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Flipping the Classroom in Adult Education

Conceptual Framework

January 2016

Erasmus+

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1. About the project

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 and some lack ICT skills, some work in shifts and are unable to participate in courses and some have had a negative experience with prior education (drop-outs) and need special attention. Or wish to learn something new and acquire new skills in an innovative way. For those reasons, traditional teaching methods often do not meet their needs and requirements. The option is pure e-learning or distant learning, but this presents difficulties for those who lack ICT skills and need additional support. 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 by modern technology.

The Flipped Classroom (FTC) approach seems 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 seems 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 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 the needs of adult learners in participating countries will be identified and the FTC technique will be introduced to educators in adult education during a training. Educators will transfer the FTC technique to adult education, design classes and develop materials that will meet the adult learners' needs; pilots will be done in partner countries. Once the pilots have been executed these pilots will be assessed and feedback will be provided. Additional modifications will be done according to the feedback given from adult learners. Trained educators will participate in events (national conferences) for other educators, providers and policy makers presenting the outcomes. A learning guide on FTC in adult education will be developed aiming at transferring the method and the design of the materials to further fields (subjects).

The following document is the first Intellectual output in the project. Its aim is to introduce the flipped classroom, to present the model and define success criteria for implementation. It precedes user analysis and desk research, which will be a part of the next intellectual output. It serves as support for the research on good practices and model used in practice. Its main point will be included in the IO7 – Learning guide on FTC adult education.

2. Flipped classroom – what is it?

From traditional to flipped teaching

In the traditional model of classroom instruction, the teacher is typically the central focus of a lesson and the primary disseminator of information during the class period. This teacher-centred approach implies that the teacher responds to questions while students defer directly to the teacher for guidance and feedback. In a classroom with a radically traditional style of instruction, individual lessons may be didactic and content oriented. Student engagement in the traditional model may be limited to activities in which students work independently or in small groups on an application task designed by the teacher. Class discussions are typically teacher-centred, the teacher usually controls the flow of the conversation. Typically, this pattern of teaching also involves giving students 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 teacher 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 student. 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 students 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.
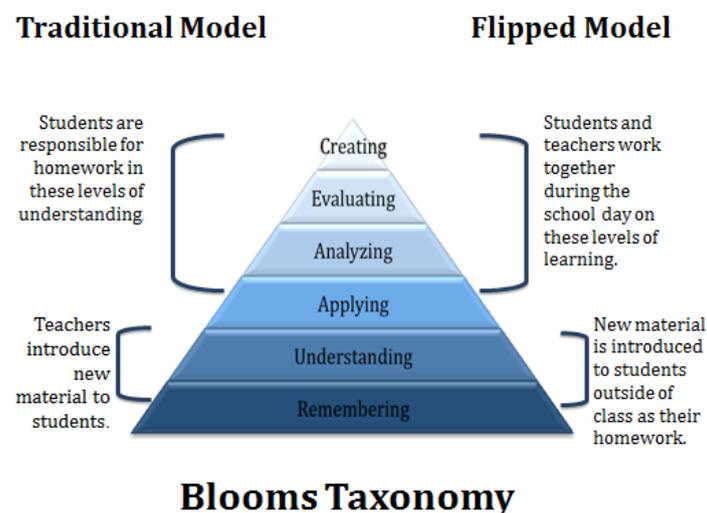

Figure 1: Ways that Bloom's Taxonomy is applied to traditional vs. flipped classroom activities.
Retrieved from http://nextgenerationextension.org/2013/10/01/blooms-and-the-flipped-classroom/

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 students' own time before class. This means students 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 students in the centre of the learning experience.

Flipped classroom can also be described as moving from an instructor-centred learning environment to a student-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. Bergmann and Sams (2012) explain, "Ultimately, flipping a classroom involves shifting the energy away from the instructor and toward the students and then leveraging educational tools to enhance the learning environment." Keep in mind that educational tools include but are not limited to technology. While videos and other technological tools can be effective in a flipped classroom, they are not required.

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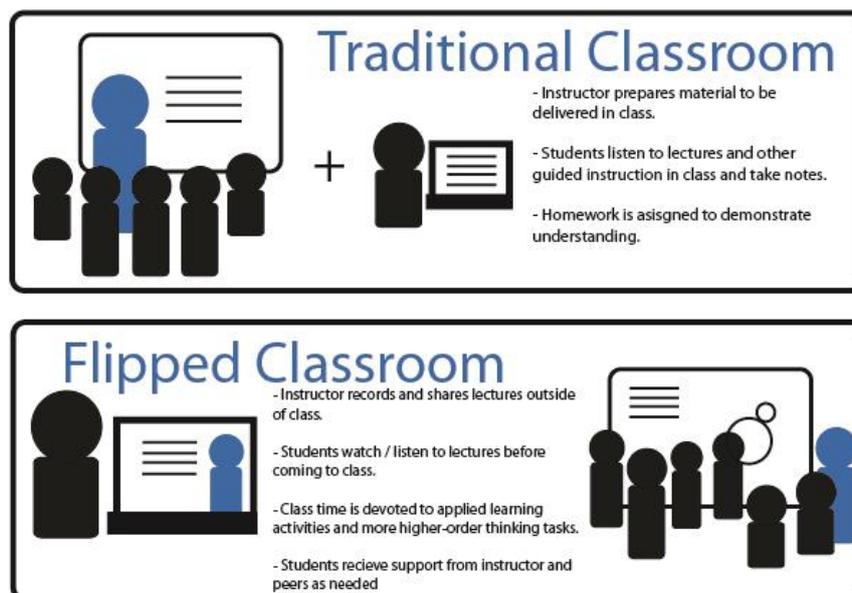
3. Theoretical framework

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 has 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 on-line 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."
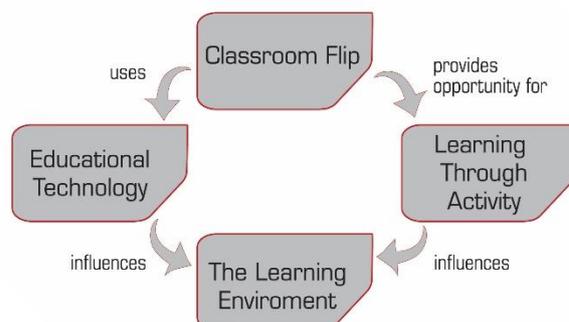
4. Four pillars of Flipped classroom

Just as no two traditional classrooms are identical, such is the case with flipped classrooms. Because Flipped Learning focuses on meeting individual student 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
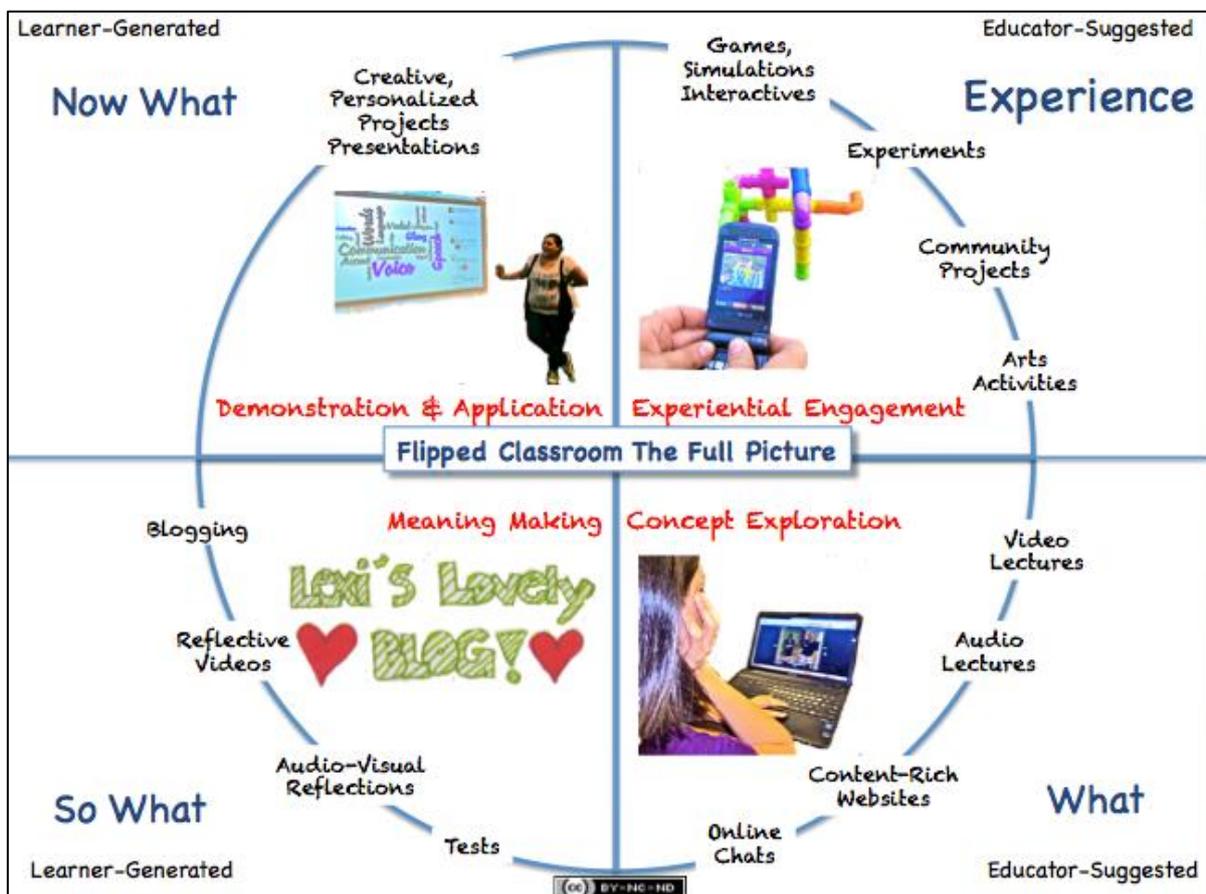
1. **Flexible environments**: Teachers must expect that class time will be "somewhat chaotic and noisy" and that timelines and expectations for learning assessments will have to be flexible as well. Flipped classrooms allow for a variety of learning modes; educators often physically rearrange their learning space to accommodate the lesson or unit, which might involve group work, independent study, research, performance, and evaluation. They create Flexible Environments in which students choose when and where they learn.

2. **Learning culture**: The classroom becomes student-centred. According to the guide: "Students 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." Students can theoretically pace their learning by reviewing content outside the group learning space, and teachers can maximize the use of face-to-face classroom interactions to check for and ensure student understanding and synthesis of the material.

3. **Intentional content**: Teachers 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 teachers. 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 teachers and students. During class time, educators continually observe their students, provide them with feedback relevant in the moment, and continuously assess their work.

5. Phases of Flipped classroom

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: http://reviewing.co.uk/research/learning.cycles.htm and Bernice McCarthy's 4MAT Cycle of Instruction– http://www.aboutlearning.com/what-is-4mat/what-is-4mat.

a) 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, students 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 students to complete during a real-time synchronous webinar session via Adobe Connect, Elluminate or through a 3D Learning experience.

b) 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, students 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.

c) Meaning Making: The So What
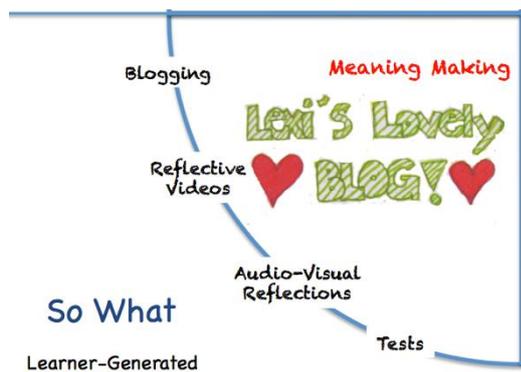
Learners reflect on their understanding of what was discovered during the previous phases. It is a phase of deep reflection on what was experienced during the first phase and what was learned via the experts during the second phase.

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 students 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.

d) Demonstration and Application: The Now What
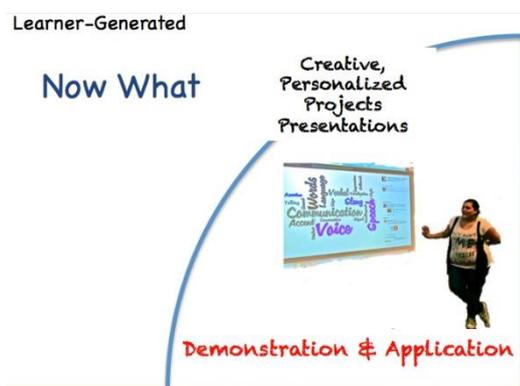
During this phase, learners get to demonstrate what they learned and apply the material in a way that makes sense to them. This goes beyond reflection and personal understanding in that learners have to create something that is individualized and extends beyond the lesson with applicability to the learners' 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.

7. Different Flipped Classroom Models

I flip model is not 'one size fits all' model. Every classroom is different, with different levels of access to technology, different levels of motivation on the part of the students, and different technological know-how on the part of the instructors. Additionally, teachers must re-learn how to act as the "guide on the side" rather than the "sage on the stage"—and that takes time. Flipped classroom requires preparation and flexibility. However, when the shift does occur, many experts believe the benefits are well worth the effort.

Here are some examples of Flipped classroom models:

The Standard Inverted Classroom: Students are assigned the "homework" of watching video lectures and reading any materials relevant to the next day's class. During class time, students practice what they have learned through traditional schoolwork, with their teachers freed up for additional one-on-one time.

The Discussion-Oriented Flipped Classroom: Teachers assign lecture videos, as well as any other video or reading related to the day's subject — think 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 — think history, art, or English.

The Demonstration-Focused Flipped Classroom: Especially for those subjects that require students 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 teacher uses screen recording software to demonstrate the activity in a way that allows students to follow along at their own pace.

The Faux-Flipped Classroom: One great idea EducationDrive uncovered is perfect for younger students for whom actual homework might not yet be appropriate. This flipped classroom model instead has those students watch lecture video in class — giving them the opportunity to review materials at their own pace, with the teacher able to move from student to student to offer whatever individual support each young learner needs.

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

The Virtual Flipped Classroom: For older students 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 student viewing, assign and collect work via online learning management systems, and simply require students to attend office hours or other regularly scheduled time for brief one-on-one instruction based on that individual student's needs.

Flipping The Teacher: All the video created for a flipped classroom doesn't have to begin and end with the teacher. Students too can make use of video to better demonstrate proficiency. Assign students 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 teacher".

8. Limitations and criticisms - what are the downsides?

Critics argue the flipped classroom model has some drawbacks for both students and teachers.

- For students 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 students. 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 students may struggle due to their developing personal responsibility. In a self-directed, home learning environment student 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.

- Teachers may find challenges with this model as well. Increased preparation time is initially likely needed, as creating high quality videos requires teachers to contribute significant time and effort outside of regular teaching responsibilities. Additional funding may also be required to procure training for teachers 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 students 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.

9. Summary

The value of a flipped class is in the repurposing of class time into a workshop where students 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 students 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 students, 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 students while giving them greater impetus to experiment. Activities can be student-led, and communication among students 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. This project aims to introduce the model in adult education, with required adaptations and supporting training for educators. The model will be tested in four countries in different classes. The results will be presented in the Learning guide on FTC in Adult education, which will be developed within the iFLIP project.

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