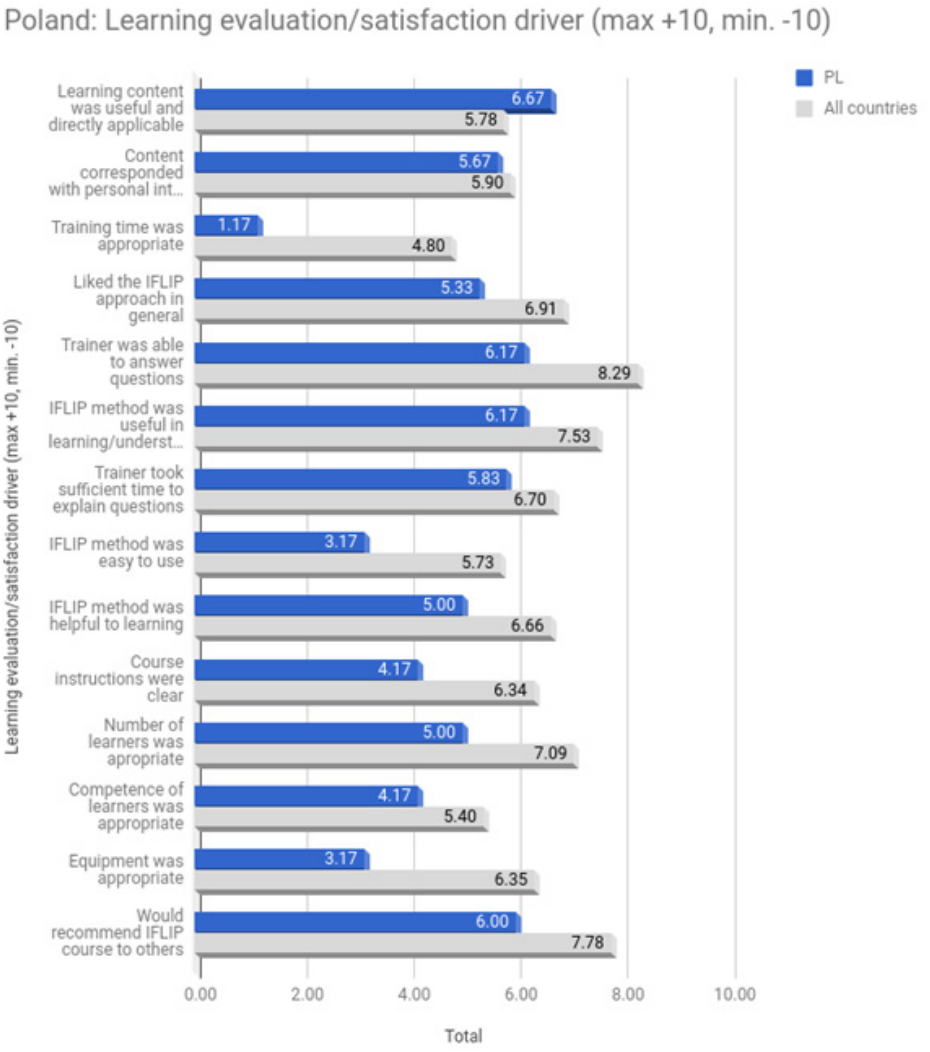
There are no significant departures for Belgium compared to the all-country aggregated average values. The graph should be considered while keeping in mind that the scale, which is truncated in the graph for the sake of presentation clarity, ranges from -10 to +10 and that all results for Belgium are above +5, i.e. in the topmost 25% of the scale, with the sole exception being the first item on the list, a phenomenon already discussed in the previous sections. The average for Belgium across all drivers is 6.84 vs. all-country average of 6.52.



There are 3 significant departures for Bulgaria compared to the all-country aggregated average values, all of which were already discussed in the previous sections. The graph should be considered while keeping in mind that the scale, which is truncated in the graph for the sake of presentation clarity, ranges from -10 to +10 and that all results for Bulgaria are above 0, i.e. in the topmost 50% of the scale. The average for Bulgaria across all drivers is 5.32 vs. all-country average of 6.52.



There are no significant departures for Italy compared to the all-country aggregated average values, apart from items 3 and 12 where Italian values are greater than the average (discussed in previous sections). The graph should be considered while keeping in mind that the scale, which is truncated in the graph for the sake of presentation clarity, ranges from -10 to +10 and that all results for Italy are above +6, i.e. in the topmost 20% of the scale. The average for Italy across all drivers is 7.19 vs. all-country average of 6.52.



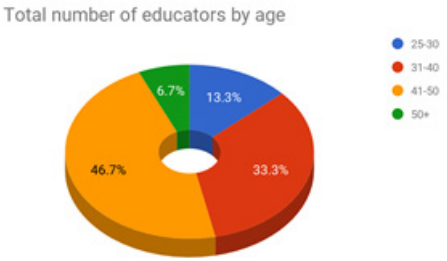
There are no significant departures for Poland compared to the all-country aggregated average values, with the exception of item 3 where Polish value is smaller than the average (discussed in previous sections). The graph should be considered while keeping in mind that the scale, which is truncated in the graph for the sake of presentation clarity, ranges from -10 to +10 and that all results for Italy are above +1, i.e. in the topmost 40% of the scale. The average for Poland across all drivers is 4.83 vs. all-country average of 6.52.

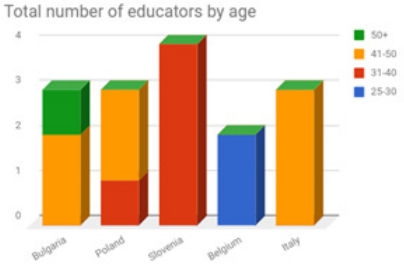
4.4 EDUCATORS' EVALUATION OVERVIEW

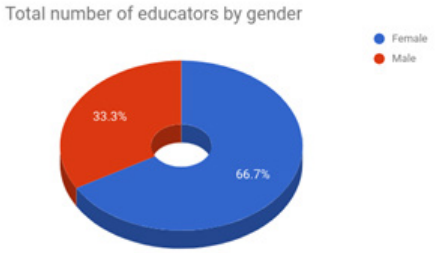
A five-day training was conducted in Gent, Belgium as a preparation step for creating the pilot courses. The FTC methodology was introduced to the participating adult teachers and the opportunities for blended learning for adult learners via LMS platforms were discussed. The teachers who attended the training later created the pilot courses and transferred the method to their colleagues via internal know-how sharing sessions. In many cases, the pilot courses were prepared by teams of educators and technical assistants.

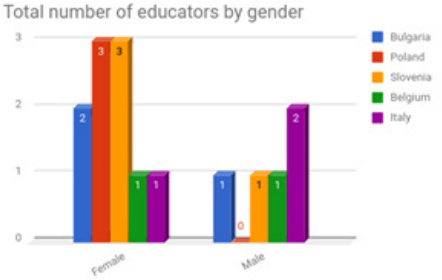
Fifteen educators took part in the development and implementation of the piloting courses. They were also supported by the technical assistants in their organisations.

Educators' questionnaire was developed in order to assess the piloting courses from teacher's point of view. Since there are only 15 educators in the sample, there is little point in statistical analysis of the questionnaires' responses. We rather opted for presenting highlights and teacher feedback.

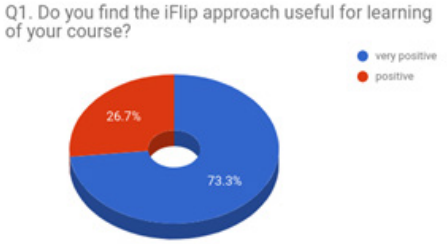




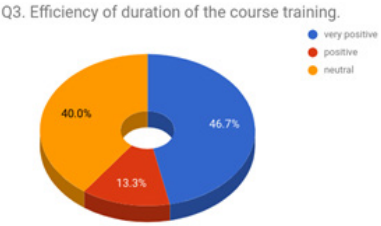


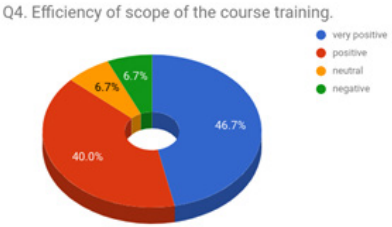


The first two questions show an overwhelmingly positive attitude towards the iFLIP FTC approach. Educators seem to be willing to embrace the method in their practice. Further, their opinion is that the course content is up to the needs and satisfaction of the learners who participated in the pilots.

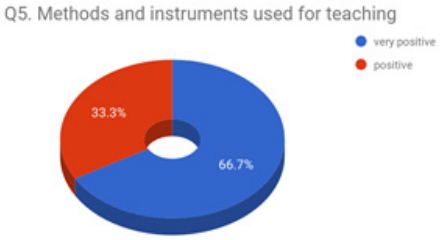


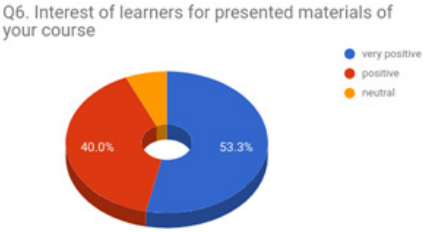
The efficiency of course duration (Q3) raises some concern with a 40% share of neutral responses. We saw similar hesitation by respondents in some countries when asked the same question. Closer evaluation reveals that this could be a result of the novelty of the method and some insecurity among learners and educators alike on the appropriate and convenient course duration. The efficiency of the training as a whole (Q4) attracts 86.7% positive-side responses.



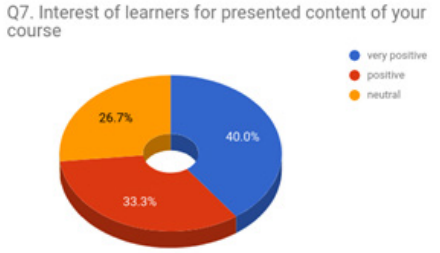


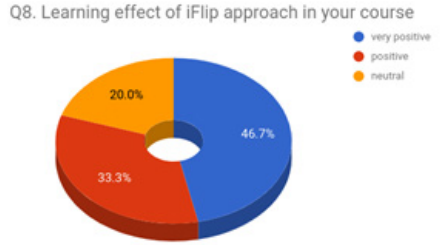
We also find very positive responses concerning both the educators' perception of the methods and instruments they have used (Q5), and of the interest shown by the learners for the materials developed for the course (Q6).





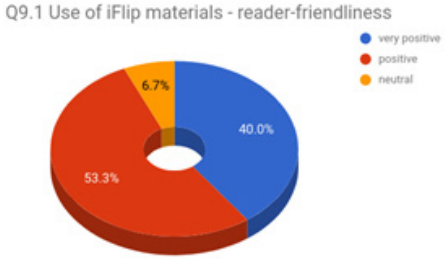
The learners' interest was evaluated positively by the educators, but one quarter of the respondents hesitated and gave a neutral response. We believe this is due to the fact that the method is relatively new and the lack of objective benchmarks (or evaluation of parallel-running groups with included graded learning assessment) prevents the educators from objectively leaning positively or negatively, hence the hesitation. Similarly positive and with a 20% neutral responses is the evaluation of the learning effect of the FTC method.

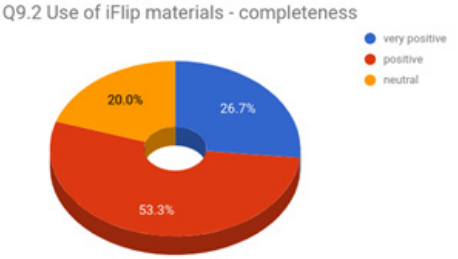


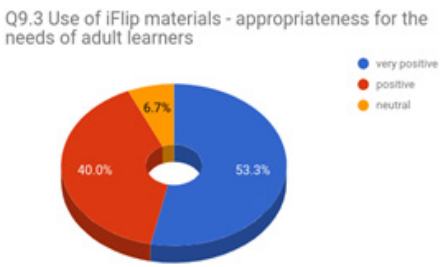


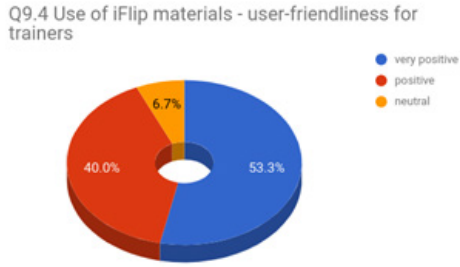
The educators were also asked to give their opinion on the use of training materials developed for the iFLIP pilot courses. The evaluation covered 4 different aspects, all of them strongly positive. Only the "completeness of education" item has a one-fifth share of neutral responses.

These results should be used with caution as they represent the educators' opinions on materials developed by themselves, hence positive bias is very probable.

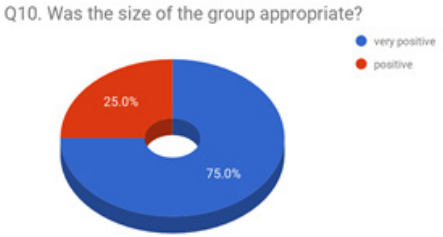


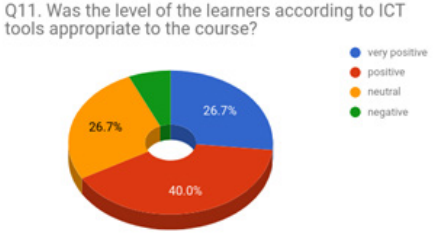




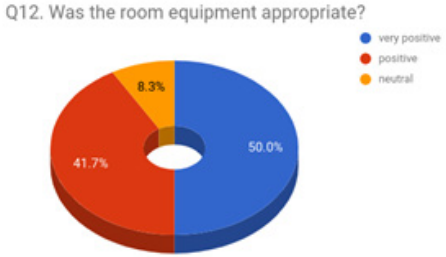


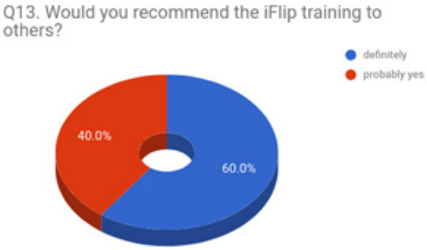
When asked about the size of the group (Q10), the educators seem to approve it. However, since in the pilot courses the number of participants was not controlled, and participation was freely available, there is little pride in the positive results. Training organisations should instead be opting for studies into how learners evaluate FTC courses with different number of learners. Similarly, the results for Q11 merely record the status quo without providing insight into what ICT competence level is actually required for successful learning. We can say that two-thirds of the participants in the pilots had adequate ICT competence level (as judged by their educators), and just over one quarter's competence was considered neutral. Negative responses are 6.5%





Respondents were almost 92% on the positive side of the evaluation of the training room equipment. Interestingly, and very enthusiastically, all surveyed educators would recommend the iFLIP approach to training to others, with 60% being very resolute about it and 40% saying that they probably will.





The educators involved in designing and delivering the pilot courses have made free-text comments on the advantages and disadvantages of the FTC method, which the evaluators have summarised below. We believe they are an important part of the experience-sharing and know-how exchange between them and the educators from other institutions who will be using the method in the future.
Advantages of FTC method:

- Innovative approach - teachers outlined that they clearly consider iFlip as an innovative approach to teaching.

- Different options for interactive tools. During the process of designing the courses, the teachers realised that there is a large number of po-

tentially useful resources which could help them build activating content elements for their courses.

- The courses/lessons are online and thus teachers are able to add resources and activities at any time. The quality of the resources and activities can be improved in the time.

- The material can easily be developed with free software and basic hardware, but the more you are recognizing and appreciating the strengths, the more you experience the need of for example higher quality video and sound capture hardware and software.

- iFlip method provides an ability to reduce time for face-to-face learning and enables differentiation among learners.

- Individual approach supports active participation of weaker participants.

- Time spent in class is used more efficiently and goal-oriented.

- Content relevant during work can be shared outside classroom.

Disadvantages of FTC method:

- ICT skills are needed from both educators and adult learners. This was outlined as a disadvantage by the teachers as they realise that there should be some degree of consistency between teacher and learner ICT skills.

- Open course. This is another relative disadvantage since there is no formal engagement requirement for the participants (in the pilots, things are different in the regular/mainstream courses which are flipped).

- The development of a course according to FTC methodology is time consuming and requires some technical skills (fluency with programs for creating videos, quizzes, assignments, etc.)

- Some learners do not dedicate enough time to view materials in advance and come unprepared.

- Not all learners are familiar or in possession with ICT devices.

In conclusion, we have to note the overwhelmingly positive assessment by teachers and adult learners of the FTC method. The diverse content/activities and use of different interactive resources has been highly appreciated by adult learners. Adult learners share that they like the fact that in order to prepare for the course they need to watch different videos, do tests and perform tasks. During the lectures they worked in groups, finding solutions for difficult exercises and cooperating for research tasks. Adult learners report as positive:

- Watching videos can be repeated over and over;

- Quiz - good feedback on own progress;

- Participants determine their own speed and learning hours;

- The FTC method is suitable for larger groups, for varied groups (background, interests, age).

At the same time teachers indicate that pilot work is more successful when the designing of the courses is done in collaboration with an IT assistant. This helps teachers focus on the didactics of the course and not on the technical implementation, though they also confess that the IT-related work was a great learning experience for them as well. There is a notable trend that adult learners in some partner organisations started looking for the same types of interactive resources in other courses. The FTC method is well accepted and highly valued.

We expect that all partnering training organizations involved in the project will be continuing to design and deliver existing and future courses under the FTC method. It is expected that partners will continue to work on the FTC method by referring it to training modules that are mandatory and

have a grade requirement. This will make it possible in the future to assess the effectiveness of the FTC method outside of the pilot courses by comparing the results (grades) from past courses to the new ones.
There is no assessment of preferences for different courses. An evaluation and further studies would be needed to determine whether the FTC method can be used for every subject, or just a few. We recommend that each organisation use a unified pool of resources and interactive tools, so that learners can feel comfortable with new courses and learn in a familiar context.

Educators/teachers should be trained and supported in using different tools for course creation. Contemporary ICT skills are needed from both learners and educators.

5 CONCLUSIONS

The present guide reports current status in partner countries, some good practices in FTC along with the experience of the partners involved in the iFlip project, which was aimed at assessing the effectiveness of the FTC methodology for adult learners with their specific needs.

The main aim of this document was to illustrate how the FTC methodology has to be acquired from educators, while assessing the specificity of FTC courses design for adult learners.

The first conclusion that can be drawn is that the background differences in educators coming from several countries with heterogeneous education systems do not play any role in acquiring the competences related to FTC course design because the only and best way to learn FTC is FTC. Previous experiences in using ICT may help the educator, while she/he is learning FTC design, but a flexible VLE coupled with a multimedia authoring tool are sufficient to start, and our experience proves that such tools are very easy to learn.

Our trainees formed a classic flipped classroom, they studied FTC theory and basics through a series of movies, and then they were substantially asked to both design a trial course and reflect upon their creation trying to identify possible pitfalls and strengths. Such an approach guarantees rapid learning, and it is highly reproducible thus ensuring rapid diffusion to more educators.

The second conclusion is related to the learners. The project pilots highlighted two kinds of adult learners: VET students, and university ones. People attending VET courses are classical adult learners who need to find the correct time and speed in studying. On the other hand, university students are more focused on the course objectives, and have strict time constraints. Both these kinds of people took advantage from FTC in terms of using multimedia for having a quick insight into the matter of study but university students appreciated particularly the use of workgroups for making projects, which in turn enabled them to deepen the topics covered in their courses.

As a consequence, different FTC models are needed for different adult classes: FTC models that resort to a detailed coverage of the course theory can be preferred for university students, while open FTC models are suited for other adult learners.

The partners in iFLIP project have looked beyond the pilot courses and the datasets produced by learners' and educators' surveys. In particular, we were interested in similar studies to which we can relate, and to their results and conclusions. The list of papers which we reviewed is listed below. What we have found, though each paper is built around a specific case study with very different characteristics, is that other researchers are reaching very similar conclusions on the use of the FTC method in adult education. Practically all of them confirm to a large extent our findings, and most recommend that further, more structured and systematic research be carried to fully understand all performance aspects of FTC learning, including temporal. Moreover, studies acknowledge that there is no single model to flipping a course, which poses further challenge to future researchers.

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This document should serve as a guide, starting point or tool for implementing FTC method in education in different adult education organizations. It shows transferability of the method, usability in various learning environments, and flexibility in adaptation to the specific learners' needs. It points out to benefits but also presents challenges, support beginners and suggests first steps. It works best together with other projects outputs found online, presenting a comprehensive toolkit on FTC in adult learning.

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