GUIDELINES ON FLIPPED CLASSROOM METHODOLOGY AND HOW TO CREATE AND USE IT AT CLASS FOR SCIENCE AND TECHNOLOGICAL DISCIPLINES AND TRANSDISCIPLINARY AREAS

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The project **E-Classes** responds to the urgency for Europe: to develop professional and pedagogic competences among teachers and trainers enhancing Information and Communication Technologies (ICT) uptake in teaching and learning, through the support of learning and access to open educational resources (OER) in the education and training fields with the aims to combining higher levels of excellence and attractiveness with increased opportunities for all.

**E-Classes** wants to help the VET teachers in revising and strengthening the professional profile and improving the attainment of young people, particularly those at risk of early school leaving and with low basic skills, developing a methodology especially focusing on the use of ICT.

In line with the Communication from the Commission (SWD (2012) 371 final) "Rethinking Education: Investing in skills for better socio-economic outcomes", **E-Classes** project aims to develop tools for professionalization and professional development of teachers and trainers using ICT tools, very effective for the management of creative classes. **E-Classes** develops tools to make teachers and trainers able to evaluate, transfer and validate **E-Classes** training at local, regional, national and European level thanks to a multi-level partnership.

The project focuses also in the involvement of pupils in the learning process and creation of the lessons in class. Pupils expect from the learning process to be more personalised, to count on collaboration among all educational factors. Pupils look for better links between formal and informal learning, theory and practice or school and work; this collaboration will enable pupils to integrate easier and adapt quicker to new work circumstances after their graduation and be ready for the world of work. In this respect **E-Classes** project focus on the collaboration of schools (teachers and pupils) and companies for development of educational materials for a common approach in teaching/learning/orientation. Through this common involvement, pupils learn by-doing and leads to the development of various competences: workplace skills, problem-solving, teamwork, foreign languages, IT and multimedia, communication and cultural skills, etc.

This guideline is part of the European Project -Flip your classes through multimedia enriched apprenticeship simulations and develop e-skills for VET teachers and students to enhance youth employability- **E-Classes** (2017-1-RO01-KA202-037344) and intends to present a basic theoretical background and practices on educational issues related to flipped classroom. This guideline is mainly useful to those intending to develop a creative classroom or educational games in a flipped classroom.
Contents

Introduction .................................................................................................................................................. 5
Context and necessity of the course ........................................................................................................... 5
Learning objectives ....................................................................................................................................... 7
Course Structure ......................................................................................................................................... 8

MODULE 1. The Flipped Methodology ........................................................................................................ 10
Unit 1.1. Why Flip the classroom? ............................................................................................................. 10
    Evaluation Module 1.1 .............................................................................................................................. 15
Unit 1.2. Basic elements and steps to flip the classroom ............................................................................. 16
    Evaluation Module 1.2 .............................................................................................................................. 20
Unit 1.3. Creative classroom ....................................................................................................................... 23
    Evaluation Module 1.3 .............................................................................................................................. 32
Unit 1.4. The Innovative VET Teachers ...................................................................................................... 35
    Evaluation Module 1.4 .............................................................................................................................. 44
Module 2 Design and development of learning contents for flipped lessons ............................................ 46
Unit 2.1. Planning a flipped lesson for VET ............................................................................................... 46
    Evaluation Module 2.1 .............................................................................................................................. 53
Unit 2.2. Architecture learning content (creating a learning object through scorm) ................................. 55
    Evaluation Module 2.2 .............................................................................................................................. 59
Unit 2.3 Design of a flipped video ............................................................................................................... 61
    Evaluation Module 2.3 .............................................................................................................................. 68
Unit 2.4: Production and post-production of a flipped video .................................................................... 70
    Evaluation Module 2.4 .............................................................................................................................. 77

MODULE 3. EDUCATIONAL GAMES .......................................................................................................... 79
Unit 3.1. Classroom time ............................................................................................................................ 79
Unit 3.2 Types of educational games ......................................................................................................... 83
Unit 3.3 Design of an educational game .................................................................................................... 86
    Evaluation Module 3.3 .............................................................................................................................. 90
Unit 3.4. Management of an educational game .......................................................................................... 92
    Evaluation Module 3.4 .............................................................................................................................. 95
Module 4. Assessment of knowledge ......................................................................................................... 97
Unit 4.1. The Debriefing and its phases ..................................................................................................... 97
    Evaluation Module 4.1 .............................................................................................................................. 99
E-Classes - Flip your classes through multimedia enriched apprenticeship simulations and develop e-skills for VET teachers and students to enhance youth employability. 2017-1-RO01-KA202-037344

www.e-classes.eu

Unit 4.2. Organising debriefing ................................................................. 101
Evaluation Module 4.2. ........................................................................ 105

4.3. Managing debriefing ..................................................................... 107
Evaluation Module 4.3. ........................................................................ 109

Unit 4.4. Other means of evaluation of knowledge............................... 111
Evaluation Module 4.4. ........................................................................ 117

Module 5. How to approach transversal topics in your class ............... 119
Unit 5.1 Transversal topics with impact on a student professional development .......................................................... 119
Evaluation Module 5.1. ........................................................................ 122

Unit 5.2 Motivation to study ................................................................. 123
Evaluation Modules 5.2....................................................................... 128

Unit 5.3 VET orientation ..................................................................... 130
Evaluation Module 5.3. ........................................................................ 134

Unit 5.4 Foreign languages ................................................................. 136
Evaluation Module 5.4. ........................................................................ 140

Unit 5.5. Inclusive education ............................................................... 142
Evaluation Module 5.5. ........................................................................ 147

Unit 5.6. Prevention of school dropout ............................................... 149
Evaluation Module 5.6 ......................................................................... 153
INTRODUCTION

Context and necessity of the course

The current proposal is not a new idea, but the target group addressed, that of EU VET Ts and Sts, and the goal of fighting dropout and increasing inclusion and equal opportunities for school success, are a new combination of needs and solutions. In this project the use of the term “flipped” is associated with VET Sts engaging with materials online followed by in-class activities that involve peer learning or small-group work that engages them in discussions on problem solving. Other activities will also be part of the VET FC: debates, clicker questions, Q and A, demonstrations, simulations, peer tutoring and feedback, and role playing.

CECE, Spain, is one of the initiators of this project idea, following the success of a previous project experimenting with FC under their coordination: 2014-1-ES01-KA201-004401 Gain Time (http://gaintime.eu/), with a final score of 9 points. It was targeted to primary and secondary education. Based on this experience, CECE would like to transfer this successful experience to VET centres and by doing so to increase VET Sts’ study motivation and decrease the number of VET Sts’ drop out in Spain and in the participant countries. The current proposal has a completely new partnership.

The objective of this phase is to develop the contents for the structure proposed for the Guideline to FC for VET. These thematic areas are articulated around the structure described in IO1 and they will cover the following content distributed logically in that structure:

1. Creative classes: this thematic area will deepen how to stimulate (techniques/strategies/methods) creativity in the VET class, integrating the use of ICTs and OERs in traditional teaching of sciences/technology/transversal areas.

2. Teacher-innovators: the second thematic area will deepen the function of the FC in VET in preventing and tackling early school leaving and enhancing the empowerment of youths. It will focus also on the Ts’ specific role in managing this approach.

3. Flipped methodology: the third thematic area will be focused on the Flipped methodology, analysing its points of strength, weakness, threats and opportunities related to different contexts

4. Design of a didactic FC VET unit. The Ts will get info about operational steps for implementing the VET FC in traditional teaching of sciences/technology/transversal and personalising the lesson according to time/technological resources/Sts/Ts.

5. Development of the didactic contents for the VET FC: Ts will be guided to create a learning object (the smallest unit of competence that contains an objective, a learning activity and an evaluation) through SCORM (Shareable Content Object Reference Model).

6. Videos in the VET FC: how to realise a didactic VET video (pre-production, production and post-production) and how to upload it in an e-learning platform or in open source channels.
7. Educational games and debriefing: brief info about the grammar of VET educational games; how to do a debriefing of the games, with focus on the management/group moderation techniques.

8. Digital channels: the potentialities that digital channels have for Ts’ active participation.

Guideline will consist of 8 video tutorials with objectives/aims/knowledge/skills to be acquired. These tutorials will have a unitary script and approach.

The Guideline and the tutorials make up a whole and they become an online Handbook.

Another added value of the new Flipped classed created within E-Classes is the transversal areas targeted by the project. These are chosen to enhance the end goal of the project, namely that of increasing student motivation for learning, their performance in STEM, and the decrease of the dropout rate. The transversal areas targeted by the project go beyond the 8 traditionally identified transversal competences and propose a reconfiguration of knowledge in the disciplines in the curriculum, under the auspices of broader educational goals that deal with motivational approaches, job and study counselling, inclusive education, foreign languages in VET, school ethical concerns. These themes include not only competences independent of subjects or based on cross-curricular objectives, relating to better management of one’s own learning, better social and interpersonal relations and improved communication (which all reflect a general shift of emphasis from teaching to learning) but they also aim at offering creative solutions to social and educational problems. They need a reliance on stakeholder involvement, and engaged, socially responsible schools. In simultaneously studying multiple levels of, and angles on, reality, transversal content and work provides an intriguing potential to invigorate the approach to VET traditional challenges both in and outside the school.

Indicators:

- 1 Guide on flipped classes for VET - 8 thematic areas + 5 transdisciplinary disciplines
- 8 video tutorials in presentation of the guideline modules E-Classes project through its purposes and activities address to the following target groups:
  - Direct target group:
    - VET teachers
    - VET students
    - VET schools
    - Companies

Indirect target group:

- Schools (in general)
- Teachers and students (in general)
- Parents
- Educational and training centers/ NGOs in the field of education
- Teachers associations
- Students/ Youth associations
- Educational public authorities (Teacher Training Centers)
- Public at large

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Learning objectives

The E-Classes on Flipped methodology course enables teachers to:

- learn the right way to flip their classroom and make school relevant for all students
- explore the pedagogical approach of flipped learning
- use flipped learning for science and technological disciplines
- gain an understanding of the theories that influenced its development as well as tools for designing and implementing both a flipped lesson and unit plan
- discover ways to combine flipped learning with the use of ICT and OER for teaching

The E-Classes on Flipped methodology course enables teachers to develop the following skills:

- design of multimedia educational modules
- selection, finding and adaptation of multimedia learning materials
- assessment of pupils' learning through multimedia educational resources
- choose pedagogical approaches due to the context and the educational objectives of the creative classroom
- support, advise and guide the interaction within the classroom
- prepare lessons through ICT tools
Course Structure

The course is structured in the following modules.

<table>
<thead>
<tr>
<th>MODULE</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to the course</td>
<td>Context and necessity of the course</td>
</tr>
<tr>
<td>Learning Objectives</td>
<td></td>
</tr>
<tr>
<td>Course Structure</td>
<td></td>
</tr>
<tr>
<td>1.1 Why flip the classroom?</td>
<td></td>
</tr>
<tr>
<td>Module 1. The flipped methodology</td>
<td>1.2 Basic elements and steps to flip the classroom</td>
</tr>
<tr>
<td>1.3 The creative classroom</td>
<td></td>
</tr>
<tr>
<td>1.4 The innovative VET teachers</td>
<td></td>
</tr>
<tr>
<td>2.1 Planning a flipped lesson for science and technological disciplines</td>
<td></td>
</tr>
<tr>
<td>Module 2. Design and development of learning contents for flipped lessons</td>
<td>2.2 Architecture learning content</td>
</tr>
<tr>
<td>2.3. Design of a flipped video</td>
<td></td>
</tr>
<tr>
<td>2.4. Production and post-production of a video flipped</td>
<td></td>
</tr>
<tr>
<td>Module 3. Educational Game</td>
<td>3.1. Classroom time</td>
</tr>
<tr>
<td>3.2. Types of educational games</td>
<td></td>
</tr>
<tr>
<td>3.3. Design of an educational game</td>
<td></td>
</tr>
<tr>
<td>3.4. Management of an educational game</td>
<td></td>
</tr>
<tr>
<td>4.1. The Debriefing and its phases</td>
<td></td>
</tr>
<tr>
<td>4.2. Organize a debriefing</td>
<td></td>
</tr>
<tr>
<td>4.3. Managing a debriefing</td>
<td></td>
</tr>
<tr>
<td>4.4. Other means of evaluation of knowledge</td>
<td></td>
</tr>
<tr>
<td>Module 4. Assessment of knowledge</td>
<td>5.1 Transversal topics with impact on a student professional development</td>
</tr>
<tr>
<td>Module 5. How to approach transversal topics in your class</td>
<td>5.2 Motivation to study</td>
</tr>
<tr>
<td>5.3 VET orientation</td>
<td></td>
</tr>
<tr>
<td>5.4 Foreing languages</td>
<td></td>
</tr>
<tr>
<td>5.5 Inclusive education</td>
<td></td>
</tr>
<tr>
<td>5.6 Prevention of school drop out</td>
<td></td>
</tr>
</tbody>
</table>
E-Classes - Flip your classes through multimedia enriched apprenticeship simulations and develop e-skills for VET teachers and students to enhance youth employability. 2017-1-RO01-KA202-037344

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Links/bibliography/references


Teaching resources http://eskills4jobs.ec.europa.eu/teach

MODULE 1. The Flipped Methodology

Unit 1.1. Why Flip the classroom?

The flipped classroom is a new pedagogical model which was created in 2004 by Jonathan Bergmann and Aaron Sams, two Chemistry teachers who worked together at Woodland Park High School in Woodland Park, Colorado.

It was thought as a means of helping those students who could not attend to classes at school not to miss the learning that was taught at school. The initial idea was to record the classes so students could watch the lessons at their own pace. This concept has grown and the aim of this report is to analyse the way it has happened and how it has changed.

Content

What it is:

The flipped classroom is a way of teaching completely different from the traditional in-class lecture as all the elements of the traditional class are reversed.

If we want to make the definition of the flipped class simple may be it is good to have a look at the definition of Lage et al. “Inverting the classroom means that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa” (p.32).

(1)

When reading this definition, we may think that a flipped classroom is simply to change the activities in class for doing them at home and this is not the aim.

A flipped classroom could better be defined as that methodology which has two parts, on the one hand learning activities in class and doing a sort of different activities at home or outside the classroom.

But there is still not a single model for the flipped classroom.

Content delivery is moved outside of the classroom, for example, through videos, or pre-class readings.

But still there are no defined and clear formulas

For example, a model of a flipped classroom can be that a teacher gives the students some readings in a training session before to read them at home and later to discuss then in class, so he/ she saves time in the following training session because the students have already an idea of what is going to be taught in the next session.

But for most the term is mostly understood as a way of offering the students pre-recorded lectures made by teachers before a lesson is taught followed by in-class exercises. That is teachers prepare their lessons first by creating video lectures with explanations and exercises, projects, discussions. These recordings are given or sent to the students before the in-class formal lecture takes place, so they can watch it outside the class, or at home, at their own pace and as often as needed till they get a clear idea of the subject.

Most of the recordings offer different lectures of around five to seven minutes each because if they are longer the student may lose attention. While watching students have also access to online quizzes and activities that check the progress in their learning process as well as their feedback.

All this will help the teacher once in class to make clear all the points that were not understood while watching the recorded activities outside the class.

Later on when the students meet in class with their peers and teachers and lessons are taught, they will have a time to clarify those concepts which were not clearly understood and will have enough time in class to do more exercises, projects or to take part in open discussions.

As we can see, the teacher is no longer the one that leads alone the class he / she becomes a mentor, an advisor a coach and the students become active learners testing their skills learnt when watching the video, applying their knowledge and interacting and taking part in active discussions with other students.

Which are the reasons to flip?

The reasons are simple, first to get the educational profits of collaborative learning and active learning.

Research in pedagogical methodologies has shown that educational experiences that involve collaborative learning are active, involve social skills, engaged the student and help to get better academic and learning and personal outcomes.

When doing these students:

Develop better skills in oral communication, self-management, self-esteem and sense of responsibility as well as their leadership skills.

Moreover, understanding of different perspectives, opinions increase as students become more open minded and consequently are better prepared for daily social and professional situations.

Second it is important to mention that it is a fact that every day more and more we have a better and easier access to technology and the advantages that it brings so to deliver educational content has become easier and more dynamic. Students can have access to online lecture captures, videos, podcasts and any online information. The lecture inside the class has become less essential to deliver content. And moreover, students love new technologies so it is easier to get to them if we use them to teach them too.

A SWOT analysis of the flipped methodology will help us to identify and analyse the internal and external factors that can have an impact on the viability of implementing a flipped class.
Strengths:

- A flipped classroom methodology allows students to learn when and where and as often they want and at their own pace.
- A flipped classroom allows students to have time to reflect and think about the topic that is being taught and to think about questions to ask their peers or the teacher once in class, that is how social and team skills are developed.
- Having a video recording of the lessons allows the students to review them as often they need when they have to prepare an exam.
- Absence of the student or the teacher is not a problem anymore as students have the information recorded so the risk of dropping out is reduced. Moreover, in case a teacher cannot attend school students there are not worries about the substitute teacher as the unit material has been recorded and has only to answer questions about doubts or review the unit by doing exercises.
- Teachers that teach the same course can prepare common materials and to be shared with all the students so contents can be better as students can have access to different teachers ‘contents and teachers’ workload can be reduced.

Weaknesses:

- It can create digital / economic / social division. Flipped methodology requires most of the times, access to a computer and to internet. Those students who belong to lower income families may find hard to have access to this resources,
- Trust in the student and maturity of the students is a key factor in this methodology. This methodology depends on student’s participation if they do not watch the recorded materials at home previous to the in class explanations the results of the methodology will not be achieved completely.
- It adds a lot of workload and in some cases to stress to those teachers who have not the required IT skills them or to those who feel insecure when using them. Designing the content, recording and editing it and the exercises require additional time and effort from the teachers. Some teachers, that feel secure and like the ‘traditional model of teaching’ may be afraid of losing control in the class as students have to look for content too, compare it and be more critical about what is taught in class
- More time spent in front of a computer is needed. Some people can think that if teachers flip their classes students will spend more time in front of a computer watching the lessons and that so that the student’s learning process may be affected.
- The assessing and evaluation process may be not complete as computers can evaluate a quiz or a multiple-choice test but not a complete essay.
Opportunities:

- Flipped methodologies allow teachers to design, create and to implement their own methods and approaches.
- The methodology allows the teacher and the student to enrich their knowledge. A traditional teacher is the main centre of information. By changing the method to a flipped methodology, teacher becomes the mentor and the student changes the role as becomes the actor who can also explore the topics presented and later share the content found in class so topics can be analysed with greater depth and learning opportunities are increased.
- Teaching becomes a motivating challenge. The teacher has to look for appealing ways of attracting the students’ attention when preparing content and have to be prepared to give students proper feedback when they also find content on their own.
- It can encourage the school to buy improve their technology and equipment as technology plays a key role in the flipped methodology.

Threats:

- Teachers that feel not have the required skills in IT and do not have the time or wish to learn about it may lose opportunities in their jobs.
- When starting preparing materials the load of work and the extra time will be needed, some teachers feel that they are already spending a lot of time preparing traditional classes and assessing students ‘work so may look at this method as a new thread in their professional and personal life.
- It is a fact that not all the students have the same learning style, some students may benefit from this methodology due to this but those who, are kinaesthetic learners, need always the teacher to look at their reactions while the lesson is presented because the traditional way of teaching allows that so these methodologies can be a real threat for these sorts of students who need the teacher help and support before doing any sort of exercise of test.
- More competition for schools, and editorials. Using this methodology, editorials can lose sales of their books as information will be only looked for in the web and there will be no need of more students’ books. Moreover if the teacher becomes just a tutor and the class is just a meeting point for discussions. Those schools who get a good brand-name using this methodology will be able to offer courses online without the need of spending a lot on tutoring facilities and will need less teachers.

Conclusion

A flipped methodology may not be the best one for some teachers but at least it is a way of reflecting on the changes they should do to reach students and to motivate them to use technologies in their classes and to use media tools as videos.
A flipped class is not a class without a teacher, it is not a class without lectures, instructions or exams or a space. It is a methodology who aims to teachers to reach students who are in risk of drop out because they cannot attend to class for circumstances such as illness, sports competitions, living in rural areas, social reasons. It is a way of spending more time with students and motivating them to think, to reflect, to research and to share all their knowledge with their peers in a collaborative way.

References, links

http://blendedclassroom.blogspot.com.es/2011/05/history-of-flipped-class.html
http://www.cte.cornell.edu/teaching-ideas/designing-your-course/flipping-the-classroom.html
http://www.cte.cornell.edu/teaching-ideas/teaching-with-technology/video.html#howoutside
http://www.flippedlearning.org/domain/36
http://www.flippedlearning.org/domain/41
http://emorywheel.com/flipped-teaching-an-inexact-solution/
http://coredogs.com/article/flipped-classes-threaten-universities-publishers
http://www.flippedlearning.org/review
Evaluation Module 1.1

Answer the following questions

1. **What exactly is a “flipped classroom”?**
   a) methodology which essentially do the homework that is typically done at home is done in the classroom
   b) methodology which has two parts, on the one hand learning activities in class and doing a sort of different activities at home or outside the classroom.
   c) Is a methodology where the students watch videos at home
   d) Is a methodology where the teacher is the centre of the classroom

   **Correct answer is B**

2. **Flipped classroom is a methodology where students develop better skills in:**
   a) Technological, on line and video skills
   b) Entrepreneurs, marketing and social and emotional skills
   c) oral communication, self-management, self-esteem and sense of responsibility as well as their leadership
   d) IT skills

   **Correct answer is C**

3. **Which role teachers and students get**
   a) teacher becomes the mentor and the student changes the role as becomes the actor
   b) teacher become the film maker and students are an observer
   c) students change the role and become a self-learner
   d) ..............................

   **Correct answer is A**
Unit 1.2. Basic elements and steps to flip the classroom

Introduction

This chapter focuses on the basic elements and steps to flip the classroom. It explains the steps to implement the flipped methodology in traditional teaching according to the time and to the technological resources available.

Content

The steps to plan any lesson, be it traditional or flipped, should be based on what VET students know. Then, we, teachers should build on this: what we want to achieve (the objectives of the lesson according to students’ needs), the means by which we want to achieve these objectives (the resources and activities that may be organized and prepared) and how we evaluate what we have done. The objective of the design of a flipped lesson is to maximize the students’ participation in online and offline activities by analysing the context in which this will take place, setting out its objectives and methodologies to use, activities inside the classroom and outside the classroom. The success of the design of a flipped classroom depends on harmonising what we want our students to do before, during, and after the class. Teachers’ main goal should not be on exhausting the subject but rather on developing a wide range of students’ deeper cognitive skills (not only understanding and comprehension). Outside the class VET students develop lower levels of cognitive work, via reading or watching videos (gaining knowledge and comprehension) and in-class they focus on higher forms of cognitive work, harder work of assimilating knowledge, solving problems, debating or discussing some controversial issues (application, analysis, synthesis, and/or evaluation), where they have the support of their peers and teachers.
Planning a lesson

When planning a lesson it is important to consider:

- What do you want your students to know and be able to do after the flipped classroom? (objectives and skills (e.g. Bloom taxonomy)
- What are the contents, the activities and resources matching the learning objectives?
- How will you assess what VET students know or can do?
- How much time do we need to cover the specific material and how much time do VET students need to really learn and achieve the learning objectives defined?

During the planning phase, transition is important: each step should be built and connected to the next one within the sequence of the learning experience. For the flipped lesson, teachers should select just one small sub-topic of the whole curriculum and focus on it during the lesson.

All tools and materials to be used should be clearly explained and its usage justified. In all, a flipped classroom activity should include the following main elements in its description:

At the end of the activities it is important to consider opportunities to evaluate the work done by reflecting on the design of the class or course. It is important to answer questions such as:

- Did it work?
- How will I know if it worked?
- Did I communicate the ideas effectively?
- Did I provide enough opportunities for students to practice?
- Was it challenging enough?

Feedback from students on what worked well and what didn’t should be collected. Results obtained should be used in order to improve future practices.

In the next section, we will describe the implementation of each planned phase of a flipped lesson.

Step 1 – Tasks to develop outsider the classroom (pre-class)

The pre-class activities (videos, readings) should be developed in advance of the first class time. During the pre-class activities students are assigned to watch recorded video lectures or do some readings, and concepts related to the content area are introduced (maximum length of each should be 10-15 minutes). Thus, students gain familiarity with the new material before class. Short quizzes (problems to solve, research to do) embedded in these materials motivate students to do the pre-class work; collaborative work among students is encouraged from this very first stage: students’ answers posted to the course website are shared and commented upon.
The instructions for the pre-class can be in a word, PowerPoint, podcast file and should be presented in a clear language. It is important to hold students accountable for completing the pre-class assignment. It is important to provide students a way to ask questions about the content they learn outside of class (use of dashboards: www.padlet.com; www.tricider.com).

**Step 2 – Introduction to the topic in the classroom**

As many students may not have any previous experience with flipped classroom and/or active learning, it is important to explain all the activities that students will develop outside and inside the classroom and their rationale so that they will understand the benefits of the flipped classroom method.

In the first in-class lesson, teachers should give a brief introduction to the topic and explain the learning process. They should also clarify the expectations concerning results, the students’ participation and time needed to perform all the tasks.

It is recommended to spend the first 10 minutes of the in-class time reviewing the pre-class activities to identify common questions or gaps through a quick three-question review quiz or a question and answer session with students, influenced by the pre-class activity results.

The remaining class time can be spent in engaging students in active learning to practise and improve what they started learning outside class, such as: case studies, creative scenarios and simulations, debates, group investigations, students’ PPTs and discussions, micro lectures, where students share and exchange knowledge with their peers.

These in class activities should focus on developing students’ high level cognitive skills. They can work individually in the classroom, in groups or pairs as the teacher circulates among students, monitors them and provides help and feedback.

At the end of the first in-class activity it is important to prepare the continuation of the learning experience from the in-class activity to the outside-of-class individual or collaborative practice. Teachers should explain to students what they should do after the in-class activity to continue learning or link it to the next topic. Some ideas for deepening student understanding include:

- Use discussion boards or social media to elaborate on ideas developed inside class.
- Present additional issues for students to gain further practice on their own outside of class. Online assessment systems can be used to provide immediate feedback to students.
- Create assignments that require students to apply the skills and knowledge developed in class in a new way or to a new situation.
- Assign additional readings that expand the concepts discussed in class.
- Encourage students to create informal learning groups.

**Step 3 – Activities of self-assessment performed outside the classroom**

Self-assessment activities carried out outside the classroom prepare VET students for the last stage and may consist of short tasks or online questionnaires, with a limited number of items (3-4). Questionnaires should not check students’ understanding or comprehension of the acquired knowledge but rather whether they know how to apply what they learned.
Step 4 – Peer assessment and teacher assessment in the classroom

The activities developed in the last class session should promote peer evaluation and teacher’s evaluation. The construction of knowledge should be developed based on the dialogue, active learning and collaboration. By reviewing their peers’ work, VET students consolidate, reinforce and deepen both their own and their peers’ understanding of the material learned. This can help VET students to develop critical analysis skills, become comfortable with receiving criticism and justifying their position in further in-class discussions. This activity can be done by using an online discussion board or a group drop box in which students have access to each other’s submissions. The teacher will be able to evaluate VET students’ reviews, comments and their understanding of their peers’ work.

Tips and tricks

- Design the pre-class activities (videos, readings) before the class.
- Build and connect each step of the class to the next one within the sequence of the learning experience.
- Less is more: select just one small sub-topic of the whole curriculum and focus on it during the lesson.
- Embed short quizzes (problems to solve, research to do) in the pre-class video to motivate students to do the pre-class work.
- Encourage collaborative work among students from this very first stage.
- Explain to students all the activities they will have to develop outside and inside the classroom and their rationale so that they will understand the benefits of the flipped classroom method.
- Give a brief introduction to the topic and explain the learning process to students at the beginning of the first class.
- Review the pre-class activities to identify common questions or gaps at the beginning of the classes.

Conclusion

This chapter presents the basic elements and steps taken in order to implement the flipped methodology in traditional teaching. Step 1 is based on the pre-class activities (videos, readings), developed by the teacher in advance of the first class. Students get familiar with the new material before the class by watching recorded video lectures or doing some short readings, which introduce the concepts related to the content area. Short quizzes (problems to solve, research to do) embedded in these materials motivate students to do the pre-class work. In step 2, in the first in-class lesson, students are first introduced to the topic and teachers have to explain the learning process and the methodology. Then students are engaged in active learning
and have to practise and improve what they started learning outside class. Step 3 involves students in self-assessment activities carried out outside the classroom and prepares them for the last stage: peer assessment and teacher assessment in the classroom.

References/Bibliography/Links

[10] Michael, Joel Where’s the evidence that active learning works? In Advances in Physiology Education Published 1 December 2006 Vol. 30no. 159-167 Retrieved from http://advan.physiology.org/content/30/4/159

Evaluation Module 1.2.
Answer the following questions:

1. What does step 1 - pre-class activities in flipped classroom' methodology consist of?

a. In the first stage students have to watch a 30-minute video, which introduces and fully explains the main concepts of the topic. Collaborative work among students is encouraged from this very first stage: students’ answers posted to the course website are shared and commented upon by using dashboards.
b. Students may complete a pre-class assignment accompanying a short video, which introduces the main concepts of the topic. However, this is not compulsory as students can do it at the beginning of the class.

c. Students have to complete a pre-class assignment (a short video or reading with embedded tasks), which introduces the main concepts of the topic. Collaborative work among students is encouraged from this very first stage: students’ answers posted to the course website are shared and commented upon by using dashboards.

d. Students have to complete a pre-class assignment (a short video or reading with embedded tasks), which introduces the main concepts of the topic. They are not allowed to collaborate with their peers at this stage.

Correct answer: c

2. What does step 2 - in-class activities in flipped classroom’ methodology consist of?

a. Teachers should give a brief introduction to the topic and explain the learning process and the new methodology, and engage students in activities so that they consolidate, practise and improve what they started learning outside class.

b. Teachers should give a brief introduction to the topic and explain the learning process and the new methodology, review the pre-class activities to identify common questions or gaps and finally engage students in activities so that they consolidate, practise and improve what they started learning outside class.

c. Teachers should review the pre-class activities to identify common questions or gaps and engage students in activities so that they consolidate, practise and improve what they started learning outside class.

d. Teachers should engage students in activities so that they consolidate, practise and improve what they started learning outside class.

Correct answer: b

3. What is the focus of in-class activities?

a. The focus of in class activities is on stimulating students’ motivation by gaining knowledge and comprehension of knowledge.

b. The focus of in class activities is on developing students’ cooperation skills by engaging them in project work.

c. The focus of in class activities is on developing students’ high level transversal skills.
d. The focus of in class activities is on developing students’ high level cognitive skills by solving problems, debating or discussing some controversial issues (application, analysis, synthesis, and/or evaluation), where they have the support of their peers and teachers.

**Correct answer: d**

4. **Why are students engaged in peer assessment?**

a. By reviewing their peers’ work, students improve their motivation.

b. By reviewing their peers’ work, VET students consolidate, reinforce and deepen both their own and their peers’ understanding of the material learned. This can help VET students to develop critical analysis skills, become comfortable with receiving criticism and justifying their position in further in-class discussions.

c. By reviewing their peers’ work, VET students become comfortable with exams.

d. By reviewing their peers’ work, VET students improve their relationships with teachers and their colleagues.

**Correct answer: b**
Unit 1.3. Creative classroom

1.3.1. Creativity in VET learning system

Being creative means to bring something new, that wasn’t there before and has been brought into being (De Bono). How creativity can be supported within VET is a challenge requiring innovative pedagogies that can support learners though a variety of didactical tools and organizational approaches to the curricula. Therefore, VET teachers have to be facilitators of the learning process, allowing divergent and creative thinking for stimulating the potential of students to arrive at the development of tangible innovations (products, technologies, services, experiences or cultures).

In order to do so, teachers themselves need to be creative, which means exploring new ideas on how to teach and willing to test out new teaching practices.

But what is creative thinking? When we think, we generally use critical or creative thinking, as they are the two most basic methods to solve problems. Creative thinking usually consists of coming up with new and original ideas, while critical thinking is a matter of thinking clearly and rationally. To put it simply, when we think creatively we are exploring new ideas, when we are thinking critically, we are making choices.

During formal education, much more critical thinking is exercised, due to the specifics of curricula and of the learning paths requirements. Therefore, exploring new ways to stimulate and effectively teach learners how to apply creative thinking.
Some of the key factors that can introduce creativity in any VET classroom are:

- students working in groups,
- informal relationship between the teachers and the students,
- hands-on practice activities and solving real problems framed in the context of workplace
- bringing more ‘playful’ or ‘games-based’ approaches
- providing a wide range of appropriate materials, tools and other resources
- access to new or different media and technologies
- use of the outdoor environment
- flexible use of time
- use unconventional spaces for organizing classes like museums, factories, exhibitions, contests, libraries, handicraft workshops etc.

All of the above key factors are to be found in the flipped pedagogy. By using the flipped classrooms model, we can redefine in-class activities: from using math manipulatives and emerging mathematical technologies, in-depth laboratory experiments, original document analysis to debate or speech presentation, current event discussions, peer reviewing, project-based learning, and skill development or concept practice. Definitely, more time can be spent in class on creative and higher-order thinking skills such as problem-finding & solving, collaboration, design and test, work in groups, research, and construct knowledge with the help of teacher and peers.

The aspect has a crucial importance, as the creative classroom approach and flipped pedagogy could help VET sector by keeping them up to date and always being connected, in order to enhance students experiences and learning. Moreover, crossing over the limits of PowerPoint presentations, teachers themselves explore new multimedia ways of approaching their teaching, challenging themselves to find the most effective ICT tools for supporting the flipped model of learning.
1.3.2. New ways of facilitating creativity

Beyond the flipped classroom model, which will be explained in detail along this guide, there are other new ways of facilitating creativity, especially in VET educational system.

STEM CLASSES

STEM is a curriculum based on the idea of educating students in four specific disciplines — science, technology, engineering and mathematics — in an interdisciplinary and applied approach. Rather than teach the four disciplines as separate and distinct subjects, STEM integrates them into a cohesive learning paradigm based on real-world applications.

In recent years, STEM has become increasingly popular in education because it is specially designed to help students:

- See how content in one subject or discipline is connected to other subjects and disciplines
- Think more deeply about key ideas and issues instead of memorizing facts and abstract information
- Make connections between what they learn in school and their experiences outside of it.

In a STEM classroom, learning occurs in an unified approach, as students are asked to work on problems that blend, or blur, the lines between disciplines and require knowledge and thinking across them. It is believed that this approach better prepares them to solve problems in an increasingly complex and connected world, ensuring that they will be career-ready and globally competitive.

For example, developing robotics-based lessons and activities to teach STEM content, students not only learn the concepts but also gain self-efficacy and a new view of their own capabilities as a STEM student. They can see themselves as programmers, problem-solvers, leaders, and potentially part of a future STEM workforce. These lessons cover standards-aligned math and science content, which is otherwise abstract, through hands-on, concrete experiences.

Good news is that STEM can be integrated into any subjects, without having to be a separate discipline by itself. Any teacher can help students think more deeply and integrate ideas across disciplines in his classroom by:

- Asking questions that require knowledge and thinking in different areas.
- Providing students with a design challenge connected to a topic you teach.
- Using a design thinking process during project work.
OPEN EDUCATIONAL RESOURCES

The trends and challenges of European schools for the coming five years reveal two major imminent trends in Europe: the changing role of schoolteachers as a result of ICT influence, and the impact of social media platforms, such as Facebook and Twitter. The changing role of school teachers are among the most imminent trends in the global schools. Looking in the mid-term period, two to three years away, an increasing focus on open educational resources (OER) and on the use of both traditional and virtual learning methods are expected to have a strong impact in Europe. These trends are also identified at the global level for having the potential to stimulate new models of teaching and learning by tapping the wealth of content accessible through the Internet.

Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation. The concept of Open Educational Resources was defined for the first time in 2002, within a UNESCO meeting in Paris.

Speaking of what can be considered OER, we can include, in a general approach:

- learning content: full courses or course modules, learning objects, collections and journals;
- tools: software to support the development, use, reuse, and delivery of learning content;
- Implementation resources: intellectual propriety licenses to promote open publishing of materials, design principles of best practices and appropriate content.
In order to find OER, one can start from a specialised search engine, such as: www.globe-info.org; www.folksemantic.com; www.discovered.labs; www.creativecommons.org/search/en (which contains a directory with only scientific resources -www.creativecommons.org/science); www.ocwconsortium.org/courses/search etc.

Basically, there exist millions of open resources than can be used. OpenCourseWare offers open educational resources using a general licence from the Creative Commons suite: BY-NC-SA – Attribution –Noncommercial –Distribution in Identical Conditions Teachers/trainers using OERs would have a strong relationship with technology and social environment, taking into account the changes and innovation of education in digital times.

They adapt their resources and skills to the new generation requirements and thus respond to the desire of young people to learn when they want, how they want and how much they want, in their own way, without any constraints imposed by fixed educational program, established by teachers, according to their idea how to go on an educational route.

Within the past few years, large institutions such as prestigious universities around the world developed OER on a variety of subjects for learning and development aiming to help people with small budgets and no formal training in education, especially at higher levels. Such OER initiatives aspire to provide open access to high-quality education resources on a global scale.

But what is open licenses?

There is an existing not for profit organisation, named Creative Commons, which provides licenses free of charge to the public. The rights of using different open content are expressed in 5Rs framework: retain, reuse, revise, remix and redistribute. These permissions are granted to users free of charge or for a small fee. In January 2016 there were over 1.1 billion works licensed under Creative Commons, number which is heavily increasing due to the richness of educational materials that can be used in educational purposes.

Benefits of using such OERs are many and some of them are obvious:

- Education becomes open to anyone and available from anywhere, not restricted to school/college
- Education becomes affordable or even better, free
- Education becomes flexible, according to the time of the learner
- The learner can test/try have a sample before enrolling
- Learners work at their own pace in their own way
- Provides access to a large amount of study materials
- Intellectual capital is available for reuse.
DESIGN THINKING & DESIGN PROCESS

A design thinking approach, or a design process, can help get students questioning, thinking, and making in both STEM and traditional single-subject classrooms. While creative designers have been using this process for almost fifty years, this process has more recently found its way into education, especially in maker spaces.

This is a shift for a changing role of the teacher from "sage on the stage" to "guide on the side." Design thinking, which is a dynamic, creative and collaborative approach to problem solving, presents a unique model for educators who wish to facilitate from within the class, rather than impart knowledge to it. While design thinking has its roots in the innovation/design sector, the process itself can be used anywhere. Indeed, it is a great tool for teaching 21st century skills, as participants must solve problems by finding and sorting through information, collaborating with others, and iterating their solutions based on real world, authentic experience and feedback.

There are many models for the steps in design thinking, but they generally follow a process of defining the problem, coming up with ideas, making prototypes or designs and then improving them.

define the problem  
come up with ideas  
make the prototype  
 improve the design

All the steps are explored by working in small groups. There are basic ground rules for working together (like saying "yes, and" rather than "yes, but" when disagreeing with someone), and suspend judgements, listen in order to receive, build on what you receive, encourage the others in the group to help maintain a culture of positivity, risk-taking, support and flexibility.

In the first phase, students look, listen, and learn. The goal here is awareness. It might be a sense of wonder at a process or an awareness of a problem or a sense of empathy toward an audience.
Sparked by curiosity, students move to the second phase, where they ask tons of questions. This leads to understanding the process or problem through an authentic research experience. They might conduct interviews or needs assessments, research articles, watch videos, or analyse data. Students apply that newly acquired knowledge to potential solutions. In this phase, they navigate ideas. Here they not only brainstorm, but they also analyse ideas, combine ideas, and generate a concept for what they will create. In this next phase, they create a prototype. It might be a digital work or a tangible product, a work of art or something they engineer. It might even be an action or an event or a system. Next, they begin to highlight what’s working and fix what’s failing. The goal here is to view this revision process as an experiment full of iterations, where every mistake takes them closer to success.

In the physical sciences, students can connect to engineering, not by repeating someone else’s steps to build a bridge or roller coaster or boat, but by developing prototypes in response to a specific design challenge. These prototypes, and the changes made to improve them, help teachers identify learner misconceptions and help students develop deeper understanding of concepts. If you are a single-subject science or math teacher, give students tasks that help them see the connections between these two disciplines!

No matter exactly how we deploy the ideas in a STEM or traditional single-subject classroom approach, we always need to remember that the goal is to help students connect ideas between various concepts which apply in real world or to connect disciplines in order to think more deeply about our world. Challenging students with complex problems that require ideas and information from multiple lessons and subjects can better prepare them to tackle the issues facing our world today and into the future.
1.3. Understanding digital native learners (Generation Z)

Generation Z or Gen Z (also known as iGeneration or iGen and Post-Millennials) is the demographic cohort after the Millennials (Generation Y) (the mid-1990s to mid-2000s as starting birth years). Most of Generation Z have used the Internet since a young age, and they are generally comfortable with technology and with interacting on social media. As highlighted by the current research Sparks & Honey, children of the generation Z spend about 41% of their time outside school on the computer or on other devices, suffering from FOMO (fear of missing out). Especially for Z Generation, the Internet and technologies have had a major influence on their culture and development. Millennials and Z Generation students have never known a world without computers, the World Wide Web, video games, cellular phones and other devices.

As researchers said, the brains of Generation Z are structurally different than those of earlier generations and this is not because of the genetics, but in connection we are using our brains to respond to things in our environment. Darla Rothman says the part of the brain which is responsible for visual ability is far more developed, making visual forms of learning more effective, while auditory learning (lecture and discussion) is very strongly disliked in Generation Z case. The result is, said the researcher „interactive games, collaborative projects, advance organizers, challenges, and anything that they can try and see are appreciated”. Other differences connected with this generation are:

- a very developed visual intelligence
- they are able to understand, to read the images and to use the images for sending a message;
- a very developed spatial intelligence as a consequence of their playing video games from the earlier ages;
- the distributive attention which sometimes is called by teachers superficial;
- the ability to have fast responses in a short time and they need a quick response as well;
- the pleasure and the capacity to learn by doing and learn by their discovery

The conclusion about generation Z was they need to use collaborative work, to work in teams, to use experiential learning as part of their academic activities.

The classroom challenge is that learners are now digital and many instructors (digital immigrants) are still analog; i.e., they teach and put knowledge into students’ heads instead of being a facilitator of learning. Instructors are at a disadvantage because they aren’t as comfortable with technology as their learners, and yet they must be prepared to teach the “content of the future” using software, hardware, digital, technological, and social media. There is a need to provide meaningful, tech-focused, professional development for instructors as they transition from a traditional learning model to one that is transformational.
But the main focus for an effective and relevant educational process, in connection with Generation Z is the development of Knowledge society skills, with digital competence having both a leading and an enabling role. In this process digital technologies and open educational resources serve as major catalysts in bringing about pedagogical innovation. Universities need to be changed from teaching institutions, driven by content-centered approaches, to learning institutions that use the context of curricular subjects to nurture knowledge society competences. The curricular content platform should be used to develop identified competences. The reports recommend that Education should evolve along a three stage developmental trajectory.

1. The initial Technology Literacy stage enables learners to use ICT to learn more efficiently.
2. In the second Knowledge Deepening level learners acquire in-depth knowledge of their school subjects and apply it to complex, real-world problems.
3. The third level focuses on Knowledge Creation and serves to develop competences to create the new knowledge required for more harmonious, fulfilling and prosperous societies.

The current predominant teaching-centred approach should be complemented with truly student-centred approaches that employ digital technologies to mediate different modes of learning and assessment. Consequently, the ability to identify, use, evaluate and create digital learning material becomes a mandatory competence to be developed and refined throughout the educational process, and in particular with the professional development of teachers.

1.3.4. Tips and tricks for teachers

Classroom approaches:

- Use language like: trial, experiment, challenge, design, and collaborate. This is particularly easy in science class, where you can let the kids explore scientific ideas, but with a little switch in thinking you can make it happen in other subjects too!
- Make your lessons a problem to solve for the kids! Think about ways you might be able to group your science, math, engineering, and reading blocks into a bundle that revolves around a problem that kids can research and solve. Youngsters are curious and problem solvers by nature, so it is really fun to tap into that.
- Kids can learn about how scientists and engineers come up with new ideas by learning about what others have tried, and then using creativity and trial/error. Teaching kids that it is ok to fail when you are taking risks.
- Start small. Choose a lesson or topic you already do and just modify it a little bit to be more of a problem or question students need to solve.
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✓ Look online for ideas from other teachers in the trenches. Try places like Pinterest, Symbaloo, and Twitter for ideas.
✓ Use materials you already have on hand. Don’t buy into the idea that you need to spend money do to STEM lessons.
✓ If it doesn’t go like you had planned, use that as a lesson too. STEM is all about trial and error. The students learn just as much, maybe even more during flops.

Approaching Generation Z as learners:

Sparks & Honey (2014) offer a list of ideas of how to connect with Generation Z. Some of their main ideas and suggestions are:
✓ Depict them as diverse (ethnically, sexually, fashionably)
✓ Talk in images: emojis, symbols, pictures, videos
✓ Communicate more frequently in shorter bursts of snackable content
✓ Don’t talk down... talk to them as adults, even about global topics
✓ Assume they have opinions and are vocal, influencing family decisions
✓ Make stuff – or help them make stuff (they're industrious)
✓ Tap into their entrepreneurial spirit
✓ Give them control and preference settings
✓ Collaborate with them – help them collaborate with others
✓ Tell your story across multiple screens
✓ Live stream with them – or give them live streaming access
✓ Optimize your search results (they do their Internet research)
✓ Talk to them about values (they care about the costs of things)
✓ Include a social cause they can fight for
✓ Help them build expertise (they want to be experts)
✓ Tease (think: ephemeral, puzzles, surprises and games)
✓ Feed their curiosity

Bibliography:
Sparks & Honey at https://www.slideshare.net/sparksandhoney/generation-z-final-june-17/8
Sparks & Honey at https://www.slideshare.net/sparksandhoney/gen-z-2025-the-final-generation-preview
Evaluation Module 1.3.
Answer the following questions

1. **What is the difference between creative thinking and critical thinking?**
   a.) Creative thinking is analytical and logical, helping the critical thinking to assess worth or validity of something that already exists.
   b.) They are both basic thinking operations but creative thinking is innate, while critical thinking is learned during lifespan.
   c.) When we think creatively we explore new ideas, when we are thinking critically, we are making choices.
   d.) Creative thinking is based on analyse, interpret and evaluate while critical thinking is based on brainstorming, imagination and open-mindedness.

   **Correct answer is c.**

2. **Which of the following approaches are stimulating creativity in the classroom:**
   a.) STEM classes which are practical workshops for technical subjects, OER which are e-learning classes and design thinking which is a marketing approach in the classroom.
   b.) OER which are digital assets useful in teaching, STEM which are transdisciplinary classes for sciences and technologies and design thinking which is a process of defining the problem, coming up with ideas, making prototypes or designs and then improving them.
   c.) Design thinking because is a solution-focused thinking, STEM because they can be used only in VET learning system and OER because they are using internet.
   d.) STEM, OER and design thinking but only if they are used in special, experimental learning at home.

   **Correct answer is b.**

3. **What is Generation Z?**
   a.) A movie highly appreciated by teenagers.
   b.) A social framework for the people who are not digital natives.
   c.) Young people who have never known a world without computers, the World Wide Web, video games, cellular phones and other devices.
   d.) A new generation of children who are using more sound than images in their learning.

   **Correct answer is c.**

4. **What are the most important tips when working with Generation Z for stimulating interest and creativity:**
   a.) Work with images, feed their curiosity, use experiments, challenges and puzzles.
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b.) Give them lectures in class and individual homeworks
c.) Create special controlled paths for their learning
d.) Don’t communicate too much – they like to work independently.

Correct answer is a.
Unit 1.4. The Innovative VET Teachers

1.4.1. Introduction

Innovation must be something more than “that new thing teachers do in their class, like using computers, group discussions, etc.”, or more than switching teachers in favor of those who are younger, or more than move away from textbooks in favor of amazing computers. Innovations also means thinking critically, changing the participatory context for one that’s better, creating in-class and extracurricular environments, promoting individual and group learning (building an educational work’s community), or improving the relationship between teachers and students.

We’re wrong when we think of innovation as the process of using ICT while, at the same time, we keep doing the same things but with the new technology resources. We should innovate by taking advantage of the achievements of Pedagogy and Psychology together with the use of the new technology tools.

Innovating is not an easy process; it requires time and perseverance for it to become real.

We’re tired of seeing how students take no interest in their lessons because they don’t feel engaged with the information they’re receiving or they don’t know for what purposes they’ll use it in the future. We need to prepare students for them to be able to learn on their own, encourage them to willingly learn, and this means changing the way we do things right now. If we don’t change gradually the approach on our work, we’re doomed to witness how our current problems will get bigger in the future. Based on the idea that students play the main role in the education process, it will be the teachers’ key role to educationally innovate —because they guide the students in their learning process and these will later become professionals.
1.4.2. Content

¿What is an Innovative VET Teacher?

Becoming an innovative teacher involves moving away from traditional pedagogical practices by suggesting and implementing new approaches to pedagogical issues. In order to come up with new approaches, teachers must have the adequate training to be able to suggest changes—changes based on providing tools to help students with the “learn to learn” concept—and they also must know the group they will be guiding during their learning process. Besides this, they must have enough knowledge and experience in their subject area.

When we hear about an innovative learning environment, the first thing that comes to our minds is a classroom where ICT are used. Obviously, both concepts are related since this will affect the nature of the information, the way we perceive our surroundings, the way we interact with other people or with technology resources. However, we shouldn’t focus on this idea. It is necessary that we open up our minds to a wider and more comprehensive perspective, in which students encourage themselves to learn and improve their creative and critical thinking by working together and, if necessary, by making use of new technologies. In order to build an innovative environment, it is essential that a series of agents (teachers, managers, office workers, etc.) contribute to maintain an atmosphere articulated through the academic aspect and the relationship with the sociocultural environment.

The teacher is who builds this innovative environment, selecting strategies and ICTs in order to achieve cooperative relations within the group. These relations are only achieved when every student realize that they can reach a learning goal, as long as the other schoolmates can also reach their own goals and keep on building their knowledge by learning from one another.

It is necessary to change many conceptions and attitudes, to see the student from a different perspective, to move away from the easy conventional class, which was representative of an education merely based on information that provides an endless amount of knowledge destined to be forgotten or in the student’s passive memory, and to disrupt certain balance of power between teachers and students.
Student’s learning: the main reason for innovation

In the traditional Vocational College’s educational system, students are considered to be recipients of information. The teacher decides what information he wants to provide and the student shows what he knows in a test in order to be rewarded with a grade. This way of teaching is full of problems that we all know and complain about: many students don’t feel motivated in class, they don’t process the information very well, they don’t meet certain requirements or follow certain rules that are imposed to them, they don’t attend the lessons, their school work are not properly done, and don’t perform well in their tests. When we look for a guilty; it is always the same: the guilty is the student itself, because they don’t study. Then the problem turns into a vicious cycle because we keep repeating the same teaching methods and come up against the same disaster all over again.

Before accusing the student of being guilty for all the problems, we should consider a series of questions:

- What are the students learning?
- Can the information they receive in class be considered useful?
- Will this make an impact in their lives?
- Are we treating them as adults or as children?
- Is it really useful to teach almost fixed informational schemes considering we’re living in a constantly changing world?
- Regarding student’s education, are we moving from reliance to self-management?

When we learn things on our daily lives by ourselves, the education process is very different from the one provided by the college. We do that kind of daily learning because it makes perfect sense to us; it’s not imposed to us, it’s like an inner force encourages us to learn.

An innovative approach for a Vocational College is based on the conception of the education process as a potential development process, in which the student goes from being a target of education to being a subject of learning. Instead of being just an information transmission process, its goal is to get students ready for life and not just for exams. A stable self-learning process can only be guaranteed when activities are motivated by activities themselves. This can be achieved by obtaining entrepreneurial abilities, the ability to innovate, to change the interests for knowledge, learning and creating, to provide new solutions, to better oneself, to take a step forward in life, etc.
How can we train Innovative VET Teachers from this moment on?

Perhaps the first step should be to encourage VET Teachers to spend some time reflecting on questions such as: do I feel satisfied by the results achieved at my college?, Why does academic failure exist?, why students focus more on passing their test instead of learning?

If they reflect on this, they will be able to develop a real, renewing working model that can be put into practice.

In order to develop a renewing working model that doesn’t fall into the same old routine, VET Teachers will have to boost a series of qualities, which can be summarized as:

a) Education as eagerness for improvement

An Innovative VET Teacher must be on the vanguard of changes produced in his field as much as in pedagogical and psychological progresses. Therefore, he must cross the frontier and educate himself knowing that applying what he has learned to his teaching experience is his only reward.

“The need for constant actualization turns the teachers’ learning into a continuous process throughout their entire career because, as a consequence of the context dynamism, not all the competences required for professional exercise can be foreseen and provided during the initial training”, as said on the final report of XXI Encuentro de Consejos Escolares Autonómicos y del Estado (2012). On “Teachers of the xxi century”, the following UNESCO’s definition of teachers’ continuous training is quoted: “the process focused on the revision and actualization of knowledge, attitudes and abilities originated by the necessity of their renewal with the purpose of adapting them to the changes and the advances of society.”

b) Recognition of the Educational Work

Sharing the educational work doesn’t imply the authorship loss of the materials, documents or owns projects. On the contrary, it will make it easier to access to those products for the rest of the members of the educative community and it will expand their application.

The recognition of the Educational Work is a great tool for professional development. It is required that teachers have a digital space where they can present all the professional works they have created: open learning resources with which they have contributed to the educative community, collaboration projects, network participation and professional practice communities, digital badges, professional competences accreditation and other merits or works related to their working life.

c) Project Participation

This helps the VET Teachers to be in contact with other professionals with whom they can share experiences, create new materials, exchange knowledge and many other activities that will enrich them mutually.

Teachers constitute Vocational Colleges’ most important resource, and therefore it’s important that they can practice educational leadership and not only administrative management. It’s
important that they can participate in learning communities, educational projects and continuous training processes.

d) Use of New Technologies

The use of new technologies raises exponentially the possibilities in the classroom and brings reality closer to the learning activity of the students.

It’s necessary for every teacher to have the digital competence so that digital culture will become the force of transformation and improvement of the Educational System. There are no excuses anymore, it’s not a choice. It is important for their teaching tasks that every teacher has enough ability to manage and exploit the overabundance of information and educational resources which continuously arrive through the Internet.

e) Contribution to the Global Community (Forum, Social Media, etc.)

2.0 web is there and with it, the 2.0 eLearning. The Innovative VET Teacher can’t ignore that current students were born inside the net. Everyday more and more professionals decide to choose self-learning based on 2.0 eLearning. They constitute forums, blogs, videocasts, etc. about learning common subjects, mixing their knowledge together with the knowledge of other experts on the matter worldwide.

Social learning activities on practical digital communities and personal learning environments (PLE), as well as massif online open courses (MOOCs) are new ways of learning that are available on the net. They were born lately and they are on expansion with different offers. It is convenient to encourage teachers to promote this movement because it offers innovative learning and collaboration possibilities and personal development. Innovation, collaboration and personal development are associated with sharing experiences and learning resources through the digital platforms that allow these exchanges. It has become a need to learn to work in these virtual spaces and to know how to manage social media as a powerful tool for communication and collaboration.

f) Professional Essays

Writing professional essays to share knowledge and recognition and the use of this knowledge by other members of the teaching community contribute to the motivation to keep learning and sharing with the rest of professionals.

g) Introducing New Innovative Technologies and Methodologies

Flipped Classroom: methodology in which Project E-Classes is based - Flip your classes through multimedia enriched apprenticeship simulations and develop e-skills for VET teachers and students to enhance youth employability. It is a pedagogical model that transfers the work of some learning processes out of the classroom and then uses the class time – together with the teacher experience – to boost and make other acquisition processes and the practice of knowledge in the class easier.

Gamification: it is a pedagogical tool that consists of using the game psychology and its mechanics and dynamics into non playful environments like a classroom.
Whatsapp open online course (WOOC): it’s a teaching resource to develop educational pills, to work a precise theme of a module or didactical unit, etc. throughout a tool that is more or less used massively on our daily basis.

“Bring Your Own Device” Methodology (BYOD): it’s a methodology consisting on allowing the students to bring and use their own mobile devices to the classroom so that they can work through different tools or multiplatform applications. Within the main advantages of this methodology we find those of economical nature, because they use their own devices so the school doesn’t have to invest previously on such devices.
Difficulties on converting VET teacher on Innovative Vet Teachers

There are some difficulties that will hamper the conversion from a VET teacher into an Innovative VET Teacher:

a) The Fear

Change is something new that makes us lose control over certain things and we don’t know completely what our future will bring. Fear is innate to humans and we should understand it as a way of cautiously moving forward through the projects we undertake. We should let behind thoughts such as “innovation is not for me”, “a teacher is what it is”, “if I change I will look ridiculous”.

We shouldn’t pander to the fear of what other colleagues will say about us because those same colleagues are the ones not willing to change themselves or the things that surround them. For them, this must stay the way they have always been. They don’t see innovation as something good.

b) Technical Difficulties

An underlying reality is that, frequently, VET teachers stop being innovative because of the rise of technical problems when it’s time to start their learning activities with ICT.

c) Economic Difficulties

It is necessary that innovative teachers can have access to the appropriate installations and the use of technological resources that will enrich learning processes.

d) Administrative Difficulties

Even though administration should be understood as a support for innovative academic activities, that isn’t always the case. In the majority of the cases, it has turned into a bureaucratic and administrative burden, which implies the loss of time that the teacher can dedicate to research and innovation.

To the bureaucratic and administrative burden we have to add all the educational reforms that are continuously bombing the way of acting and applying learning methods in Vocational Colleges.
Innovative VET Teacher Common Traces and Characteristics

As a conclusion, we can summarize Innovative VET Teacher Characteristics in:

- They know how to anticipate learning appropriateness.
- They manage and make learning easier.
- They evaluate competences,
- They create innovative environments for learning.
- They form cooperative and multidisciplinary work groups among their students.
- They generate new knowledge.
- They participate in the curricular design, in the definition of the competences, in the elaboration of the curriculum content and they are jointly responsible for the evaluation.
- They develop design abilities.
- They conceive education as a challenge.
- They stimulate the creation of heterogenic groups among their students.
- They provide his students with resources to innovate.
- They have an innate desire for change.
- They have good capacity for research.
- They stand out for their creativity and inventiveness.
- They implement what they have planned.

1.4.3. Conclusions

Vocational College’ students are like sponges of knowledge, procedures and attitudes, and so, a teacher interested in changing those processes will also transmit those wishes to them. If teachers and schools are innovative, we will get innovative students.
E-Classes - Flip your classes through multimedia enriched apprenticeship simulations and develop e-skills for VET teachers and students to enhance youth employability. 2017-1-RO01-KA202-037344

www.e-classes.eu

1.4.5. References/Bibliography/Links

- Fernando Valenzuela Yllana’ Blog: https://ojulearning.es/author/nando-val/
- Celia Ruíz Flores’ essay: https://innovarenformacion.com/2015/12/02/donde-estan-los-docentes-innovadores-de-fpe/
E-Classes - Flip your classes through multimedia enriched apprenticeship simulations and develop e-skills for VET teachers and students to enhance youth employability. 2017-1-RO01-KA202-037344
www.e-classes.eu

Evaluation Module 1.4.
Answer the following questions:

1. Who builds the innovative environment?
   a) The teacher.
   b) The students.
   c) The school.
   d) Both teachers and students.

Correct answer is a)

2. Which of the following options is not a difficulty on converting VET teachers into Innovative VET teachers?
   a) Fear.
   b) Economic difficulties.
   c) Non receptive students.
   d) Technical difficulties.

Correct answer is c)

3. What’s the name of the methodology consisting on allowing the students to use their mobile devices in the classroom?
   a) “Devices Up” (DP)
   b) “Bring Your Own Device” (BYOD)
   c) “It’s On You” (IOY)
   d) “Devicezification”

Correct answer is b)
4. Which of the following options is not a characteristic of Innovative VET Teachers?

   a) To evaluate competences.
   b) To conceive education as a challenge.
   c) To stand out for students’ creativity and inventiveness.
   d) To make the students feel safe in class so that they can speak freely.

**Correct answer is d)**
Module 2 Design and development of learning contents for flipped lessons

Unit 2.1. Planning a flipped lesson for VET

2.1.1. Structure of Flipped Classrooms

The structure of the course is what determines if it is a flipped classroom. Within the Vocational Education and Training sector, flipped learning can enable learners to get to grips with theory online, and use valuable face-to-face time for practical applications. The teacher or trainer can then spend more time observing, coaching and providing personalized feedback to learners.

**Before class:** Teachers assigns students materials to be investigated at home. These can be online lectures or demonstrations, podcasts, videos, internet searches, etc. Students watch video lectures or perform other activities to expose them to content.

**During class:** Class time is devoted to clarifying or rehearsing information or to deeper learning experiences. Students participate in active learning activities to deepen their understanding of the content by using many possible techniques: class exploratory exercises, discussions, group works, inquiry or in-depth investigations, applications, critical & creative thinking or problem solving exercises. Teacher uses time to support student’s individual learning needs.

**After class:** Students complete homework assignments independently to practice mastery of learned concepts.

**Intermittently:**

Students complete assessments and provide instructor feedback about course and learning activities.

(Source: Faculty Innovation Center - The University of Texas at Austin)
Preparing a flipped classroom requires the teacher to spend more time in planning and organising the lessons.

Preparatory steps:

1. Brainstorm a single lesson or unit that you want to flip. Outline the key learning outcomes and a lesson plan. Be aware that not all lessons are flippable. (Consider these key questions: What are the key concepts or theories that students need to know? What activities can reinforce these?)

2. Develop the flipped homework assignment
   a. What you will ask the students to view at home? (the Online activities: What are students expected to do before they come to class? (view lecture, readings, vodcast, podcast).
   b. What you will ask the students to do at home? (How can they self-assess what they have learnt? - quiz, short answer, blog)

3. Develop the follow-up activity for class:
   a. How you will assess their completion of the homework? (How to you plan to provide feedback for the activity? - e.g auto feedback thru quiz, oral feedback to class, written feedback on blogs)
   b. What will you be doing with them in class to follow-up, reinforce or extend the material covered in the homework? (What activities can students do in class to reinforce learning? - Discussions, class quizzes, problem-solving, think-pair-share)

4. Prepare the students and do the assignments.
   a. Record & share
   b. Create, select and make available resources for the students
   c. Rethink your classroom activities. How can they help students practice what they have learned at home?

5. Assess areas of success and improvements.

6. Develop your own materials to be delivered online.

7. Create a platform (website, webpage) that students can use as a consistent portal to the lessons.
For example, a simple flipped lesson in VET education – technical field can include:

- Teacher develop an online PDF and video on a technical procedure, embed some links for extra documentation and design a short quiz to check learning;
- Learners read/watch the resources before class and take a quiz in class to test their knowledge;
- Learners work in groups on the theme (procedure) – for example, to create a checklist and schedule for care and maintenance tasks.
- Learners attend a face-to-face workshop session, where they demonstrate their abilities (e.g. to safely carry out required care and maintenance checks).

2.1.2. Before and after class

A common way to deliver content to students before class is through video lectures. The lectures may be recorded by the instructor of the class specifically for the class, recorded by the instructor for a MOOC (Massive Online Open Course) that the class uses or a collection of videos recorded by other people or even a MOOC given by other instructor.

For VET learning system, the videos can not only include theoretical concepts but also various illustrations of relevant industries standard equipment that reflect how that technology is being used in the workplace, real working devices, techniques and procedures and lots of other materials that are difficult (and sometimes even impossible) to be brought into the class (Creating screencast tutorials in advance of a session so learners come prepared to practice in class; Embedding a series of YouTube videos on various techniques (e.g. hair and beauty) so that learners are primed to experiment in their face-to-face session; Providing links to web pages for learners to explore individually (e.g. contextual studies for art and design) and designing collaborative activities in class for learners to share and build on what they have learnt).

Consider dedicating some class time to explain the reasoning for the flip and how your students can best approach your video lectures. There is always a risk of resistance to change – so make sure the students understand what you expect from them in terms of preparation and what they can expect in terms of learning outcome from a flipped classroom course. Giving students specific tasks to prepare for can also be a way of ensuring that they watch the video or read the text before they come to class.

Make sure that your students know how to access your lectures and how they will be assessed. You might also want to try watching a sample lecture with your students to model good active listening behaviour and help boost their confidence when it’s time for the actual lesson.

When teaching with a flipped classroom, the teacher’s role in class becomes one of facilitating learning and ensuring that students understand the new form of preparation – being “the guide on the side rather than the sage on the stage”, as the saying goes.
The after class activities should be also considered at this stage. Plan, prepare and develop the continuation of the learning experience from the in-class activity to outside-of-class individual or collaborative practice. Determine what students should do after the in-class activity to continue learning or bridge to the next topic. We don’t learn something very effectively in one instance. Rather we learn through practicing in many ways over an extended period of time. Think about and plan how often students will need to practice or revise their thinking to really master the material and be successful.

2.1.3. In class activities

The really important part of flipped classroom teaching is not the alternative preparation – it’s what you can do with the class time. Flipped classroom teaching is really about freeing up class time to do the things you’ve always wanted to have time for: exercises, tasks and activities like discussion, analysis and peer feedback. Using the time in class with the students to create deeper understanding and reflection and to put theoretical knowledge into practice.

The activity you choose will depend on the learning goals and objectives as some activities lend themselves best to certain types of content.

First 10 minutes of the in class activities can be used to get students in the right frame of mind. This can be done by:

- Reviewing pre-class activities to identify common questions or issues
- Using a question/answer session with students, based on the pre-class results
- Providing a quick review quiz (just 3-4 questions), based on the basic learning objectives that can be graded or ungraded. This can serve to review and focus the students so that the information is fresh in their minds.

The remaining class time can be spent engaging in what are commonly referred to as active learning strategies which can help students further process what they learned in the pre-class content. Here are just a few examples:

- collaborate with peers to solve problems, perform experiments, researches, tasks
- hands-on practice and test
- work on assignments;
- present student created content;
- discuss examples or case studies;
- debate a topic;
- share and exchange knowledge with peers.

Especially for VET, this may include also the use of digital technologies enables students to:

- learn by doing in a safe environment which allows for trial and error;
conduct up-to-date, simulated maintenance tests;
- practise troubleshooting procedures.

In return, the use of such applied digital technologies minimises risk and cost to employers whilst enhancing safety. Instructors are able to deliver and assess progress individually or as groups collecting printed evidence for assignments. The approach can be fully inclusive of all learning styles and engaging & interactive for students motivating them to learn.

Since the learning taking place is active and collaborative, it is essential that the environment supports and promotes the learning. The classroom should be easily re-configure for a variety of activities and the instructor should be able to engage students’ from anywhere in the classroom.

2.1.4. Assessment and benefits

Because flipped learning is more decentralized and personalized than a traditional course design, the challenge is to have assessments that provide reliable, actionable information about student learning in the various phases of flipped learning that is as up to the minute as possible.

Summative assessments are used to determine if students have achieved the learning objectives. It can be realised using tests or papers given at the end of instruction on a topic in order to determine what students learned. Unlike summative assessment, formative assessment occurs during the learning process rather than assessing the end result of the learning process. It is also important in formative assessment that students change their behaviour based on feedback.

Incorporating formative assessment is an important benefit of flipped classrooms because flipping the class frees up class time for interaction with the instructor and students receive more formative feedback about their performance before completing summative assessments. This sort of interaction can be easier on the professor too because feedback may be less formal and students may ask for clarifications or elaborations.

Definitely, the main gain of flipped classroom is that the students’ and instructor’s time is used more efficiently, and they can cover more content without using more time inside or outside of class.

Study after study has shown that students learn more when they have to engage with the content and use their theoretical knowledge to solve problems (individually or in groups). Another advantage is that students can revisit the material and watch supplementary material – i.e. a flipped classroom can be a way to provide good teaching to students at different levels. Students also appreciate being able to go over the material again in preparation for exams.

For VET, working with various practical illustrations embedded in flipped learning materials and multiplying the hands-on activities in the classroom can strengthen links between the school and learners in order to talk more about skill requirements and employer expectations.
Moreover, employers can be able to have a snapshot of what their apprentices has achieved to date, view and remotely contribute to learner reviews and be more involved in the process of identifying the gaps in the training and skills the apprentices may confront with.

The flipped pedagogy strongly supports the development of equality and diversity by, for example, enabling students to communicate more with colleagues and other guests from a wide range of industries and backgrounds; reinforce key literacy, research and communication skills; help students understand their digital footprint and ways of protecting their privacy.

In flipped classroom students who are absent due to illness or extra-curricular activities such as athletics or field-trips, don’t get left behind because they will always have access to the learning material. Students in the class will be much more engaged in their learning and will get personalized education.

Contents of a flipped classroom are permanently archived for review or remediation.

2.1.4. Tips and traps

It is a different way of teaching, and for the students a different setting for learning, and that requires adjustments on both sides. It can be a good idea to start small so both the teacher and the students can adjust to the change.

Consider how long students spend preparing for class before assigning them additional work to be completed outside of class.

Limit the number of concepts and items covered in one video lecture. Break the material into chunks no longer that 10 minutes.

Begin each lecture chunk by linking its contents with what students already know.

Simplify the presentation to avoid distracting, confusing or irrelevant content that may interfere with student learning.

When creating the videos, prepare a detailed script ahead of time and when recording, eliminate background noises.

When creating the videos, considering including a virtual collage of images, diagrams, or charts that add impact to your presentation. Include cues that will help you seamlessly transition from one shot to the next. Avoid flowery language and long-winded monologues.

For in-class activities, make sure that the space is group friendly seating and the students can move easily from group to group.

Traps:

Not everything can be flipped.

Not all students (and teachers) have equal access to technology.
A heavy loaded curriculum and a low number of classes could make it difficult for the teacher to introduce this method.

It could trigger too much time in front of a computer – screen time.

Testing/assessing learning could prove difficult or even impossible, if there are other more classical systems of assessment.

Not all students are motivated to watch lectures outside of class.

Can be very time consuming, when preparing the materials.

Bibliography:


Marco Ronchetti (June 2010), "Using video lectures to make teaching more interactive", International Journal of Emerging Technologies in Learning (iJET)


are you ready to flip?, Dan Spencer, Deb Wolf and Aaron Sams, available here: http://www.thedailyriff.com/articles/are-you-ready-to-flip-691.php
Evaluation Module 2.1.
Answer the following questions:

1. **What are the correct steps of a flipped classroom approach?**
   
a.) Before class, students rehearse the previous topics, during class students are listening to lecture and connect the past knowledge with the new content and after class students make their homework independently.

b.) Before class students work in groups for a project, during class students present their work to their colleagues and after class students take an individual assessment as homework.

c.) Before class students prepare for the topic using digital materials delivered by teachers, during class students practice applying key concepts and receive feedback from teacher and after class students check their understanding and extend their learning.

d.) Before class, students copy the lesson in their notebooks, during class they listen to the teacher's explanations, after class students learn the lesson and prepare for evaluation.

**Correct answer is c)**

2. **What are the in-class activities of a flipped classroom focused on?**

a.) Any active learning strategies which can help students further process what they learned in the pre-class content.

b.) Extended assessment of what students learned independently at home.

c.) A lecture provided by the teacher, extending the learning of students in the topic they studied already.

d.) Repeating the pre-class content, to be sure that all students have browsed that content.

**Correct answer is a)**
3. **The use of flipped pedagogy does help teachers to:**

   a.) Work less in classroom, because students can handle their learning by themselves  
   b.) Fix their curriculum into digital material and provide all learning at a distance for students who cannot attend classes  
   c.) Conduct all assessments online  
   d.) Introduce more active and collaborative learning in the classroom  

   **Correct answer is d)**

4. **The assessment of a flipped classroom can be done:**

   a.) Only at the end of semester, when students have achieved all the online learning material provided by the teacher  
   b.) Only in a digital format, since the learning contents are also digital  
   c.) Intermittently: students complete various assessments and provide instructor feedback about course and learning activities.  
   d.) Only by a large project-based assignment to small groups of students  

   **Correct answer is c)**
Unit 2.2. Architecture learning content (creating a learning object through SCORM)

After you have made plans on how to design the flipped lesson the next logical step is to create the learning content for the VET students.

One of the best options you can use to create learning content is by creating SCORM packages.

The definition for SCORM from Wikipedia\(^1\) is the following:

“Sharable Content Object Reference Model (SCORM) is a collection of standards and specifications for web-based electronic educational technology (also called e-learning). It defines communications between client side content and a host system (called "the run-time environment"), which is commonly supported by a learning management system. SCORM also defines how content may be packaged into a transferable ZIP file called ‘Package Interchange Format’.”

SCORM is created and specified by the Advanced Distributed Learning (ADL) Initiative from the Office of the United States Secretary of Defence.

To be more practical let us break it into pieces. The first part - Sharable Content Object, refers to the units of online learning material the Learning Management System (LMS) will present to the learners. In essence, the “SCOs” are the building blocks of digital instruction.

Simply put, it’s a standard that ensures instructional content will link with and appear correctly within the LMS if both are SCORM compliant. Therefore, if a LMS provider claims its product is SCORM compliant, you can rely that the LMS you have selected integrates with the SCORM compliant content creation platform used to develop the lessons.

There are several SCORM versions with SCORM 2004 being the most current and optimised version.

SCORM 2004 introduces a complex idea called sequencing - a set of rules that specifies the order in which the learner may experience content objects. To put it simpler, the rules do not allow the learner to deviate from a fixed set of paths through the training material. They also permit them to “bookmark” their progress when taking breaks from learning, and assure the acceptability of test scores.

We would recommend using SCORM 2004 4th Edition when creating new content as it is the most advanced version.

When you as VET teachers need to create some learning content you would typically work in the authoring tool (such as Adobe Captivate or Articulate Storyline) to design and produce the

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\(^1\) [https://en.wikipedia.org/wiki/Sharable_Content_Object_Reference_Model](https://en.wikipedia.org/wiki/Sharable_Content_Object_Reference_Model)
content. After that you can export the content to a SCORM package (.zip folder) so it can be integrated into your SCORM compliant LMS.

There are numerous SCORM compliant authoring tools available. If you are willing to spend some money, then you can purchase either Adobe Captivate or Articulate Storyline. Both of those are expensive and you might even need to pay per year for using them.

On the other hand, there are open source, free, light and freemium course authoring tools you can consider, such as iSpring or EasyGenerator.

Bear in mind that these tools are often limited in what the course developer can create.

We would suggest to select a LMS that can be used for creating SCORM compliant packages.

Moodle or ILIAS are typical LMSes that can be used for that purpose but you can check other SCORM certified products by visiting the ADL website here.

Valuable tips for the SCORM Course Delivery Strategy

One of the biggest mistakes you can make as a VET organization is to try to use courses that are “teacher-led” and just digitalizing them and making the student go through the course on their own. Instead, you should do your best to adapt the course delivery structure and make it “student-led” and provide adequate instructions to the student so they have good learning journey and user experience. The main topics you need to consider are the following:

- **Decide where “flipping” is most suitable for your course** – Identify which topics would be better delivered if VET students were given the opportunity to actively apply their knowledge and skills in class. You can introduce these topics to the learners online and then use the class time to work together on more practical-oriented activities.

- **Which assessments need support in the class** – Identify which assessment the VET students are struggling with and use the class time to go through those and help them understand them better.

- **How to make class time more action-orientated** – think of ways VET students can work in collaboration and how to create an environment where everyone takes part in the learning process and it is not the case that the VET teacher is the sole source of information. Also, identify ways in which the trainer can provide additional instruction and feedback to students who need the additional support – for example, individual consultations, Skype sessions and so on.
Build your course content with SCORM

SCORM does not limit the creativity of instructional designers when they design the courses. You can still decide on the content and how it’s organized. SCORM merely addresses how the learning content and the LMS link with each other through the coding language of SCORM.

With that in mind, when designing the flipped lesson, you must first decide:

- How the learning activity is structured and presented to VET learners, including whether the learner can take the courses in a pre-set sequence or in any order.
- Whether the learner must pass a certain module before progressing.
- If the learner can return to material already completed for a review.
- Whether the modules include embedded assessments or the assessment will be a separate module.

Getting ready to create a SCORM learning module

Usually, the starting point for this is the edit mode of a SCORM Learning Module in authoring mode of the respective authoring tool you have chosen.

As soon as you create a chapter structure, you can apply the SCOs within a chapter. In the didactical logic of the SCORM standard, a SCO equals an objective. SCOs can also be exported separately from the Learning Module or imported into it. Thus you can combine different Learning Modules from SCOs once you created them.

SCOs may contain pages where the actual content such as text and media is added.

For each SCO you create you need to specify:

- The corresponding learning objective.
- Questions by which the learning objective is verified – usually the questions can be at the end of the SCO or put somewhere in the middle to check if the VET learner is paying attention while going through the material.

Importing SCOs

SCOs are not necessarily created within a SCORM Learning Module - they can also be imported into it. You can usually choose from one or more of the following:

- Other SCORM Learning Modules in authoring mode on the LMS you use
- SCORM Learning Modules in authoring mode from other LMSes
- External authoring systems compatible to the SCORM standard.

In any case, the SCO needs to be exported as a .zip file.
A very useful feature of SCORM is that you can add various forms of knowledge check questions at the end or at any point of the videos. This increases students' attention and provides better engagement for the VET learners while sitting at home online. An example for this can be short quizzes with instant feedback which provide students with self-evaluation for their understanding of the content and learning progress.

**Tips and tricks for teachers**

It is advisable that you use SCORM 2004 4th Edition when creating content as this is the most sophisticated version and has more features that integrate well with learning management systems (LMS).

If you cannot afford paid SCORM authoring tools, it is best that you choose a LMS, which supports creating SCORM compliant modules itself, for example Moodle, or ILIAS.

Think well before you start creating the SCORM module, which are the most suitable topics to introduce via the flipped lesson.

Find suitable graphics to include in the flipped module and bear in mind if you online sources to check the usage rights – the most suitable are for reuse or for reuse with modification if you are using Google images search.

Define a clear objective for each SCO and make sure it is just one so VET learners can understand it well.

Try to find already created SCORM modules on the topic you will teach, so that you can check if the structure you have in mind is similar to them.

Use knowledge check questions during the learning module so you can keep the learners’ attention.
Evaluation Module 2.2.
Answer the following questions

1) **What it means that a module is SCORM compliant?**

   a) The module can be reused in LMS, which support SCORM.
   b) The module is compliant with the ISO standards.
   c) The module can be created in any text editor.
   d) The module can be exported as an .exe file.

   The correct answer is **a)**

2) **Which is the most suitable version of SCORM if you would like to take advantage of the more sophisticated integration features?**

   a) SCORM 1.1;
   b) SCORM 1.2;
   c) SCORM 2004;

   The correct answer is **d)**

3) **Can you set prerequisites for your SCORM learning module?**

   a) Yes, this is mandatory in order to use the SCORM package.
   b) No, this is not possible.
   c) Yes, but this is optional and you can choose to use it or not.
   d) Yes, provided the administrator of the LMS has given you the appropriate rights.

   The correct answer is **c)**
4) What is a SCO equal to in the didactical logic of the SCORM standard?

   a) The learning objective of the module.
   b) The introduction to the module.
   c) The main topic of the module.
   d) Flash questions used to test if the learner is paying attention to the flipped lesson.

The correct answer is a)
Unit 2.3 Design of a flipped video

DESIGN OF A FLIPPED VIDEO

The role of a video.

Is video a key teaching tool for the flipped classroom and why?

Video content is important to the flipped classroom. It brings many aspects of the course material to life in a way that uses many sensors, is impactful and easily remembered.

Videos can be played and paused many times, being this way a perfect self-study tool in a combination with reading, taking notes, online discussions and research.

Why use videos?

- Videos are easy to access outside of the classroom at any convenient moment.
- Videos illustrate topics that are more complicated as well as they give students and easy access to guest lecturers, case studies, based on videos, experiments etc.
- They stimulate students’ interest, provoke them, make them share experience and come to discussions.
- Videos develop literacy and critical thinking.
- Videos connect complex topics to examples, based on real life. They combine different learning styles, this way giving opportunities for students to engage with material visually and orally.
- They “promote comprehension and retention of information” (Choi & Johnson, 2007).

Several studies show that VET students’ motivation increases when they use videos. In this case they watch the video for a longer period of time if there is a person talking to them in the corner of the screen, especially when the person talking to them is their own teacher.
E-Classes - Flip your classes through multimedia enriched apprenticeship simulations and develop e-skills for VET teachers and students to enhance youth employability. 2017-1-RO01-KA202-037344

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Flexibility that video provides

According to the research VET students like the flexibility that video provides: the time, place, and the pace of learning. The students can watch the video many times; can rewind parts of it for the purpose of better understanding. VET students are also reported to use videos as a repetition before tests.

Types of videos

There are several types of videos that can be used in the Flipped Methodology such as:

- Recording the lesson - this is the easiest way to produce a video.
- So-called "talking head" video is a video in which VET teachers are sitting in their offices talking.
• PowerPoint presentation in which the teacher is seen talking in the corner of the presentation.

• Video which shows the teacher drawing and explaining the topic of the class.

How to choose the type of a video to use?

Time is always a limited resource for teachers, so the teacher has to choose the type of a video which is achievable in terms of time and resources. Not always teachers have time and access to resources to record videos using high technological equipment which would help them to make a professional video.

The students are more engaged by the video

Most important for VET teachers is to choose the type of a video that will engage most effectively their specific target audience. Unlike students in general education classes, students in vocational education represent a diversified learning ecology. Typically, they belong to niches with fairly specific skills sets and interests. Each of these niches is best served by a specific type video. Hence it is crucial for the teacher to determine the learning styles of their target audience and pick the video category that will best cater to their skills set, interests, and parameters of expected professional competence.

Design of a video

Flipping classroom or so called ‘inverted teaching’ follows the idea that class time could be more time for engaging VET students in learning through exercises and other learning techniques, that would replace introducing students to the theory as the only activity. Flipping the classroom means to replace traditional theory delivering with other approaches more focused on students, like active learning, discussions, solving problems, as well as other forms of group work. Delivery the lesson is moved outside of the classroom, in the forms of videos, pre-class readings etc.
Delivery the lesson is moved outside of the classroom in the forms of videos.

Five important steps:
1. Prepare the materials
2. Add visual objects: images, diagrams
3. Add discussions, exercises, games
4. Rehearse the video for length and sound quality
5. Record the video

Visual materials should be prepared before recording the video. Such visual materials can be images, diagrams etc.

Visual materials lead to deeper comprehension and long-lasting retention of the material. For the purpose of reaching the effectiveness of learning videos are recommended to combine different teaching/learning techniques like discussions, exercises, games etc.

The importance of length and sound of a video

There are several opinions about the perfect length of a video.

According to some studies videos should be no longer than six minutes although other studies point to shorter or longer length. More important, when recording a video, is to record a video with a clear sound for the purpose of its effectiveness.

The importance of “Talking head"

It’s a good idea if they can see their own teacher talking. Try to be a talking head, not a reading head. Length of “Talking head" video: approximately 40 seconds.
Students should see the value in watching videos and relevance of videos with the goals of the learning process.

Watching simply videos could lead to misinterpretations, lack of deeper understanding and short-term retention. Students should also see the value in watching videos. They should see the relevance of videos with the goals of the learning process.

Interactive videos

Making videos would activate the role of students in the training process. It’s important to activate the students with interactive tasks after they have watched the videos (quiz, questions etc.).

Shift responsibility for learning from the teacher to the students

Interactive tasks help to shift responsibility for learning from the teacher to the students. The students get immediate response to their answers to the interactive tasks. The students can check if they have understood the topic of the class. The interactive tasks can be, for example, quizzes, questions and polls.

The teacher can see the students’ answers

It is also very important that the teacher is able to see the students’ answers to the interactive tasks.

Providing students with videos lectures may open up class time to do more interactive activities.

Monitoring the process of watching the videos

It is very important for VET teachers to be able to see if the student watch the videos.

They should have the possibility to check and monitor the process using an appropriate tool. It is recommended to include questions, following the video, which would clarify if the students have understood the material. Such feedback would prepare the teacher for the class activities - choice of questions for discussions, exercises etc.
CONCLUSION AND SUMMARY

Flipping the classroom means to replace traditional theory delivering with other approaches more focused on students, like active learning, discussions, solving problems, as well as other forms of group work. Delivery the lesson can be moved outside of the classroom in the forms of videos.

Choosing the type of a video

Time is always a limited resource for teachers, so the teacher has to choose the type of a video which is achievable in terms of time and resources. More important for VET teachers, when choosing the type of a video, is to keep in mind that the students are more engaged by the video.

Types of videos for Flipping the Classroom:

- Recording the teacher lesson
- So-called “talking head” - talking teacher
- PowerPoint presentation - teacher is seen talking in the corner of the slides
- Video which shows the teacher drawing and explaining the topic of the class

Five important steps when recording a flipped video:

1. Prepare the materials
2. Add visual objects: images, diagrams
3. Add discussions, exercises, games
4. Rehearse the video for length and sound quality
5. Record the video

Important tips when recording a flipped video – pay attention at:

- The length and the sound of the video (the length - 6 minutes and the sound - clear).
- The effective visual materials (images, diagrams etc).
- The “Talking head” – appearing for approximately 40 seconds.
- The value in watching videos and its relevance with the goals.
- The interactive tasks (example, quizzes, questions ) that would activate the students
- The possibility for the teacher to see students’ answers to the interactive tasks.
- The possibility for the teacher to see if the student have watched watch the videos.
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References


Evaluation Module 2.3.

Answer the following questions:

1) **What is the sequence of steps when making a video?**
   - a. Prepare the materials, add a visual object, record the video and rehearse the video.
   - b. Prepare the materials, add a visual object and record the video.
   - c. Prepare the materials, add a visual object, rehearse the video and record the video
   - d. Prepare the materials, rehearse the video and record the video

   **The correct answer is c**

2) **Which is the best length of a flipped video?**
   - a) 6 minutes
   - b) The length of a usual lesson, about 45 minutes
   - c) 3 minutes
   - d) 35 minutes

   **The correct answer is a**

3) **Why is it important to check if the students have watched the videos?**
   - a. The control is important!
   - b. This way the VET teacher can prepare better for class, knowing if the students have seen the videos.
   - c. The VET teacher must know everything about the students.
   - d. If the students have watched the video, there is no need for the VET teacher to get ready for the lesson in class.

   **The correct answer is b**

4) **The success of the design of a flipped classroom depends mainly on the alignment of what we want for students:**
   - a. Before the class.
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b. During the class.
c. After the class.
d. Before, during, and after the class.

The correct answer is d
Unit 2.4: Production and post-production of a flipped video

What is production and post-production of a video?

PRODUCTION for video includes its capturing, shooting and producing all elements that a video consists of. It is essentially the actual production of the footage.

POST-PRODUCTION is the process of editing the videos. This includes the editing of the footage, the graphics, sound mix, color correction, and delivery. In the post-production is you take all raw elements that you have created or captured and put them together to make your video.

For the purpose of producing an efficient video VET teacher should be familiar with the technology and be able to integrate it successfully into the teaching process.

This module is focused on the efficacy of the video production and post-production process as a learning and teaching tool.

VIDEO PRODUCTION AS A PEDAGOGICAL TOOL

Figure 1. (TPCK) includes the integration of Technological, Pedagogical and Content Knowledge to better understand the relationship between the three areas of knowledge. 1

Koehler et al. (2007) assert that just adding technology skills to the existing traditional education training focusing on content and pedagogical knowledge, as seen in the top center. 1

PRODUCTION

Creating the videos make Flipped learning

To create a video VET teachers should use appropriate software. Producing the video includes using internet platforms and uploading already prepared files on them. Then the links of the videos are sent to the students for watching.

There are several important things VET teachers should keep in mind when producing a flipped video:

- The quality of sound. It should be captured effectively and it is recommended to record a short video first and then send it to a colleague for testing.

- The quality of images. For the purpose of illustrating the material diagrams drawn by the teacher could be used as well as images downloaded from the Internet.

- The length of the video. The video could be effective only in case it is not too long. The first 6-8 seconds of the video should include very short introducing the speaker, as well as announcing the topic of the video. Studies report that students prefer to watch videos with duration of maximum 6 minutes.

- The personification of the video. Students also prefer to see in the video their own teacher rather than someone else no matter how good the other teacher is. It is reported that students are more engaged by the video including a “talking head” and their attention is focused for a longer period of time in case the person talking is their teacher himself. VET students prefer the nonprofessional video prepared and introduced by their own teacher to a professional but impersonal video produced in a studio.

- The communication ability of the teacher.

- Interactivity of the video. It is important to activate the students with interactive tasks after they have watched the videos (quiz, questions etc.).
The students also skip parts of the video if they already have understood the topic. Many students use the videos as a repetition before exams. It is important for students to be able to pause the videos and to rewind the videos if they don’t understand the topic.

The process of making a flipped video consists of 4 main steps:

- **Planning**
- **Recording**
- **Editing**
- **Publishing**

**Step 1: Planning**

The first main step is planning. VET teachers have to plan their video, which means to define the goals of the video – the topic they want to show and the problem they want to solve with the video. The audience should be taken into account when setting the goal of the video. Identifying the main objectives should be followed by the track in which they will be reached.

During the stage of planning, the teacher should think about the following questions:

- What the students will be able to do with the information?
- What activities will reinforce these conceptions?
- Will students learn by simulating through examples, discussion, or using project-based learning?

**For the purpose of making an efficient video VET teachers should:**

- write a script;
- not make the video too long and should avoid long monologues;
- find an easy program to create the video.

**Programs for creating a video:**

- **MS PowerPoint**

Using PowerPoint can make recording a lecture and producing a video an easy process.

Simply open up the PowerPoint slides onto your screen, turn on the screen capture software and start to record. Remember, it will also record your voice and you can flick from slide to slide. This tool makes a video of the slides and you can easily record yourself as a "talking head" in the corner of the video.

This tool also enables you to make quizzes and polls as a part of the video. This way the students get activated while watching the videos.

This tool is very easy for teachers to use, because most teachers already use PowerPoint - only adding the recording and the interactive elements, thus making it easier to implement Flipped Learning.
In PowerPoint it is also possible for VET teacher to see who has viewed the video and the students’ answers to a quiz. This way the teacher can prepare better for the next class, knowing if the students have understood the topic.

- Other programs using Screen capture technology.

Screen capture technology is a tool that records the screen of your computer as if you had a video camera pointing at it. Whatever you do on the screen, whatever you write, will come out in a video. You can also use other programs that use this technology: TechSmith Relay, Adobe Captive, Jing, etc.

**Step 2: Recording**

The next main step of making a flipped video is recording.

**It is important to create a video of good quality.**

For this step, VET teachers need the following equipment:

- a camera – professional, simple or a smartphone;
- a microphone;
  - lights (If you don't have professional lights, you can sit in the front of a window and use the natural light)
  - a computer;
  - a program for video recording and editing.

When you have your equipment with you, you can start to record the video.

*If you want to replace the regular background with a picture, it can be helpful to use a green screen.*
Make a short and effective video

- Be direct, be creative, be authentic, be yourself. Make your video class easy to understand.
- Use direct simple language. Make a video as if it were your lesson.
- Choose the right vocabulary but don’t be too academic.

- Prepare visual materials for your video: images, diagrams, notes which you will add to your presentation.
- Think about the design of your video and music.

**POST-PRODUCTION**

**Step 3: Editing**

The next main step of making a video in the flipped methodology, is editing.

<table>
<thead>
<tr>
<th>Download your video:</th>
<th>edit the content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin with:</td>
<td>title and music</td>
</tr>
<tr>
<td>Choose a type of background:</td>
<td>green background or picture</td>
</tr>
<tr>
<td>Choose vision:</td>
<td>size, colour and font type</td>
</tr>
<tr>
<td>Add effects:</td>
<td>sounds, pictures, video clips, diagrams, definitions, comments, questions, etc...</td>
</tr>
<tr>
<td>Prepare online test:</td>
<td>short online test on the topic of the lecture</td>
</tr>
</tbody>
</table>

- Check the content of the video and correct/remove the mistakes.
- Add title of the lecture and music.
- Choose the background. It is possible to change the green background into a picture.
- Choose size, colour and a font type.
- Add sounds effects, pictures, video clips, diagrams, definitions, comments, questions, etc. You can add a demonstration or draw a diagram while making the video.

* It is recommended to make your video interactive and prepare an online test so that students can check themselves how well they have understood the material.
Step 4: Publishing

After you have edited your video, you are ready to publish it.

Where can you publish it:

- On the e-learning platform your VET school uses.
- On YouTube (you can even set up your own channel).

Video can be shared with different settings

You can make your video public, so that everyone can watch it, or you can set a limited access – for only your students (you can restrict the access to the video with a password).

A research shows that it is an advantage to have the videos easily available.

CONCLUSION AND SUMMARY

Tips teachers should keep in mind when producing a flipped video:

- The quality of sound. Record a short video and then send it to a colleague for testing.
- The quality of images. Drawn diagrams and downloaded images with good quality.
- The length of the video. Students prefer to watch videos with duration of 4-6 minutes.
- The first 6-8 seconds. The speaker should introduce yourself and the topic.
- The students’ attention. They are more focused when "talking head" is their teacher.
- The communication ability of the teacher.

Four main steps for production and post-production a flipped video

1. Planning - define the goals of the video
   - The audience should be taken into account when setting the goal of the video. Identifying the main objectives should be followed by the track in which they will be reached.

2. Recording – create a video of good quality
   - Be direct, be creative, be authentic, be yourself. Make your video easy to understand, use direct simple language, choose the right vocabulary but don’t be too academic.

3. Editing - download your video
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- Edit the content, begin with the title and music, choose background, choose size, color and font type, add sounds, pictures, video clips, diagrams, definitions, comments, questions.

4. Publishing - make your video public

- You can make your video public (on the e-learning platform or on YouTube), so that everyone can watch it, or you can set a limited access – for only your students.

References


Evaluation Module 2.4.
Answer the following questions

1) The focus of the learning activity should be on:
   a. The design
   b. The content
   c. The sound
   d. The graphics

   The correct answer is a

2) Which main steps does the production of a video consist of?
   a) Designing, editing and recording
   b) Designing, planning and recording
   c) Planning, recording, editing, publishing
   d) Writing and recording

   The correct answer is c

3) Which are most important things when making a flipped video?
   a) Good sound, good images, short videos, communication ability of the VET teacher
   b) Good sound, good images, long videos
   c) The quality of the images, good training of the VET teacher
   d) Good sound, good images

   The correct answer is a
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4) For the purpose of making efficient video VET teachers should:

a. Avoid long monologues
b. Make the video long
c. Avoid long monologues and long videos
d. Make the video too long

The correct answer is c
MODULE 3. EDUCATIONAL GAMES.

Unit 3.1. Classroom time

3.1.1 The (extra) class time.

This unit discusses a crucial point: how to organize the classroom time in a more entertaining, stimulating and attractive way, in order to keep kids motivated and to integrate weaker students and at risk of early school leaving. Studies about the didactics of mathematics have shown that the feeling which is mostly associated to the subject is fear: fear of making mistakes, fear of forgetting things, fear of not being able to solve problems. Of course fear and other emotions such as anxiety, frustration etc., are not necessarily linked to maths and they are commonly connected to the school experience in general, as Daniel Pennac, one of the most famous writers of our time (and a very bad student, but later teacher himself), recalls in his book School blues:

*In any event, yes, fear was the single most important factor of my schooling, its padlock. For the teacher I became, allaying the fears of my worst students was a matter of urgency, to force that lock open so that learning might stand a chance of squeezing through.*

Fear and bad feelings not only build barriers and obstacles to learning, but also to other people and may lead to isolation and discomfort. In this respect, the educational game is one of the most efficient activity to support the learning process and the integration between students. The student takes an active part in building his own knowledge, without feeling ‘tested’ or examined, but working (and competing) with other schoolmates in a friendlier atmosphere. With this approach, the student feels more engaged in the learning process, not afraid of making mistakes because he will have the opportunity to correct his own errors and find another answer or solution. The teacher, in turn, will have the role of co-ordinator and ‘referee’ of the activity and the evaluation of the work will be shared with the student, who will be himself aware of his errors. The final aim of the educational game is turning something you have to do, into something you want to do, which is the best way, in Pennac’s words, to keep that little door open for learning to enter.
For teachers, setting up an educational game means re-designing the in-classtime in order to have the best impact on students: this means thinking in a different way about the content of the lessons (set goals, tests and evaluation methods, which will be different from the traditional ones), according to the typology of schools and classes; planning the game and the time in order to balance play and learning, as will be explained in the following chapters.

### 3.1.2 VET schools and educational games.

Are educational games suitable for VET schools? Of course yes, and VET schools, from this respect, have strengths and weaknesses. The greatest problem that VET schools have to face is that students have a reduced propensity to work at home than in other schools. The challenge of the game-based learning is to involve all the students in the work at home, first by the submission of attractive materials, then by linking directly the work at home with the participation to the educational game. The ‘fear’ of being excluded by the in-class game can lead to a higher motivation of the student to do the work at home. On the other hand, VET schools may prove particularly suitable for educational games from another point of view. Educational games can be of the most varied typology, as will be clear in the following sections. For theoretical subjects, like literature, maths, foreign languages etc., one of the aims of the educational games is to transform the class in a ‘laboratory’ and improve the ‘learning by doing’, in order to involve the entire class in the game, from the most brilliant to the weakest student. In this respect, VET schools have a great advantage: the shift from ‘class’ to ‘laboratory’ is not necessary because a great part of the teaching is in itself practical and experimental. In VET schools, then, the design of an educational game means re-thinking an activity which is in itself practical, in order not to ‘teach’ students how to solve a problem or to give an answer, but to let them discover independently the appropriate solutions.

If it is true that in VET schools’ students with weaknesses in the theoretical subjects are, as an average, more involved in the practical lessons, with the educational games we can make a step further, trying to involve the entire class in the home and in-class activities, and to motivate every student to learning, in order to make them less passive towards school in general, more integrated in the classroom and to avoid school dispersion.
3.1.3. Educational games: when and how.

When should an educational game be scheduled and how should it be designed to be more effective in the learning process? There is not, in the educational path, one moment better than another to start an educational game:

- it can be played before starting a new topic, to give a first, unconditioned idea of the contents that students will learn
- it can be played after having worked at home (for example after having seen a video-tutorial, as in the flipped classroom methodology), to enhance student learning
- it can be played when a topic has been completed, to sum up, fix the main points, revise the contents and to turn knowledge into capability and practice.

The game must have well-defined phases, previously designed and organized by the teacher:

- **Start-up:** the teacher introduces the participants to the methodology, games training purposes, rules, etc. It’s a general presentation and must be made with a clear, simple and friendly language.
- **Warm-up:** it’s a series of preliminary exercises, where the participants ‘break the ice’ and start to become familiar with the activity. This phase can be also used by the teacher to define the teams, groups and roles, according to the type of activity chosen.
- **Briefing:** it’s the actual explanation of the game, its rules and purposes, the moment when the activity must be described in every detail.
- **Playing:** it’s the active phase of the game, the heart of the activity, when participants play and try to achieve the goals of the game.
- **Debriefing:** it’s the ‘postgame’, the analysis of the work/activity done, when students re-elaborate what has happened, express their feelings and give feedbacks on the experience they have lived.

If the educational game proves effective to include all the students in the activity and the participants themselves give positive feedbacks, the activities to follow might be designed not only by the teacher, but with the collaboration of the class. This way, students can be involved not only in the above described phases, but also in the actual organization of the activity, because the design of a game requires knowledge and can be included in the learning process.
The strength of the educational game, then, is that, taking advantage of the experience, imagination, creativity of students and teachers, makes learning a shared and inclusive experience, which can be crucial in motivating students and improving their knowledge and skills. ‘Gamify’ lessons mean making the classroom a space where not only the cognitive aspect of learning is valorised, but also the affective, corporeal and manual ones. This way it is possible to change the students’ feelings towards school and make lessons and tests less fearful and more involving and playful. Furthermore, playing in general and so playing an educational game not only changes the students’ mood and attitude, but leads them to mental states of loss of awareness whose importance in the learning processes have been widely acknowledged, described as:

- **rule of forgetting**: while busy playing, children forget they are learning (but of course they are)
- **flow**: the feeling of complete absorption, involvement and focus in what one does, and a resulting loss in one's sense of space and time.
Unit 3.2 Types of educational games.

3.2.1. Introduction

There is a great variety of educational games which can be submitted to students, either organized directly by teachers or available online and all of them offer an unlimited range of possibilities of learning. The choice of the game will depend on many factors, as the structure and facilities of the school, on the materials available in the classroom, by the experience and creativity of the teachers and their educational purposes. For example, many games require an interactive device – there are many websites and apps online which allow the making of games such as crosswords, quizzes, or 3D simulation etc. – and consequently tablets and computers must be fully available to students; others require specific instruments, others can be done simply with students. Among other variables there can be the number of students, the level and typology of the class and, of course, the subject-matter.

There are many typologies of educational games:

- **knowledge games**: to create a first contact between the participants in the group;
- **warm up games**: to help participants to get to know the group and to perform tasks with others;
- **perception games**: to get in touch with others;
- **trust games**: to create a certain level of trust and familiarity in the group;
- **cooperative games**: to define strategy to collectively solve problems;
- **games with bigger team**: to stimulate individual skills and to learn how to act in a group;
- **team adventure games**: to be able to cooperate in stressful and competitive situations;
- **reflection games**: to exchange feelings about what was experienced and felt during the game.

It is good to know to remember that there are **five models of learning styles** and each educational game should have at least a prevalent one in order to support the learning process:
1) **transmission**: the information passes from the teacher to the learners;

2) **imitation**: learning by imitating – also known as vicarious learning;

3) **experimentation**: it is the active process of “learning by doing” in a specific context;

4) **participation**: this model of learning is based on the social aspect of learning by building new meanings and ways of interactions;

5) **discovery**: the term is referred to accidental acquisitions of knowledge, due to the involvement of the learner context.

### 3.2.2. Choosing educational games for VET schools

Which typology of educational game is most suitable for VET education? The peculiarity of vocational schools is that they have a great amount of practical activities. Consequently, the typology of games that can be better developed are the ones which simulate real situations and the role games. These typologies involve games of co-operation and teamworking and learning styles based upon experimentation, participation and discovery. They are basically situations of problem-solving, where the students are required to know how to do something, to experiment, rather than working on theoretical concepts and answering to questions. If the student conceives the ‘problem’ as a game, it will become a sort of challenge: he will be interested to know if he missed something, if there are errors, and how to correct them independently and learn from them. Moreover, the simulation of real situation is not only functional in relation to the learning process of the student, but also to his school career, because for most VET schools the exam for the vocational qualification is based on real-life activities.

**Simulation.** Simulation games include a wide variety of activities and are considered the very first type of educational games. As we have said above, these activities can be made either *online*, using apps and websites, or in the classroom and/or laboratories. These games are quite complex to realize and require a long and articulated planning, both for the video-tutorials to be submitted for the home-work and for the educational game. The advantage of this game is that the student faces *ex novo* a problem, which he can solve only with the concepts learned at home and without the support of the teacher, who plays only a ‘monitoring’ role. For example, in electrotecnics the teacher can submit a simulation of a fault in an electrical system.
Students, working alone or in small groups, must identify the source of the fault and find the strategies to solve the problem. Other simulations may involve safety issues, or the installation of light points in a room or house. What makes the game attractive in this cases is not the practical activity in itself – as it is a common feature of VET schools – but the fact that the students work independently and use the information gathered with his own work making ‘real’ experiments. While engaged in a simulated real-world activity, the student self corrects, self evaluates and develops awareness of his abilities and skills. The teacher might also introduce, during the activity, some variables, like time (complete the work in a fixed time), a maximum error tolerance, security issues, etc.

The role game. In this typology of game students are expected to play each a character of a ‘common tale’ in a framework lead by a master or teacher who can be the teacher himself or another participant. Role games are particularly flexible and can be based on plots/narrations to develop the student’s ability to perform a character; in VET schools these games can be particularly useful if the framework involves a situation of problem-solving. For example, in vocational schools for tourism, the framework can be the organization of a restaurant hall in a hotel for an event. Each student will play a specific role (waiter, receptionist, maître, hotel director etc.) with different duties like: organizing work shifts (for waiters), preparing the tables and optimizing the restaurant is seating capacity, checking hosts in and out and so on. Students will use their theoretical knowledge and practical skills to manage each situation and find the best solution. In this case, the teacher can organize the activity in a multidisciplinary context: maths will be useful for managing time and money; the foreign languages will be crucial for those students who play roles as receptionists, etc. For VET schools other role games will prove useful to analyse the professional-client relationship, to develop the student’s soft skills; in this case not only the vocational and technical teachers will be involved, but also the ones teaching language and literature, to test the ability of the participants in oral and written communication. In Zapalska, Rudd and Flanegin 2003 another game for tourism is described, where students play travel agents and have to make strategic decision, be aware of the market and maximize the agency’s wealth.

Games for testing knowledge. Beside these activities, particularly relevant for VET schools, it is essential to submit games whose purpose is to test the student’s knowledge in a ‘playful’ way.
In a context of flipped lessons, some interactive tests can be submitted (one of the most popular is the app Kahoot), but we can go a step forward and ask the students, after having seen the video tutorial, to think about some questions to ask to their classmates. In science, games like Mayer’s square or the Kanisza’s triangle can be useful to develop the students knowledge and to stimulate concentration and attention, making also easier the interaction between teacher and students. In this case more traditional learning method become involved, like imitation and transmission, which, together with more complex activities like the above-mentioned ones, may help both to ‘activate’ the weakest students of classrooms and to stimulate the others to rethink their learning process and the outcome of their knowledge.

Many educational games have been developed for teaching maths, from the simplest to the most complex ones. One of the most popular toys among children, LEGO, is used to visualize concepts, expressions, equations properties etc., which become clearer if associated to shapes and colours of the little bricks. For example, to solve expressions with the three types of brackets, you can link the coloured bricks to the corresponding brackets and set up an order using colours (green before yellow, yellow before red). But you can teach maths also through complex educational games which associate videogames and digital storytelling, as discussed in Cardillo and Fiorentino 2017. Using characters from Disneyland (like Alice in Wonderland) and the platform Moodle, the authors invented a story developing through different stages, which could be reached by players answering questions and solving maths problems. This way the game had narrative and challenging aspects and proved to be very engaging for students, whose evaluation was based on the final score of the game.

**Unit 3.3 Design of an educational game**

When it comes to educational games, there are different important aspects concerning their definition and designing. First of all, creating a game which is both fun and educational represents a challenge that is not easy. Moreover, engaging with a game can be a big investment of time, efforts and attention, as well as it can impact a student’s behavioural and attitudes outcomes. The research on this topic affirms that the engagement with a game affects positively the intrinsic motivation and attention of users and by consequence it improves learning performance, curiosity, exploration and experimentation.
According to a research carried out by Aalborg University, which interviewed different VET teachers, educational games should both motivate pupils and offer a high quality learning process to them. A good option would be to have different depths of learning, so that students can actually learn something practical from educational games. Moreover, the game should be similar to what they play at home, giving them a logic they are used to deal with in their everyday life, in order to motivate them, adding as much game content as possible to help them through this path.

On the other side, when planning an educational game, it is important not to forget the learning contents that the game should offer to students. The main goal is to learn while having fun, creating a balance between learning and game playing in order to students to be motivated playing the educational game while still learning. It is indeed important that the students while playing get to learn what is needed compared to the curriculum standard. For this reason an educational game needs to be designed with the right curriculum for the specific target group and at the same time inform the teacher on what can be taught through that game. The learning objectives need to be very clear before designing an educational game. A clear goal of what is needed to be learnt helps designers to create a game that meet the requirements of set educational goal rather than general options that will be forgotten in the future. Specifically, three are the main elements when it comes to learning objectives:

- **Prior knowledge**, i.e. what skills students have or need to have before playing the educational game
- **Learning and retention**, i.e. what skills students can or expect to learn by playing the game
- **Potential transfer**, i.e. what skills they could learn from the game that might be utilised in different contexts

Finally, in order to design an educational game some practical elements are needed as well. The MDA framework helps designer through three layers that helps through the process of game creation. MDA stands for Mechanic, Dynamics and Aesthetics of a game. The first one consists in the basic components of a game, such as material, rules, goals and so on that the user will need to play. Dynamics are the behaviours that appear when Mechanic of the game and player inputs are applied together during the game. Aesthetics of an educational game collect the experiences, the emotional response and the pleasure that the game gives to the player. In addition to MDA, Instructional Principles represents another important element. These design principles have been already used in other learning environment and therefore are helpful to create a game which is also educational.
Adaptability and learning process of an educational game

Furthermore, an educational game should be easy to understand also for the other teachers that want to test it in their class, so that it can be smoothly explained to students. In addition, an educational game should be structured in order to increase the difficulty of the different levels or moments, so that students can keep learning as they do when the teacher explain different topics. For instance, an educational game should require productive mental work: in order to score points, move on higher levels or acquire badges students should demonstrate their skills regarding some field or understand a relationship of different parts of a system. These elements move the attention to another important factor to take into consideration when designing an educational game, i.e. the concept of “flow”. It consists in a situation where the person involved in an activity is completely focused and motivated to go further with what he is doing. This is very important for the success of an educational game, if a student does not feel motivated to keep playing he will stop and the educational goals will fail.

Moreover, when an educational game is played with a computer or an IT device, it is important for the learning outcomes of students that they can save the game and restart from that specific moment, so that they can make progress in learning a specific topic or subject.

Cooperation

Another important aspect regards the students’ participation during the game; different teachers explained that is very important that all the students are included in the activities so that everybody can actively learn through participation, because standing behind and listening would not have the same effects compromising their learning ability. To enhance this, students need to be in a situation where they have to cooperate and discuss what to do in order to get further in the game.

Conclusion

To summarise, it is possible to say that there are different important steps in order to carry out a good planning of an educational game to be implemented in class. First of all, it is fundamental to define the reason of the educational game, namely the learning outcomes that need to be achieved by the students. Secondly, the audience is an element that cannot be underestimated; for this reason, the target group need to be identified, such as the number, the age and the grade of the students. Moreover, it is important to clarify the skills that need to be assessed; so a teacher needs to look at the strengths and the weaknesses of the students to plan a fruitful educational game. Finally, the scenario is also something that needs to be implemented in order
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to give the students an engaging activity where they can cooperate and get new knowledge without getting bored.

References

He A.Y., Educational game design: game elements for promoting engagement, Oakton High School


Internet sources:

https://www.kqed.org/mindshift/31319/how-to-design-classroom-games-for-learning
Evaluation Module 3.3
Answer the following questions:

1. What should the main goal of an educational game be?
   a) It should be funny and amusing only
   b) It should teach something to students despite their willingness
   c) It should teach the same things that students learn with their families
   d) It should motivate pupils and offer a high quality learning process to them

Correct answer is D

2. Among the learning objectives of an educational game, Potential Transfer is one of the most important ones. What is it exactly?
   a) The skills that a student can learn from an educational game and that he or she can utilise in different contexts
   b) The skills that students expect to learn while playing
   c) The skills students have before playing
   d) The skills that a student learn while playing which are part of another subject

Correct answer is A

3. What is MDA?
   a) A specific educational game
   b) A framework to be taken into consideration that helps going through the design of an educational game
   c) A software that leads people through the design of an educational game
   d) A framework that teachers should use to manage the educational game in class

Correct answer is B
4. How should an educational game be planned?

   a) Increasing the difficulty of the different levels so that students can learn as they do in class

   b) Making the game the easiest as possible for students

   c) Without involving extra curricula aspects, since they could make the students uncomfortable

   d) Allowing students to exit the game when it gets too demanding

Correct answer is A
Unit 3.4. Management of an educational game

The management of an educational game is very important for the learning outcomes of the classroom’s programme, especially when it comes to the role of the teacher, which should make the game work in order for the students to gain knowledge as if they attend a classroom.

Before the games starts

Researches on the matter sustain that, before starting with the educational game activities, some warming up activities can help with the process. Begin the lesson with a warm up or some ice-breaker can help in order to focus students on new topics, while stimulating their creative thinking and showing them new ways of learning. Moreover, the feedbacks can give the teacher some hints on the readiness of the students and how much they are ready to follow that path the teacher is taking. Furthermore, warming up activities can help the teacher to understand students’ expectations and what they already know about the topic that needs to be introduced. In this manner the teacher, before starting the game can spot any difficulties students are struggling with and focus some aspect of the educational game to strengthen skills on those problematic concepts.

The aim of the educational game

Teachers need also to account for the real aim of the educational game, namely learning by doing, and in order to do so their main goal should be to give students something engaging that offers an immersive experience where players learn by doing.

When it comes to the game time teachers should not treat this instant as a special moment for students and then go back to the regular lesson. In this manner students will understand that during the game “regular rules” do not apply during that specific moment, without bringing home relevant concepts of the lesson. Teachers need to present game activities as part of the critical learning that happens every day, so that students live this experience with the same approach to a class activity, i.e. learning new concepts and knowledge.

The role of the teacher

During the game the role of the teacher is quite important. First of all, he or she needs to assign roles to students in order to avoid misunderstanding while the game is taking place. This will help also to avoid boring or nothing-to-do situation for students since each of them will know exactly where to stand and what to do. In other words, the teacher needs to create an environment where students feel like they are participating and that their role is important and accountable.
The role of the teacher should not be underestimated by students but at the same time it should not look as a ruler either. Two are the main issues that could lead to a bad management of an educational game:

When the teacher makes the game started and then sits back and watch the students playing.

When the teacher refers constantly to the rules of the game and to what is right or wrong, or gives simple answers such as “yes and no”.

The aim of the teacher is not that one of rule the game, but that of a facilitator. This means that he or she should help the students to discover, make connection and build new understanding. The teacher should always keep an eye on every aspects of the game in order to share best practices, solve misunderstanding and help students build on each other’s understanding.

**Summarise the educational game**

After the game is towards to an end the teacher should know how to wrap it up in order to not lose the knowledge and the interest of students. Leaving an educational game ending without a final discussion can hinder the main goal of the latter with the risk that students will lose the opportunity to connect this activity with their learning path. The teacher should always summarise the game while creating a discussion among students who will come up with their feedbacks, what they like and disliked and what new knowledge and concepts they have learned drawing on a sorts of self-reports. Teachers have also the possibility to report some results they think are important while the game is still played by students in order to have a whole and thorough final evaluation and discussion of the learning outcomes. In this manner students have the opportunity to transfer a game activity in a complete learning by doing activity. It is the teacher’s choice when to run the conclusions of the educational game; they can be done straight after the game if this one is played during one day, but also at the end of the week if the game lasts more than a single class.

**Conclusion**

The management of an educational game is a very important phase of the learning activity in a classroom, otherwise if badly managed it can mislead from its original learning goal. In order to do so, the best way to run an educational game in class is to have a plan and defined goals and in order to gain the most from game-based learning to be systematic and consistent as well. Each part of the time spent in class learning through a game is fundamental, from the warming up activity, to the time spent playing, to the moment of when someone commit a mistake, to the final evaluation carried out by the teacher together with the students. Game-based learning is a versatile tool for addressing multiple learning styles as well as customising contents to both an individual student and the whole class.
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References

Internet sources

https://www.edutopia.org/blog/managing-in-class-gameplay-arana-shapiro
https://www.edutopia.org/blog/rolling-out-a-game-rebecca-rufo-tepper
https://elearningindustry.com/5-tips-create-educational-games-that-drive-results
https://www.thoughtco.com/warm-ups-for-lesson-plans-31649
Evaluation Module 3.4

Answer the following questions:

1) Warming up activities can be useful for the teacher in order to:
   a) Wake the students up before the lesson
   b) Finish the educational game up so the students can assimilate the concepts learned
   c) Focus students on new topics, while stimulating their creative thinking, showing them new ways of learning and understanding their expectations on the topic
   d) Understand if students are keen to play a specific educational game

Correct answer is C

2) The management of a game in class should:
   a) Have the same structure of a classical lesson in class
   b) Be played with laptops only
   c) Be a special moment for students in order to learn new concepts and do different activities of those one in class
   d) Be presented as part of the critical learning that students deal with every day in class

Correct answer is D
3) During an educational game the teacher should:
   a) Be a facilitator of the game, helping students to overcome any issues that may appear
   b) Watch the game without interfere with it so that the students can solve any issues by themselves
   c) Be the ruler of the game in order to make students follow precise rules
   d) Avoid to give students a specific role so that they can find their own one while playing

Correct answer is A

4) The teacher should summarise the educational game:
   a) To help students to find a conclusion which makes sense
   b) To create a discussion among students where they can give their feedbacks
   c) At the end of the lesson otherwise all the knowledge gets lost
   d) During a new lesson in a different day

Correct answer is B
Module 4. Assessment of knowledge

Unit 4.1. The Debriefing and its phases

Debriefing is a form of evaluative discussion that takes place after the learning experience; it initiates further change or engenders progress toward the next experience in a responsible manner. The process of debriefing occurs when VET students and teachers are engaged in an evaluative activity about their performance. Following the performance, the VET students are led through a session in which they are asked to relive all, or parts, of their experience with a view to drawing conclusions from the experience, either by themselves (self-reflection) and/or with the help of teacher or peers.

Debriefing is a critical learning opportunity and an occasion to exchange meaningful and constructive feedback on both performance and outcomes.

After a debriefing session, students should know how they are doing and where they are in relation to their performance goals. The main purpose of the debriefing exercise is to analyse the existing performance and to determine what might be improved in order to ensure future performance satisfaction and fulfilment. Debriefing may encourage a new vision and students may be strongly motivated to take the next step towards improved performance.

Debriefing

✓ is a necessary part of experiential learning in order to make sense of an experience.

✓ serves as a tool to take students through the experiential learning cycle to be able to apply their new knowledge.

✓ requires preparation before a training session to develop the most appropriate questions based on the learning objectives.

✓ is based on the experiential learning cycle and has the following steps: description of the experience ("What?") , analysis ("So What?") and application ("Now What?").

Description Phase (Reactions Phase)

This is where VET students are invited to express their feelings and emotions about their learning experience (how they felt, how they reacted, if they peers shared the same feelings). It is important to invite all learners to have a chance to vent during this stage. VET students are invited to share what they noticed it happened and describe what happened. (What? What happened? What did you do? What did you expect and what was different?)
Analysis Phase (Processing phase)

The analysis phase focuses on VET students concentrating on what went well, what they learned and what could be improved or changed for the future. *(So What? Why does that matter? To you? To the partner? To society as a whole? In the context of the class? Is our experience in alignment, informed by, in conflict with other class texts?)*

Applying Phase (Implementation Phase)

VET students first work toward answering the question, “So what?” VET students are challenged to make generalizations that could also be applied in the real world. They are challenged to apply their learning to their own personal context, how they connect what they learned with their life what adjustments or improvements could be made to their current situations. *(Now what? What will you do different? What have you learned? What are you going to do next?)*

Tips and tricks

- Introduce students to debriefing and its strategies.
- Discuss its benefits.
- Prepare all the stages of the debriefing carefully and in detail.

Conclusion

Debriefing is an essential form of evaluative discussion that takes place after the learning experience; it focuses on students’ and teachers’ evaluative activity about their performance. The main purpose of the debriefing exercise is to analyse existing performance states and to determine what might be improved upon to ensure future performance satisfaction and fulfilment. It consists of three phases: description phase, analysis phase and applying phase (implementation phase).
Evaluation Module 4.1.

Answer the following questions:

1. What is debriefing?

   a) Debriefing is a form of discussion that takes place before the learning experience.
   b) Debriefing is an evaluative test given after the learning experience.
   c) Debriefing is a form of evaluative discussion that takes place after the learning experience.
   d) Debriefing is a form of discussion that takes place during the learning experience.

Correct answer: c

2. What are students asked to do during the debriefing session?

   a) The VET students are asked to relive all, or parts, of their experience with a view to drawing conclusions from the experience, either by themselves (self-reflection) and/or with the help of teacher or peers.
   b) The VET students are asked to relive all, or parts, of their experience with a view to evaluating their peers.
   c) The VET students are asked to tell their teacher what they would like to learn in the next class.
   d) The VET students are asked to reflect on their experience and then complete their logs with the help of teacher or peers.

Correct answer: a

3. What is the main purpose of the debriefing exercise?

   a) The main purpose of the debriefing exercise is to analyse existing performance states.
   b) The main purpose of the debriefing exercise is to determine what might be improved.
   c) The main purpose of the debriefing exercise is to make students express their opinions.
   d) The main purpose of the debriefing exercise is to analyse existing performance states and to determine what might be improved upon to ensure future performance satisfaction and fulfilment.

Correct answer: d
4. What are the main steps of debriefing?

a) The main steps of debriefing are: description phase, implementation phase and applying phase.

b) The main steps of debriefing are: processing phase, implementation phase and applying phase.

c) The main steps of debriefing are: description phase, analysis phase and applying phase.

d) The main steps of debriefing are: analysis phase and applying phase.

Correct answer: c
Unit 4.2. Organising debriefing

Prepare the Setting

The teacher should choose a debriefing location that encourages group discussions. For debriefing, VET students and teachers should be seated, at ease in a circle to avoid any position of authority.

When?

The best time to debrief VET students is generally immediately after the simulation/game/activity has ended. Sometimes short feedback during the scenario (time-outs) can be suggested. It is also important that the teacher leading the debriefing asks VET students to remain silent from the end of the scenario until they are all comfortably seated and ready for the debriefing in order to prevent them from sharing their first impressions and reactions only privately. Once they have shared such exchanges privately might not be willing to go “publicly”. On the other hand, postponing the debriefing at a later stage is not advisable as a lot of the learning could be lost.

Establish the structure of the debriefing

Prepare your questions for each stage

a. Description Phase (Reactions Phase): What?

Who would like to volunteer to share their reactions?

What’s your reaction?

Did anyone feel something else?

Your feelings may have changed during this activity – anxious, thrilled, confused, surprised, hurt, disappointed, angry, excited.

What feelings stand out for you?

What happened?

Who else had the same experience?

Who had a different experience?

Were there any surprises?

How many of you felt the same way?

How many felt differently?

What did you observe? / What did you notice?
What were you aware of?
What are the highlights of what happened?
What stands out about what you saw or heard?

b. Analysis Phase (Processing phase): So what?

What did you learn? What was important about this activity?
What value did you get from this practice?
What shifts occurred in your thinking?
What did you learn about yourself?
What made the activity meaningful?
What metaphor captures your learning?
What does that suggest about ________ in general?

What does that help explain?
What principle(s) do you see operating here?
How does this relate to other experiences?

c. Applying Phase: How can you apply/transfer that?

How would you do this again differently?
How could you improve the experience?
What would be the consequences of doing or not doing that?
What would you like to do with what you have learned?
How can you connect this activity with your life?
How can you transfer the learning to your life or practice?
How can you apply your insights?
How will you change your behaviour?
What’s next for you?
**Prepare materials you need**

Bring to the debriefing the materials used/produced during the lesson.

**Prepare activities/strategies to use with students (Suggestions for activities):**

“**Know, Want to Know, Learned**”.

VET students are asked to draw a three-section chart: “Know, Want to Know, Learned”. Before beginning a lesson or a unit, allow students to fill in the first two columns of the chart: they write what they already know about the topic in the “Know” column, and the “Know” column, they record questions they would like to answer or things they would like to learn through their studies in the “Know” column. At the debriefing stage students return to the K-W-L chart and fill in the Learned section.

**Think-Pair-Share**

The teacher first asks VET students to find a partner and then he/she instructs the group to discuss a debriefing question together, thus VET students get a chance to practice their answer before sharing with the large group. Many students do not like answering questions on the spot in front of their peers. Pair and Share also allows for each student to answer the question, so everyone gets a chance to answer each question that is asked.

**The Debriefing Wheelies**

The Debriefing Wheelies help teachers to ask debriefing questions in a proper sequence that makes sense to VET students, corresponding the three stages of the debriefing process: 1) What happened, 2) Why is this important, and 3) How can I use this information. The teacher writes the questions of all stages on separate cards (selecting a colour for each stage: orange- description, green- analysis and blue- applying). Debriefing exchange: The teacher places the cards in 3 piles according to colour. Students choose one card from the Orange Pile first, then find a partner and share their response to the question on their card with their partner. After the two have each shared their response, they exchange cards and find a new partner; teacher encourages 3-4 partner exchanges. After 3-4 exchanges with Orange cards, students choose a Green card and go through the same process. After 3-4 partner exchanges with the green cards, they choose a Blue card. After 3-4 partner exchanges with the blue card the participants sit in a circle and have a group debriefing session based on their findings.
Traffic Debrief

A traffic light is used to help direct drivers while driving to keep vehicles running smoothly. The three colours on the stoplight can be used as metaphors: What went well? (green light) What do you need to be careful of? (yellow light) What could be improved? (red light)

Following are examples of processing questions and information that relate to the Stoplight.

RED: What are things you noticed that need to STOP in order for us to be more successful? (e.g. blaming, etc.)

YELLOW: What are things we need to be CAREFUL of as we continue? (e.g. listening to all ideas, etc.)

GREEN: What are the things we want to GO for? (e.g. being respectful, encouraging more, setting time limits, etc).

Stump the Teacher

Students, working in partnerships or small groups, prepare questions or problems to try to “stump their teacher”. This activity is a high-level way because students need to have a deep understanding of the content to ask difficult and stump-worthy questions.

Tips and tricks

- Organise the debriefing session immediately after the simulation/game/activity has ended.
- Familiarize students with the stages of debriefing.
- Explain the rules to students clearly.
- Prepare your questions for each stage: formulate them clearly and concisely; focus on the most important ones; (if necessary, practise them before the debriefing).
- Select the activities to use with students.
- Ask students not to share their simulation/game experience before the debriefing.
- Create pleasant safe atmosphere by encouraging students to participate and valuing their participation.

Conclusion

The debriefing of the activity needs preparation: the teacher should prepare the setting, establish the structure of the debriefing, prepare the questions for each stage, and select the activities to use with students.
Evaluation Module 4.2.

Answer the following questions:

1. What are the main strands a teacher should consider when organizing a debriefing?

   a) Prepare the setting, schedule the session, prepare materials and activities/strategies to use with students
   b) Prepare the setting, schedule the session, establish the structure of the debriefing, and activities/strategies to use with students
   c) Schedule the session, establish the structure of the debriefing, prepare materials and activities/strategies to use with students
   d) Prepare the setting, schedule the session, establish the structure of the debriefing, prepare materials and activities/strategies to use with students

   Correct answer: d

2. What is the best time to brief?

   a) The best time to organise debriefing sessions with students is generally immediately after the simulation/game/activity has ended.
   b) The best time to organise debriefing sessions is generally during the simulation/game/activity.
   c) The best time to organise debriefing sessions is generally before the simulation/game/activity.
   d) It does not matter when the teacher organises debriefing sessions.

   Correct answer: a

3. What question belongs to the description phase?

   a) How can you connect this activity with your life?
   b) How can you transfer the learning to your life or practice?
   c) What value did you get from this practice?
   d) How did you feel about that?

   Correct answer: d
4. What question belongs to the analysis phase?

   a) What happened?
   b) What did you learn? What was important about this activity?
   c) What did you observe?
   d) What would you like to do with what you have learned?

Correct answer: b
4.3. Managing debriefing

**Skills and qualities**

The successful process of performance debriefing requires certain skills and qualities. These are: the ability to recall mentally all or partial aspects of the lesson (performance, event, activity); the ability to communicate with honesty and controlled self-criticism; the willingness to be realistic about performance outcomes; the precise application of the mental skill of self-awareness, particularly to gain insights into self-perceptions; the desire to reflect on all components of performance; the willingness to communicate thoughts, feelings and actions; and the attitude on the part of the student to be accountable for their performance.

**Setting rules for the debriefing process**

It is important that the debriefer reviews the agreed rules of debriefing to VET students, such as not discussing about the experience once it is ended until everyone is ready for the debriefing, raising hand for questions, being respectful, causing no offense, asking “why did it happen this way?” instead of criticising participants, and respecting the confidentiality of all that will be discussed.

**Communicating effectively**

A key skill to debriefing is the ability to communicate effectively. Communication will need to be two ways, open and honest, positive and sincere, precise and focused, empathic, helpful and fair. Communication in the debriefing setting is about sharing information and perceptions. Debriefing may be short/ brief or more deliberate and detailed depending on the situation. “The art of debriefing” relies on the personal communication skills required from the debriefer(s). Debriefing can be counterproductive if the debriefer is too harsh, rude, or perceived as offending participants. It could then become a negative learning experience as students may take a defensive stance instead of engaging in the activities. Debriefers/ teachers have to create a positive, non-threatening, and respectful learning atmosphere. Similarly, non-verbal gestures and facial expressions that show interest also help promote discussion, while negative body language and facial expressions can become a barrier.
Encouraging all students to review and discuss

At the debriefing, the teacher is responsible for helping students to review and discuss the activity. Before the debrief ends, VET students should identify lessons learned from the previous reporting period and make strategic decisions for the next stage. Therefore, teachers should:

- give time to students to reflect and learn from the experience;
- help students go through a detailed “Analysis” of the experience and their performance;
- offer and provide direction and pinpoint focus for the immediate future;
- communicate in a non-judgmental way and facilitate purposeful change.
- help students identify what learning they will be able to “Transfer” (or apply) to practice.

Tips and tricks

- begin the debriefing by introducing the team and outlining the structure of the discussions
- keep the debriefing focused and keep track of time
- make sure the conversation is not dominated by one or a few observers
- allow all who wish to comment time to speak
- reserve at least 10 minutes at the end for the final comments or recap
- refrain from making judgmental comments
- keep comments clear and focused
- maintain a respectful atmosphere
- begin comments by identifying the positive aspects of the lesson
- don’t focus on the success or failure of the lesson or on teaching style
- select key, relevant observations and avoid a “laundry list”
- don’t be a passive listener. Try to contribute to the debriefing

Conclusion

In order to manage the debriefing successfully you should start by setting the rules for the debriefing process. Other two important strategies that any teacher should consider are communicating effectively with participants and encouraging all students to review and discuss, that is, contribute to the success of the debriefing.
Answer the following questions:

1. **What are some of the main skills and qualities required by a successful debriefing?**
   
   a) the ability to recall mentally all or partial aspects of the lesson; the ability to communicate sincerely; the willingness to make judgmental comments.
   
   b) the ability to recall mentally all or partial aspects of the lesson; the ability to communicate sincerely; the willingness to be realistic; the desire to reflect on all components of performance.
   
   c) the ability to recall mentally all or partial aspects of the lesson; the ability to focus on peers’ mistakes; the willingness to be realistic.
   
   d) the ability to recall mentally all or partial aspects of the lesson; the ability to communicate sincerely; the willingness to be realistic; the desire to take control of the conversation.

   **Correct answer: b**

2. **What should a teacher not do when managing debriefing sessions?**
   
   a) Setting rules for the debriefing process
   
   b) Communicating effectively
   
   c) Encouraging all students to review and discuss
   
   d) Making judgmental comments

   **Correct answer: d**

3. **What does communicating effectively involve?**
   
   a) Sharing information and perceptions in an open and honest, positive and sincere, precise and focused, empathic, helpful and fair way.
   
   b) Taking control of the conversation.
   
   c) Being an active listener.
   
   d) Being always short and concise. Concentrating on the essentials.

   **Correct answer: a**
4. What are the main aims of any debriefing session?

a) VET students should identify lessons learned from the previous reporting period.
b) VET students should make strategic decisions for the next stage.
c) VET students should identify lessons learned from the previous reporting period and make strategic decisions for the next stage.
d) VET students should communicate effectively.

Correct answer: c
Unit 4.4. Other means of evaluation of knowledge

Why is assessment important?

Assessment and its associated feedback are essential to student learning. Well-designed assessment has numerous benefits by providing a measure of students’ progress and engaging students in the learning process. Well-designed assessment creates opportunities to develop students’ ability to evaluate themselves, to reflect on their own performance and improve it.

Using assessment that makes use of technology, (e.g. online discussion forums or electronic submission of work) can teach VET students new skills. Well-designed assessment can deter plagiarism. Well-designed assessment enables teachers to evaluate certain skills and knowledge that students acquired. Teachers should always discuss the ways of assessment with students to ensure that the aims and goals of the assessments are clear.

Types of assessment

Formative assessment

Formative assessment is a learning experience, which provides ongoing feedback and practical guidance enabling students to improve their academic performance; it helps students identify their strengths and weaknesses. Teachers use it to evaluate students’ comprehension, learning needs, and academic progress during a lesson, module or course. Formative assessment is not used for grading. Students are given an opportunity to learn before they are graded (e.g. mock exams, marked practical work, coursework and projects).

Summative assessment

Summative assessment measures achievement at a particular time and contributes to the grade that students receive. Summative assessment usually takes place after students have completed units of work or modules or at the end of each term or year. It indicates progress and achievement (usually in grades).

Peer and self-assessment

In peer and self-assessment VET students assess each other and themselves. It can encourage students to take greater responsibility for their learning; It is essential that students are instructed fully and clearly about the assessment criteria and how to mark their own and their peers’ work. Reflection is an important stage of the assessment process. Thus, students learn from their mistakes, identify their strengths and weaknesses and learn to work on their learning in order to improve it. Involving students in their assessment is a means of learning and developing, which develops skills, such as reflection, critical thinking and self-awareness and give students valuable insights into the assessment process.
How can peer and self-assessment be used?

Peer and self-assessment can be used formatively and/or summatively. Their use in formative assessment is more common: there are concerns about validity and reliability of students when they assess and give grades to their peers.

Peer assessment

Peer assessment involves VET students taking responsibility for assessing the work of their peers against established assessment criteria. Discussions about assessment criteria with students are essential in supporting ‘good’ peer assessment.

If prepared, students can provide feedback to their peers (peer review), summative grades, or a combination of the two. Thus VET students gain an opportunity to better understand assessment criteria.

Teachers can use peer assessment for assessing both individual efforts and group work. Peer assessment can be done openly, encouraging comparison and discussion, or anonymously.

Self-assessment/ Reflection

Self-assessment requires VET students to reflect on their own work and judge how well they have performed in relation to the assessment criteria. Clear assessment criteria and instructions on how to use them are very important. Self-assessment provides opportunities for students to be able to identify good (or poor) work. When this is accompanied by reflection students have to consider their own performance and to identify their strengths or weaknesses. Students can use logs or diaries, or complete feedback questionnaires. This encourages students to assess how well they’ve met the assessment criteria. When reflecting upon their work students are fully engaged in the process of making meaning. They are encouraged to compare intended with actual products, to evaluate their strategies, to analyze and draw causal relationships, and to synthesize meanings and apply their learning to new situations.

Using technology

The use of technology in supporting teaching and learning is common although the use of technology to deliver and manage assessment is not. Final summative assessment is often paper-based. However, using technology may address some of the fundamental issues of assessment (lack of diversity in assessment methods; unclear assessment criteria, etc).

Computer-assisted assessment offers a number of benefits that can enhance learning and reduce teachers’ workload:

- online assessments can be accessed by a big number of students from different locations, so that they can measure their understanding at times of their own choosing; students can choose the timing and location of assessments;

- online assessments can improve student engagement (through interactive formative assessments);

- a wide range of skills and attributes can be easily assessed (through simulations, e-portfolios and interactive games);
- greater variety and authenticity in the design of assessments;
- increased opportunities for students to act on feedback, for example by reflection in e-portfolios (students may be offered comments on their responses);
- innovative approaches based around use of creative media and online peer and self-assessment;
- accurate, timely and accessible evidence on the effectiveness of curriculum design and delivery;
- students get accurate results (some exams offer opportunities to combine human and computer marking);
- immediate expert feedback delivered online in response to answers selected by students, who can rapidly correct mistakes;
- the time saved in marking can be used in more productive ways, for example in supporting learners experiencing difficulties.

**Examples of technology enhancing assessment include:**

- Online tests for formative assessment or summative assessment with automatic feedback/answer (such as multiple choice, fill in, ordering, matching, true or false, word master (online completion exercises/ online hangman), correcting mistakes, organizing the vocabulary under the headings given, gapped text (a script from which some lines/paragraphs have been removed and students have to reconstruct the text by putting the lines in the gaps), word search (students have to find the words in the box with the definitions given), games).
- Self-assessment of project work via reflective blogs.
- Assessed contributions to online discussion boards.

**Effective assessment design** requires teachers to establish exactly what they are trying to achieve in a particular type of assessment. They may find the following *trigger* questions useful:

- Why am I assessing?
- What exactly am I trying to assess?
- How am I assessing my students?
- Who is best placed to do the assessing?
- When should I assess my students?
Assessing group work

Working in groups can provide VET students with valuable learning opportunities. It encourages them to see other people's point of view and to learn from and with one another. The ability to work collaboratively is an important life skill and is in demand by employers. If used early on in a programme, group work can also play an important social and motivational role. Problem-based learning frequently involves elements of group work and research evidence shows that this consistently results in enhanced student learning.

When using group work as a form of assessment it is important the assessment is fair, particularly if groups are made up of students with mixed abilities, experiences, academic cultures and/or motivations.

How should teachers assess group work?

Group work can be used for both formative assessment and summative assessment. When assessing summatively, teachers will need to choose whether they want to assess the product of the group work, or the process. In assessing the product (a presentation) teachers should develop assessment criteria for that type of product. Assessing the group process is more challenging: giving the same mark to all VET students within a group is often felt as unfair as individual contributions may vary.

Assessing individuals within groups: using peer and self-assessment

When considering individual's contributions to a group task the only people who know about the group contributions are the members of the group themselves. Therefore, peer and self-assessment is the most suitable form of assessment for group work. A project logbook, blog or some form of portfolio help students to show and demonstrate their contribution to the group. Peer and self-assessment can be done anonymously or by open discussion, depending on teachers’ knowledge of the students, group size and students' familiarity with group work and peer-assessment.

Tips and tricks

- Be fair
- Test what you have taught
- Let your students know the assessment criteria
- Encourage students to get involved in peer assessment
- Discuss the benefits of fair assessment with students
- Establish exactly what you are trying to achieve in a particular type of assessment
- Encourage reflection after assessment so that students will improve their work by considering the lessons they learn from the evaluation process
Conclusion

Assessment is essential to students' learning process. Well-designed assessment measures students' progress and also creates opportunities for students to evaluate themselves and improve their performance. Assessment is the engine which drives student learning (John Cowan). Well-designed assessment can encourage active learning especially when the assessment delivery is innovative and engaging.

References/Bibliography/Links

[1] AFS Intercultural Programs, Inc. 2014 Debriefing Experiential Learning. Retrieved from https://s3.amazonaws.com/wocas3/elligent.evolution.components.attachments/13/1637/00/00/00/00/00/65/07/Debriefing+Experiential+Learning+for+AFS+%26+Friends.pdf?AWSAccessKeyId=AKIAJC2S635RRR83OPQ&Expires=1526153610&Signature=GtnWEeqmgmG5P2WHJ5%2bxv0ru8eY%3d


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Evaluation Module 4.4.

Answer the following questions:

1. Why is assessment important?
   a) It provides a measure of students’ progress and engages students with their learning. Well-designed assessment creates opportunities to develop students’ ability to evaluate themselves, to reflect on their own performance and improve it.
   b) It creates opportunities to develop students’ ability to evaluate their peers.
   c) It creates opportunities to develop students’ ability to reflect on their own performance.
   d) It creates opportunities to develop students’ ability to improve their performance.

Correct answer: a

2. What is formative assessment?
   a) Formative assessment is a learning experience; it provides ongoing feedback which helps students identify their strengths and weaknesses and provide practical guidance to enable them to improve their academic performance.
   b) Formative assessment measures attainment, understanding or achievement at a particular time and contributes to the grade that students receive.
   c) Formative assessment is a learning experience.
   d) Formative assessment is a test where VET students assess each other and themselves.

Correct answer: a

3. What is summative assessment?
   a) Summative assessment is a test where VET students assess each other and themselves.
   b) Summative assessment measures attainment, understanding or achievement at a particular time and contributes to the grade that students receive.
   c) Summative assessment is a computer-assisted assessment.
   d) Summative assessment provides ongoing feedback which helps students identify their strengths and weaknesses and provide practical guidance to enable them to improve their academic performance.

Correct answer: b
4. What is essential in supporting 'good' peer assessment?

a) The type of assessments.
b) The design of assessments.
c) The location of assessments.
d) Clear assessment criteria.

Correct answer: d
Module 5. How to approach transversal topics in your class

Unit 5.1 Transversal topics with impact on a student professional development

Introduction

European schools are facing key challenges linked to people’s mobility and the impact and use of new technologies. Our world is being transformed by the digital revolution, which touches everything: for instance, the way young people learn or communicate with each other. Education has to play an important role in empowering students to become active participants in the transformation of our society. Learning should also focus on the values, attitudes and behaviours which enable individuals to learn to live together in a world characterized by unprecedented changes, diversity and pluralism. Including transversal topics in school curriculum has become a must. Topics such as inclusive education, CLIL, motivation, career orientation, and preventing ESL are also very much valued, not only for employability but also for personal fulfilment. No matter the context, transversal topics are embedded within education and offer broad perspectives on its development. “Transversal” topics transcend disciplinary and methodological boundaries and benefit from contributions from a broad range of topics.

Content

Particular attention needs to be given to developing a more inclusive education system that provides quality and equitable opportunities to students regardless of their gender, nationality or health condition. According to UNESCO, inclusive education is seen as “a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities, and reducing exclusion from education and from within education. It is not only about attaining universal access to education, but universal access to meaningful and purposeful knowledge and learning for all”. Our society needs an education system that is flexible and accommodates diversity. This means that all students should be offered equal opportunities in regular classes where the education programme caters for their individual needs and where they are accepted and supported. Schools are comprised of the people in the community. As a teacher, it’s important to understand the community your students are a part of. Inclusive education centres on the student and creates an environment where every learner feels unique. It builds on their abilities, interests and cultures and attempts at removing barriers, which might impede students to achieve their potential. All students’, their families’ and communities’ contributions are equally valued. The main focus of inclusive education is to make schools a place where all students are welcome and can participate. Inclusive education encourages all students’ participation and involvement in the classroom.
Motivation is an urge to behave or act in a way that will satisfy certain conditions, such as wishes, desires, or goals. All students have certain basic psychological needs and they are most likely to become motivated, that is engaged in the learning process when those needs are taken into consideration and met. Thus, students need to feel safely connected to their peers in their environment. They will feel motivated to learn when they make a contribution to their group and as a result are valued and appreciated. In addition, when students have been successful with their task, they are more likely to be motivated to learn in the future as success breeds success. What’s more, authentic, personally meaningful, and relevant work is more likely to promote students’ engagement. Teachers must be attentive not only to teaching methods and the formal curriculum but also to the larger context of the school culture and disciplinary procedures; grouping practices; relationships between students, teachers, administrators, and parents; the physical structure of the school; and assessment strategies in order to maximize student engagement.

Mobility across the European Union required high levels of language competence in designated languages, as these languages were not only the languages of everyday conversation but also the languages of work. Teachers had to adapt existing language teaching approaches so as to provide a wide range of students with high levels of language competence in different fields by forging relationships across disciplines, namely linguistic and non-linguistic. The result is a new method, Content and Language Integrated Learning (CLIL), which refers to teaching a non-language subject through the medium of a foreign language (L2). CLIL is a dual focus methodology used for the learning and teaching of content and language with the objective of promoting both content and language mastery. All school subjects can be taught through foreign languages: history, civic education, physical education, biology, geography, chemistry, art or mathematics.

Career orientation is another topic underpinning the learning process. Understanding students’ personal aptitudes and characteristics and helping them to identify these aspects must be considered when students attempt at choosing their career path. A teacher needs to understand what motivates students, what social-economic background they bring to the classroom, as well as their personality traits, values, abilities and interests.

School dropout is both an individual and a social problem. What schools need is a clear and consistent disciplinary system, which should be fairly but sympathetically applied as sometimes dropping out of school is due to circumstances beyond students’ control (illness, family problems). A solid system for the registration of absenteeism (authorised or unauthorised) is essential in order to guarantee that absence is recognised and taken care of immediately. Schools have to implement and develop a genuine school culture based on the design of school as a “place to live”, which supports students’ emotional attachment to school, gives support and encouragement to students, parents and teachers.
Tips and tricks

Enthusiasm breeds enthusiasm. **Be an enthusiastic teacher.**

**Satisfy students’ needs.**

Use **positive emotions** to enhance learning and motivation.

**Encourage students.**

**Get to know students very well.**

**Capitalise on students’ interests and skills.**

**Engage students** in a wide range of activities.

**Provide opportunities** for the students to get to know one another.

Establish a **pleasant classroom environment** that encourages students to ask questions and become actively involved in their learning.

**Concentrate on individual students, not syndromes.**

**Give positives** before negatives.

Provide opportunities for success to **build self-esteem.**

Effectively communicate and **collaborate with families, students and colleagues.**

Conclusions

By including transversal topics in school culture teachers can make the most of Europe’s human capital, which will ultimately boost employability, competitiveness and growth in Europe. They may be used as significant means to ensure that students are engaged in the education system and can reach their full potential.

Reference


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www.e-classes.eu

Evaluation Module 5.1.
Answer the following questions:

1. What are transversal topics?
   a) They are topics which focus on one subject.
   b) They are topics which transcend disciplinary and methodological boundaries and benefit from contributions from a broad range of topics.
   c) They are topics which focus on discipline.
   d) They are topics which focus on European challenges.

Correct answer: b

2. Which is not a transversal topic?
   a) Inclusive education.
   b) Mathematics.
   c) CLIL.
   d) Motivation.

Correct answer: b

3. Why is it important to introduce transversal topics in the educational system?
   a) They improve students’ mother tongue skills.
   b) They improve students’ relationships with their family.
   c) They stimulate students’ curiosity.
   d) They improve students’ chances of employability and personal fulfilment.

Correct answer: d
4. What is inclusive education?

a) Inclusive education welcomes all students who are encouraged to learn, contribute and participate in all aspects of the life of the school.

b) Inclusive education exclusively focuses on attaining universal access to education.

c) Inclusive education provides a wide range of students with high levels of language competence in different fields.

d) Inclusive education encourages all students to learn by giving them plenty of rich rewards.

Correct answer: a
Motivation is an urge to behave or act in a way that will satisfy certain conditions, such as wishes, desires, or goals. Motivation may come from personal interest, out of necessity (work or survival).

Psychologists believe that motivation is rooted in a basic ‘impulse to optimize well-being, minimize physical pain, and maximize pleasure’.

There are two different types of motivation: intrinsic and extrinsic.

- **Intrinsic motivation**: it occurs when you are internally motivated to do something because you believe that it is important to you or because you enjoy doing it. Students stimulated by intrinsic motivation are happy and enjoy doing their homework because they feel it challenging. Intrinsic motivation may fade away when students learn subjects that have no interest to them. Making abstract material more concrete and putting it in context may improve intrinsic motivation.

- **Extrinsic motivation**: it occurs when a student wants to study or work because of external factors, like punishment or reward. However, punishment is harmful and rewards may create dependency. That is why it is advisable to give fewer and fewer rewards while building intrinsic motivation.

**Why is it important to keep students motivated to learn?**

- Motivation improves determination.
- Motivation improves initiative.
- Motivation improves cognitive processing skills.
- Motivation improves overall performance.

**How can you improve motivation in the classroom?**

**Make learning visual, auditory or kinesthetic.** Teachers should address all learning styles through a wide range of activities. Auditory students learn by listening and speaking. These students enjoy talking and interviewing. They enjoy oral reading, choral reading, and listening to recorded books. They learn best by interviewing, debating, participating on a panel, giving oral reports and participating in oral discussions of written material.

**Visual students** have a good visual memory and prefer written instructions. They learn by observing and enjoy: computer graphics, maps, posters, diagrams, graphs, charts, cartoons, graphic organizers, or texts with a lot of pictures.

**Tactile students** learn best by touching and learn best through manipulatives. They learn best by drawing, playing board games, making models, making dioramas and following instructions to make something.

**Kinesthetic students** also learn by touching or manipulating objects. They need to involve their whole body in learning (total physical response, acting out). These students learn best by: playing games that
involve their whole body, making models, movement activities, following instructions to make something or setting up experiments.

Global students are spontaneous and intuitive. They highly appreciate attractive materials introducing the information they have to learn. Cooperative learning strategies work well with them. Global students learn best through: choral reading, computer programs, recorded books, games, story writing, or group activities.

Analytic students plan and organize their work. They focus on details and are logical. They prefer to work individually on activity sheets. They learn best when: objectives are clear, information is presented in sequential steps and lessons are well structured.

- **Teach inductively.** Presenting conclusions first and then providing examples may deprived students of the joy of discovery. By beginning with the examples, evidence, stories, and arriving at conclusions later, you can maintain interest and increase motivation, as well as teach the skills of analysis and synthesis. Providing students with examples to analyze and fewer problems to solve may increase learning.

- **Explain to students** why it is important to study that lesson. Students can often lose motivation if they don’t know the practical reason why they study that lesson or how that lesson relates to their life.

- **Be creative.** Avoid monotony. Use games and discussions in your lessons; engage students in debates. Use colourful visual aids to effectively illustrate a topic or theme. Create a warm, stimulating environment.

- **Use a variety of interactive activities**, which directly engage students in the material and the lesson.

- **Teach by discovery.** Students find it satisfying to go through a problem and discover its underlying principle on their own.

- **Organise cooperative learning** activities as they provide positive social pressure.

- **Set realistic performance goals** and help students achieve them. Design tasks that are appropriately challenging in terms of their knowledge and interest.

- **Use testing and grading** as a means of showing what students have mastered, not what they have not. Offer nonjudgmental feedback on students’ work, highlight opportunities to improve and look for ways to stimulate progress.

- **Draw connections to real life.** You can engage your students if you explain to them how the subject relates to them. If you’re teaching algebra, tell them how it is used practically in engineering.

- **Establish good rapport with your students.** Research has shown that the interaction between the teacher and student is more important than educational materials or class size.

- **Offer Options.** Give them options when they start an assignment and they will be more willing to do it. By giving students choices, we send a message that we respect their decisions.
Be positive and excited about learning. Be empathetic and understanding with students. Connect with them so that they know that you care about them and their performance. Stay away from embarrassing or criticizing them if they have problems with learning.

Value their effort. Value their effort and hard work rather than the final product.

Give students as much control over their learning as possible. For example, let students choose paper and project topics that interest them. Use a variety of assessment (tests, papers, projects, presentations, etc.), which gives students more control over how they show their understanding to you.

Tips and tricks

**Explain.** There are cases when students do not understand what to do or why they should do it. Spend more time explaining why you teach what you do, and why the topic or activity is important and worthwhile.

**Reward.** Students who do not yet have powerful intrinsic motivation to learn can be helped by extrinsic motivators in the form of rewards. The rewards should be small. Books, certificates, or verbal praise can encourage students to perform at higher levels. Extrinsic motivators can, over a brief period of time, produce intrinsic motivation. Rewards for good work produce good feelings of accomplishment and recognition.

**Care.** Students respond with interest and motivation to teachers who appear to be human and caring. Sharing stories of problems and mistakes teachers made, either as children or even recently personalizes the student/teacher relationship and helps students see teachers as approachable human beings and not as distant authority figures.

**Have students participate.** One of the major keys to motivation is the active involvement of students in their own learning by: getting students involved in debates and discussions, deciding what to do and the best way to do it, doing problem solving exercises, helping the teacher, working with each other. A biology lesson, for example, would be more effective walking in the botanical gardens than looking at pictures.

**Have students help you.** Involve students in helping you (research bibliographies or biographies of important persons, rearrange chairs, pass out papers or exams, computer etc.); this will boost students’ self esteem and consequently increase their motivation. Older students will also see themselves contributing to the learning process.

**Enthusiasm breeds enthusiasm.** One of the best ways to get your students motivated is to share your enthusiasm. When you’re excited about teaching, they’ll be much more excited about learning.

**Satisfy students’ needs.** For instance, many students need to have fun in their activities and that is why you have to design an educational activity that meets that need.

**Use positive emotions** to enhance learning and motivation. Lasting memory is connected with the emotional state of the learner. Therefore, if you make your lessons memorable and fun your students will retain what you have taught them longer.
Encourage students. Students are more likely to be enthusiastic about learning if they feel their work is recognized and appreciated. You should always encourage your students and make them feel important.

Become a role model for student interest. Deliver your presentations with energy and enthusiasm, which will motivate your students. Show that you are interested in the material.

Get to know your students. Display strong interest in students’ learning and faith in their abilities.

Be an empathetic teacher. An empathetic teacher doesn’t only help protect the student’s image of themselves as student, but it also helps prevent social exclusion by classmates.

Conclusion

Motivation plays an important role in learning. It is in our power to use it and stimulate students to learn. It is great to motivate students, but it is even better if they learn how to motivate themselves. We should help them think of reasons why they should want to learn what they’re learning. Is it going to help them in the real world? Is it going to help them when they go to college? In life?

Reference

https://elearnmag.acm.org/featured.cfm?aid=1373288
http://www.everythingesl.net/inservices/learningstyle.php
https://www.virtualsalt.com/motivate.htm
https://virtualsalt.com/antiplag.htm
https://www.edutopia.org/blog/20-tips-create-safe-learning-environment-rebecca-alber
Evaluation Modules 5.2.

Answer the following questions:

1. What is motivation?
   
a) Motivation is an urge to act in a way that will satisfy certain wishes.
   b) Motivation is impulse to optimize well-being.
   c) Motivation is an urge to behave in order to minimize pain.
   d) Motivation is an urge to behave or act in a way that will satisfy certain conditions, such as wishes, desires, or goals.

   Correct answer: d

2. What is the difference between intrinsic and extrinsic motivation?
   
a) Intrinsic motivation stimulates you to do something because you believe that it is important to you or because you enjoy doing it while extrinsic motivation stimulates you to study or work because of external factors, like punishment or reward.
   b) Intrinsic motivation stimulates you to study or work because of external factors, like punishment or reward while extrinsic motivation stimulates you to do something because you believe that it is important to you or because you enjoy doing it.
   c) Intrinsic motivation stimulates you to study or work because you consider the punishment or reward you get while extrinsic motivation stimulates you to do something because you enjoy doing it.
   d) Intrinsic motivation stimulates you to study or work because you enjoy doing it, while extrinsic motivation stimulates you to do something because you believe that it is important to you.

   Correct answer: a
3. Why is it important to keep students motivated to learn?

   a) It important to keep students motivated to learn because motivation improves students’ overall performance, determination, initiative and cognitive processing skills.
   
   b) It important to keep students motivated to learn because motivation improves students’ wellbeing.
   
   c) It important to keep students motivated to learn because motivation improves students’ relationships with their teachers and family.
   
   d) It important to keep students motivated to learn because motivation improves students’ self-esteem.

Correct answer: c

4. How can we improve motivation in the classroom?

   a) One way to improve students’ motivation is to encourage them and display strong interest in students’ learning and faith in their abilities.
   
   b) One way to improve students’ motivation is to criticize them if they don’t understand and try to explain the lesson again.
   
   c) One way to improve students’ motivation is to talk about their strengths and highlight their weaknesses.
   
   d) One way to improve students’ motivation is to encourage them and give them plenty of rich rewards.

Correct answer: b
Unit 5.3 VET orientation

Introduction

Understanding students’ personal aptitudes and characteristics and helping them to identify these aspects must be considered when students attempt at choosing their career path. A teacher needs to understand what motivates students, what social-economic background they bring to the classroom, as well as their personality traits, values, abilities and interests. This process of getting to know students is often difficult and challenging. Brianne Vigen (EDSE 3204) point out the following strategies that are effective and should be used in getting to know students:

- Talking to students.
- Observing students.
- Tracking their learning and other activities achievements to see their progress.
- Giving students questionnaires to identify their potential, to assess their existing skills, to identify the main areas of necessary improvement, to deal with the pupils at risk of early school leaving and motivate them to continue their educational path at school.
- Getting students involved in extracurricular activities.
- Having a bulletin board in the classroom that features the student of the week (each student feels special for the week/get to know students’ interests and needs.
- Using icebreaker games. It helps to know students, to let them get to know each other, get involved into the activities and feel more comfortable in the classroom.

School staff plays the most important role in developing the provision of career education and guidance at school. Most schools set up a team for career education and guidance made up of different subject teachers and carrier guidance counselors. All of them have their different roles in the process of career education and guidance and at the same time they work in close cooperation with each other, collaborate with parents, representatives of local communities and the world of work.

The team develops a strategic plan for implementing and monitoring career education and guidance, find strategies to involve parents and other community representatives in planning and delivering career education and guidance, support students with special needs personalize guidance for each student and deal with students at risk of early school leaving.

Teachers are usually responsible for the identification of students’ strengths and weaknesses, emotional and motivational states, encouragement, and support during the learning process. Teachers have to be able to understand students as personalities, to clarify what feelings and experiences students bring from their families and social environment, to cooperate with other staff members counselors, psychologists in identifying students’ interests, and aptitudes.

Counselors evaluate students’ abilities and interests through aptitude assessments, interviews, and individual planning; identify issues that impact school performance; help students to understand and
overcome social or behavioural problems through classroom guidance lessons and counseling; help students create plans to achieve academic and career goals; collaborate with teachers, administrators, representatives of the labour market and parents to help students succeed.

Cooperation is very important. They help students to develop a positive attitude towards school and education, identify and deal with behaviour and learning difficulties, to unveil their interests and attitudes, to plan and implement personalized educational and career plans.

The career guidance process

The following activities generally take place in the career guidance process:

- **Initiation**: beginning of the counseling relationship and establishing what the need is.
- **Exploration**: collecting and studying information.
- **Decision making**: narrowing down the choices and ultimately choosing a career path.
- **Preparation**: developing the plan for reaching the chosen goal.

Preparing students for successful integration into the labour market. It is important for the students to have a justified psychological portrait of themselves at the end of the second phase of basic education (8th grade), which includes abilities (intellect types), aptitudes, skills, personal features, values, interests and competences.

Students have to find answers to the questions: which school to attend; what subjects to study; how long to study at school; what exams to take; what skills to develop during non-formal education programmes and extracurricular activities; which educational and career path to choose after school. Students need support to identify their potential and clarify their future visions and goals. They also need a wide range of information about educational institutions, enrolment requirements, studies costs, graduates employability, institution status (college, university), financial and social support possibilities, the necessary skills and job profiles needed by the labour market in order to make decisions about their further education and career pathways.

As these decisions are of high importance for students, they need qualified counseling. Teachers and counselors help them to collect and analyze information related to the education institutions and labour market. It is very important to foster pupils’ autonomy in decision making about their education path choices. Teacher and counselors are only facilitators in this process.
Collaboration with the representatives of the world of work is extremely valuable in helping students to make decisions for their future, as it brings real life cases. They should listen to students, respect their choices and provide helpful, encouraging, and constructive feedback. School has to prepare students for successful integration into the labour market and to enable them for independent development of their career path according to their personal needs and to respond flexibly to ongoing changes in the world of work. The students who know their personal strengths and weaknesses, their abilities, interests, values and personality features can proactively and independently organize their learning process according to their career vision and plan: choose a learning course, modules, subjects, extracurricular activities, take advantage from volunteering and social opportunities. Researches show that students who are able to understand the connections between school and future career, have clear career goals, will be more actively engaged in their academic tasks and more likely will succeed in high school.

**How to bridge the gap between school and work**

Another aspect that is worth considering is the gap between school and work. Many employers complain that the knowledge and skills of high schools graduates do not suit labour market demands. Taking into account quite high rates of youth unemployment, a need to prepare students for the world of work arises. There are several ways to facilitate students’ transition from school to the world of work:

- Students have to be encouraged to apply what they have studied at school and transfer their knowledge to real life situations.
- Discussions with entrepreneurs can help students to get know better different professions, skills and qualifications requirements.
- Visits to enterprises or internships can help students get insights into a real working day with its duties and responsibilities. Internships familiarize students with tasks and routines of a specific workplace.
- Volunteering activities help students to gain valuable general competences such as responsibility, time management, communication, ethics, team working etc. Volunteering can familiarize them with work and give them a valuable opportunity to gain work experience.

**Tips and tricks**

Get to know students very well.
Capitalise on students’ interests and skills.

Engage students in a wide range of activities to help them develop insights into the world of work and their own occupational orientations.

Build your relationship with your student on trust and respect.

Try to understand your students and to address their interests, deficiencies and misconceptions.

Encourage trust and acceptance to create psychologically safe atmosphere in the classroom which provides the security students need, enhances motivation to learn and decreases the risk of abandoning school.

Collaborate with your colleagues, parents and community.

Provide opportunities for the students to get to know one another.

Conclusion

The key to fulfilment is to recognize and make the most of our “core strengths.” True fulfilment comes from building our lives on our core strengths, the ones we most enjoy using. That is why we, teachers, have to help our students to identify what they are best at, and take advantage of these skills. Students must be involved in activities meant to enable them to discover themselves and then to verify whether their chosen career corresponds to their needs and interests. A variety of types of ‘work experience’, ‘work tasters’, ‘work shadowing’ and ‘work visit’ initiatives may be organized to help students develop insights into the world of work and their own occupational orientations. Meetings with the representatives of business companies, visits to the enterprises, discussions and interviews with successful entrepreneurs, employees and successful people also help to highlight the importance of completing school education for being successful at work and in life.

Reference

https://schoolandwork.pixel-online.org

Carol Dweck, How to Help Every Child Fulfil Their Potential, https://www.youtube.com/watch?v=PVhUdhZxbGI

Jane Collingwood, Capitalize on Your Core Strengths, https://psychcentral.com/lib/capitalize-on-your-core-strengths
Evaluation Module 5.3.

Answer to the following questions:

1. Why is understanding students’ personal aptitudes and characteristics important to the teacher in students VET orientation?

   a) A teacher needs to understand students’ personality traits, values, abilities and interests in order to help them improve their school performance.
   b) A teacher needs to understand students’ personality traits, values, abilities and interests in order to help them get better grades at school.
   c) A teacher needs to understand students’ personality traits, values, abilities and interests in order to help them identify their interests and needs.
   d) A teacher needs to understand students’ personality traits, values, abilities and interests in order to identify those aspects that must be considered to personalize students’ education pathway towards the career and lifestyle that might suit them the best in the future.

   Correct answer: d

2. What are teachers’ roles and counsellors’ roles in students’ VET orientation?

   a) Teachers evaluate students’ abilities and interests through aptitude assessments, interviews, and individual planning. Counsellors are usually responsible for the identification of students’ strengths and weaknesses, emotional and motivational states, encouragement, and support during the learning process.
   b) Teachers are usually responsible for the identification of students’ strengths and weaknesses, emotional and motivational states, encouragement, and support during the learning process. Counsellors evaluate students’ abilities and interests through aptitude assessments, interviews, and individual planning.
   c) Counsellors are usually responsible for the identification of students’ strengths and weaknesses. Teachers are usually responsible for students’ emotional and motivational states, encouragement, and support during the learning process.
   d) Teachers are usually responsible for giving student instruction and support during the learning process. Counsellors administer aptitude assessments and tests.

   Correct answer: b
3. How does school develop the provision of career education and guidance?

   a) Most schools set up a team made up of parents and carrier guidance counsellors. The team develops a strategic plan for implementing and monitoring career education and guidance, find strategies to involve parents and other community representatives in planning and delivering career education and guidance and support students.

   b) Most schools set up a team made up of carrier guidance counsellors. The team develops a strategic plan for implementing and monitoring career education and guidance, find strategies to involve parents and other community representatives in planning and delivering career education and guidance and support students.

   c) Most schools set up a team made up of different subject teachers and carrier guidance counsellors. The team develops a strategic plan for implementing and monitoring career education and guidance, find strategies to involve parents and other community representatives in planning and delivering career education and guidance and support students.

   d) Most schools set up a team made up of different subject teachers. The team develops a strategic plan for implementing and monitoring career education and guidance, find strategies to involve parents and other community representatives in planning and delivering career education and guidance and support students.

Correct answer: c

4. What are the main activities that generally take place in the career guidance process?

   a) The main activities that generally take place in the career guidance process are: initiation (beginning of the counselling relationship and establishing the needs), exploration (collecting and studying information), decision making (developing the plan for reaching the chosen goal) and preparation (narrowing down the choices and ultimately choosing a career path).

   b) The main activities that generally take place in the career guidance process are: initiation (beginning of the counselling relationship and establishing the needs), decision making (narrowing down the choices and ultimately choosing a career path) and preparation (developing the plan for reaching the chosen goal).

   c) The main activities that generally take place in the career guidance process are: exploration (collecting and studying information), decision making (narrowing down the choices and ultimately choosing a career path) and preparation (developing the plan for reaching the chosen goal).

   d) The main activities that generally take place in the career guidance process are: initiation (beginning of the counselling relationship and establishing the needs), exploration (collecting and studying information), decision making (narrowing down the choices and ultimately choosing a career path) and preparation (developing the plan for reaching the chosen goal).

Correct answer: d
Unit 5.4 Foreign languages

Introduction

Unlike foreign languages classes whose focus is on language learning, Content and Language Integrated Learning (CLIL) refers to teaching a non-language subject through the medium of a foreign language (L2). CLIL establishes a balance between content and language learning, where the content is developed through the foreign language as much as the foreign language is. CLIL offers opportunities for students to use languages effectively while learning them. All school subjects can be taught through foreign languages: history, civic education, physical education, biology, geography, chemistry, art or mathematics.

According to the 4Cs curriculum (Coyle 1999), a successful CLIL lesson should combine the following elements:

- Content: knowledge or skills related to specific elements in the unit/curriculum.
- Communication: using language to learn other subjects while learning to use language.
- Cognition: developing thinking skills which link concept formation, understanding and language.
- Culture: exposure to diverse perspectives, which deepen awareness of cultures.

In a CLIL lesson, all four language skills are combined:

- Listening is a normal input activity.
- Reading is the major source of input.
- Speaking focuses on fluency.
- Writing focuses on lexical activities which recycle grammar.

CLIL principles

- content is taught and learnt in a language which is not students’ mother tongue.
- language and subject area content are learnt in combination.
- language is used as a tool to develop new learning from a subject area or theme.
- the foreign language becomes a means through which content is conveyed.
- students acquire the language in meaningful situations; language is learned in a context.
- language structures are introduced because they are necessary to the understanding of the content.
- language is integrated into the broad curriculum.
- thinking and cognitive skills are developed together with language skills.
- language is functional and dictated by the context of the subject.
- language is approached lexically rather than grammatically.
- language structures are not introduced gradually.
- language is seen in real-life situations in which students can acquire the language.
- fluency is more important than accuracy and errors are a natural part of language learning.
- learners develop fluency in the language by using it to communicate for a variety of purposes.

Lesson framework

A CLIL lesson often follows a four-stage framework:

Processing the text. Texts are accompanied by illustrations so that students can visualise and understand what they are reading by associating images with the passages of the text. When dealing with a foreign language text, students also need structural markers which help them decode the content. These markers may be linguistic (titles, headings, sub-headings) and/or diagrammatic.

Identification and organisation of knowledge. Texts are often represented in diagrams (maps/graphs/charts) and help students classify and structure the information in a text, which facilitate learning: students can focus on both language development and core content knowledge.

Language identification. Students are expected to be able to present the text by using their own words. Thus, the teacher should highlight useful language in the text and classify it according to function (introducing, concluding, defining, analysing, classifying, evaluating, comparing contrasting, expressing opinions and asking for opinions, etc).

Tasks for students. There is little difference in terms of tasks between a CLIL lesson and a foreign language lesson. Students can practice all skills in a CLIL lesson. A variety of tasks should be provided, taking into account the learning purpose and learners’ styles and preferences. There are listening activities such as:

- Listen and label a diagram, picture, map, chart etc.
- Listen and fill in a table, diagram, chart, etc.
- Listen and label the stages of a process.
- Listen and make notes on specific information (dates, times)
- Listen and identify location, speakers, places etc.
- Listen and fill in the gaps in a text
- Listen and reorder information
Typical speaking activities include:

- Information gap activities
- Search: ‘things you know’, ‘things you want to know’, ‘things you do not know’
- Word guessing games
- Class surveys
- Interviews
- Matching questions and answers, terms and definitions, halves of sentences
- Quizzes

**Benefits**

The benefits of CLIL may be seen in terms of cultural awareness, globalisation, language competence, preparation for both study and work, and increased motivation.

Students practice study skills (how to analyse a text, use graphic organizers). By teaching study skills, teachers will give students an important tool that they can use throughout their life. For instance, students are taught how to develop and use the following graphic organizers:

- outlines for summarizing, for making predictions;
- time lines for organizing and sequencing events chronologically, for comparing events in different settings (e.g., states, countries);
- flow charts for showing progression and influences on an outcome, for showing cause and effect;
- mapping for examining movement and spatial relations;
- graphs and charts for organizing and comparing data; and Venn Diagrams for comparing and contrasting.

Students focus on why languages are used. Languages are no longer a subject in the curriculum but a useful means of communication.

Some students find it difficult to learn foreign languages while they are good at other subjects in school, e.g. science. CLIL lessons will appeal to them and they will benefit enormously.

**Tips and tricks**

Choose interesting content relevant to students’ other studies (students may be more motivated to get involved in CLIL lessons than in language classes).

Adapt learning level while preserving authenticity.

Use books/texts with illustrations. Pictures help students understand the text.

Use scaffolding techniques: Break down the lesson into small pieces. It doesn’t matter how many times you have to break down and simplify a lesson.
Put language acquisition before language learning. Fluency before accuracy.

Find the right content-language ratio.

Pre-teach vocabulary before the lesson; if you’re teaching about world seas, you could open with a sea-related vocabulary session.

Connect the new lesson to what students already know.

**Conclusion**

CLIL aims to guide language processing and support language production in the same way as ELT by teaching strategies for reading and listening and structures and lexis for spoken or written language. What is different is that the language teacher is also the subject teacher, or that the subject teacher is also able to exploit opportunities for developing language skills. This is the essence of the CLIL issue. The ideal CLIL class would be based on a team of language teachers and science teachers, who work together. They choose the topic of the lesson, identify the linguistic units/structures students need to know in order to communicate, what thinking skills are necessary as well as the cultural element introduced by the lesson. Sometimes CLIL lessons come as revisions of previously learned materials. The students first get familiarized with the texts or the video, which, for example, presents a process. The teacher support students linguistically by providing scaffolding support, which allows students to concentrate on the concept and engage in communication. The teachers and students identify the main language functions and structures in the text such as: introducing, concluding, defining, analysing, classifying, evaluating, comparing contrasting, expressing opinions and asking for opinions, etc. Then students are allotted time to practice the structures, which they later use when doing project work in their group.

**Reference**


Steve Darn, CLIL: What It Is, and Why Language Teachers Will Find It Delightful, [https://www.fluentu.com/blog/educator/what-is-clil/](https://www.fluentu.com/blog/educator/what-is-clil/)


Elisabeth Wielander, Something to talk about: Integrating content and language study in higher education, [https://www.unifg.it/sites/default/files/allegatiparagrafo/22-01-2014/wielander_what_is_clil-clil_at_aston_university.pdf](https://www.unifg.it/sites/default/files/allegatiparagrafo/22-01-2014/wielander_what_is_clil-clil_at_aston_university.pdf)
Evaluation Module 5.4.

Answer to the following questions:

1. **What is the difference between foreign languages classes and CLIL classes?**
   
   a) The main focus of foreign languages classes is vocabulary and grammar, whereas CLIL classes focus on communication.
   
   b) Foreign languages classes focus on language learning, whereas CLIL classes refer to teaching a non-language subject through the medium of a foreign language.
   
   c) Foreign languages classes focus on teaching a non-language subject through the medium of a foreign language, whereas CLIL classes refer language learning.
   
   d) Foreign languages classes encourage the development of all skills, whereas CLIL classes mainly centre on listening.

   **Correct answer: b**

2. **What school subjects can be taught through CLIL?**
   
   a) All school subjects can be taught through foreign languages: history, civic education, physical education, biology, geography, chemistry, art or mathematics.
   
   b) Only science subjects can be taught through foreign languages.
   
   c) Only art subjects can be taught through foreign languages.
   
   d) All school subjects can be taught through foreign languages except maths.

   **Correct answer: a**

3. **How are language structures introduced in a CLIL lesson?**
   
   a) In a CLIL lesson language structures are introduced in the same way as in any foreign language classes.
   
   b) In a CLIL lesson language structures are introduced gradually.
   
   c) Language structures are not introduced or practiced in a CLIL lesson.
   
   d) There is no gradual progression in introducing language structures; they are introduced because they are necessary to the understanding of the content.

   **Correct answer: d**
4. What are the language skills CLIL encourages?

a) CLIL encourages listening.
b) Students can practice all skills in a CLIL lesson.
c) Students can practice all skills in a CLIL lesson, except writing.
d) CLIL encourages reading.

Correct answer: b
Unit 5.5. Inclusive education

Introduction

Inclusive education centres on the student and creates an environment where every learner feels unique. It builds on their abilities, interests and cultures and attempts at removing barriers, which might impede students to achieve their potential. All students’, their families’ and communities’ contributions are equally valued. The main focus of inclusive education is to make schools a place where all students are welcome and can participate.

Inclusive education encourages all students’ participation and involvement in the classroom by:

- presenting the content explicitly from multiple perspectives and varied experiences of a range of groups;
- using a variety of teaching methods in order to facilitate the academic achievement of all students.

- creating and sustaining an environment in which everyone feels safe, supported, and encouraged to express their views and concerns.

- finding ways to develop friendships, relationships and mutual respect between all students, and between students and teachers in the school.

Principles

Teaching all students by using a range of techniques which appeal to all learning styles

Students learn in different ways: they have different learning styles teachers should take into consideration when teaching. For instance, a teacher can use several approaches (visual, auditory, group work) to make the information more interesting, accessible and comprehensible to a bigger number of students when presenting it.

Exploring Multiple Identities

Students in any educational settings represent a wide range of social and cultural identities. Despite their multiple identities, school often subsumes these diverse identities into one label. Teachers should help students raise their confidence, identify and define their identity, which supports their learning. Students should learn how to feel comfortable with themselves and also with those who are different.

Choosing Appropriate Materials

Teachers should choose appropriate books and materials and read them before using them in class so that these reflect accurate images of diverse people without any potential to display some stereotypes.
Preventing Prejudice

Teachers should address stereotypes and prevent them from escalating into feelings of prejudice and bias. The best way to raise students’ awareness about this is by discussing students’ own stereotypes in large and small groups.

Adapting and Integrating Lessons Appropriately

Educators need to be flexible in the adaptation of the curriculum, which should be tailored according to students’ needs.

Promoting Social Justice

Teachers should initiate talks with students about issues of fairness, and of justice or injustice in terms of equality for all.

Teaching and Learning about Cultures and Religions

Students should learn about the similarities and differences related to other cultures and religions in a positive and comfortable manner. One way to start is to help students learn about the cultural and religious differences among their peers.

Strategies

Valuing what each student brings to the classroom: students’ culture, interests, experiences and needs must be included in class teaching and learning.

Establishing a caring, supportive, and respectful class environment: students feel encouraged to learn and there is tolerance for error; they have time to practice, respond and get feedback; they can undo previous responses and can monitor their own progress.

Planning learning where everyone can participate and achieve by addressing all learning styles and promoting pair and group work and projects. Providing options in representation/engagement/expression is essential.

Creating flexible learning environments that students can personalise to suit their needs: use of team-teaching, small groups and trans-disciplinary topics.

Taking a community approach to supporting learning and well-being. Inclusive values are developed through a student’s lived experiences and their exposure to other cultures and world-views.

Reasons for using inclusive education in VET schools

Studies show that inclusion is beneficial for all students because:

Inclusive education targets all students and takes into consideration their learning styles and needs. Information is made accessible, interesting and comprehensible through a wide range of teaching techniques and approaches. Thus, differentiated instruction relies on the fact that all students learn
differently. Teachers get students into pairs or small groups, where teaching can be tailored to the way each student learns best.

Teachers may use multisensory instruction. The use of sight, touch, hearing and movement can make it easier to understand abstract concepts. In math, teachers may use visual aids (schedules, posters, number lines, charts, diagrams, graphic organizers) and realia (objects from real life used in the classroom) to improve students' understanding of real life situations. Cubes, pyramids or cones can be useful to help children to learn new concepts. Realia are also used to connect learners with the key concepts by allowing tactile and multidimensional connection between learned material and the object of the lesson. A language teacher often uses realia to strengthen students' associations between words for common objects and the objects themselves. Technology has begun to impact the use of realia by adding the virtual realia option, which allows inside details otherwise difficult to acquire or get to (such as the workings of living organs or machinery, such as the cockpit of an airplane).

Supportive teaching strategies

In an inclusive classroom, teachers may integrate special support in the instruction, which can help all students make progress. Kinesthetic students may be given opportunities to move around (pair and group work, projects, surveys, interviews run by students or socializing activities). Teachers may put positive behavioral interventions and supports in place. These strategies are helpful for all.

Reduced stigma

Learners are diverse in inclusive classrooms. Teachers should encourage students to talk about how they learn; thus students will find out that everyone learns in their own way, which is natural; they will also find out that they have more in common with other students than they thought. This can help to reduce public disgrace for students with learning and attention issues. It can also help them to build and maintain friendships.

Effective use of resources

An inclusion class will make the best use of all resources by including them in instruction naturally. Thus instead of pulling students out of the class for speech therapy or for other specialized instruction an inclusion class will bring speech therapists, reading specialists and other service providers into the classroom. These professionals can provide information and suggestions so that all students benefit.

Tips and tricks

Know your students (interests, hobbies, needs). Provide opportunities for the students to get to know one another.

Establish a pleasant classroom environment that encourages students to ask questions and become actively involved in their learning.

Concentrate on individual students, not syndromes.

Give positives before negatives.

Provide opportunities for success to build self-esteem.
Relate learning to students’ lives. Motivate students to learn by helping them connect with course materials.

Encourage multiple answers or perspectives to questions.

Proceed from the simple to the complex.

Use a step-by-step approach, teaching in small bites, with a lot of practice and repetition.

Reinforce abstract concepts with concrete examples, such as looking at a map or walking around a neighborhood to read street signs.

Incorporate senses into instruction: visual, auditory, and kinesthetic ones.

Increase students’ self-awareness of progress.

Effectively communicate and collaborate with families, students and colleagues.

Vary types of instruction and assessment, with multiple intelligences and cooperative learning.

Allow for productive risk and failure within class. Make it known that this is part of the learning process.

Conclusions

Inclusive education provides flexible approaches to instruction that can be adapted to students’ individual needs. It creates more flexible environments that support all learners, where barriers to learning are minimized. An inclusive environment is possible when:

- Everyone is made to feel welcome.
- Students help each other.
- Staff collaborates with each other.
- Staff and students treat one another with respect.
- There is a partnership between staff and parents.
- All local communities are involved in the school.
E-Classes - Flip your classes through multimedia enriched apprenticeship simulations and develop e-skills for VET teachers and students to enhance youth employability
Ref.no. 2017-1-RO01-KA202-037344
www.e-classes.eu

Reference

https://www.tandfonline.com/doi/full/10.1080/2331186X.2017.1304015
http://www.csie.org.uk/resources/inclusion-index-explained.shtml

Kirstin Kelley, 50 Tips and Tricks to Facilitating a More Inclusive Classroom,
https://www.weareteachers.com/tips-tricks-inclusive-classroom/
https://www.friendshipcircle.org/blog/2014/02/05/10-examples-of-inclusion-for-those-who-need-to-see-it-to-believe-it
https://www.friendshipcircle.org/blog/2014/02/21/10-items-that-can-make-your-classroom-more-inclusive/
Evaluation Module 5.5

Answer the following questions:

1. What is the main focus of inclusive education?
   a) The main focus of inclusive education is to find ways to develop friendships.
   b) The main focus of inclusive education is to make schools a place where all students are welcome, can participate and feel that their contribution is valued.
   c) The main focus of inclusive education is to create flexible learning environments.
   d) The main focus of inclusive education is to relate learning to students’ lives.

Correct answer: b

2. How does inclusive education encourage all students’ participation and involvement in the classroom?
   a) Inclusive education encourages all students’ participation and involvement in the classroom by using a wide range of teaching techniques and providing opportunities for the students to get to know one another.
   b) Inclusive education encourages all students’ participation and involvement in the classroom by teachers’ effective communication and collaboration with families, students and colleagues.
   c) Inclusive education encourages all students’ participation and involvement in the classroom by presenting the content explicitly from multiple perspectives, using a variety of teaching methods, creating and sustaining an environment and finding ways to develop friendships, relationships and mutual respect among all actors involved.
   d) Inclusive education encourages all students’ participation and involvement in the classroom only by presenting the content explicitly from multiple perspectives.

Correct answer: d
3. How can teachers of math use multisensory techniques in inclusive instruction?

   a) In math, teachers may use visual aids (schedules, posters, number lines, charts, diagrams, graphic organizers) and realia (objects from real life used in the classroom) to improve students' understanding of real life situations. Cubes, pyramids or cones can be useful to help children to learn new concepts.

   b) In math, teachers can ask students to solve problems to improve students' understanding of real life situations.

   c) In math classes teachers get students into pairs or small groups, where teaching can be tailored to the way each student learns best.

   d) In math, teachers can encourage students to “think out loud,” to ask questions, and to actively consider perspectives that are different from their own.

Correct answer: a

4. How does inclusive education use human resources such as speech therapists?

   a) The students who need therapy services will be pulled out of the classes for a speech therapy class.

   b) An inclusion class will make the best use of all human resources by including them in the instruction naturally. An inclusion class will bring speech therapists into the classroom so that all students benefit from his/her presence and services.

   c) The students who need therapy services will have a speech therapy after their classes at school.

   d) The students who need therapy services will have a speech therapy as extracurricular activity.

Correct answer: b
Unit 5.6. Prevention of school dropout

Introduction

School drop out represents both an individual and a social problem. It has been noticed that there is a high rate of early school leavers in vocational schools. There are several causes why young people drop out of school:

Educational factors:
- the quality of teaching may be an important factor influences a student’s enjoyment of education and keeps them on the course.
- students’ difficulties in learning without any help and support from school (no intervention appropriate for each pupil in order to prevent early school leaving; no differentiated learning)
- negative learning climate ( poor quality buildings, lack of laboratories or equipment)
- assessment
- lack of communication among students, teachers and parents
- special schools: students having special educational needs -students are placed in the most suitable school and given the right level of support at all times.
- traveller children: there is a fear of dilution of ‘Gypsy Values’ and the exposure of children to the ‘immorality’ of non-gypsy society.
- students’ poor course selection due to lack of choice (because their preferred course is not available, poor information about the course, poor knowledge about oneself), distance of travel – subsidised travel may be one possible solution, inadequate basic skills levels leading to dropping behind in course work (e.g poor literacy level), lack of information to students, parents and carers about the curriculum, examinations and course requirements

Personal factors:
- poor attendance
- poor behaviour, usually leading to regular disciplinary actions by the school
- peer pressure can often lead to: poor behaviour and poor attendance
- bullying is often suffered by many young people, particularly those with disabilities
- students with low self esteem
- lack of interest or boredom with school
- students with close friends outside school
- difficulties in meeting course requirements ( falling behind with coursework, failing to meet deadlines, or obtaining poor marks)
- lack of relevance of the course to a chosen career
- a belief that work experience will be more beneficial to future career prospects than school; abandoning school for the world of work; entering the labour market. It does not matter whether it is about working as a day labourer or having a regular activity.

Location factors may also play a part, if the school or college is too far away making attendance expensive or very time consuming.

Young people may also have to act as carers for their siblings or disabled parents or even parents with a mental disorder.

Family influences
- educational expectations (how much the family values education; different expectation for girls in some cultures)
- students come from families which have seasonal work requirements e.g. farming, fishing etc
- families from disadvantaged backgrounds (low income level, large number of siblings)
- family problems (divorce, alcoholism, domestic violence)
- limited parental education
- the educational model shown by parents and siblings (children who drop out of school before completing their studies come from families where parents did not complete their education themselves. The educational model offered by the sibling is even stronger. If there is an elder child who dropped out of school, there are high chances that the younger brother will ‘repeat’ the same scheme
- lack of family contact with / or support for the school
- lack of family interest in school activities.

Community and Social Factors
- poor socio-economic status
- anti-social behaviour (with poor parental and poor social role models it is all to easy for a young person to link with the ‘wrong people’ and join a ‘gang culture’
- work Culture (if the norm in the area or within their community is to begin earning as soon as possible then the local schools become undervalued, students prefer to spend a high number of hours outside school earning income, leaving little time for school work.)
- political priorities and media criticism (If education is low in political priorities or there is significant media criticism about the quality of education offered, this can also play an important part in undermining the perceived value of education and indirectly lead to ‘drop-outs’).
What are the main Strategies to prevent school drop out?

Schools must have a clear and consistent disciplinary system, which is fairly, but sympathetically, applied. Each case should be examined as sometimes dropping out of school is due to circumstances beyond students’ control (illness, family problems).

A solid system for the registration of absenteeism (authorised or unauthorised) is essential in order to guarantee that absence is recognised and taken care of immediately. All types of absence must be monitored, recorded and their causes and solutions found.

It is important to implement and develop a genuine school culture based on the design of school as a “place to live”, which supports students’s emotional attachment to school, gives support and encouragement to students, parents and teachers.

It is important to talk about absenteeism in class; thus the teacher can raise awareness among students about the problem.

It is important for the teacher to promote a positive class and learning climate by displaying an open, friendly and encouraging attitude and by creating lessons aimed at meeting the student’s individual needs and learning styles.

It is important to create an environment that maximises students’ opportunities and motivation to learn and where teachers and students have good rapport and students feel safe and cared for.

Lessons must be well planned, interesting and designed to connect to students’ everyday experiences outside school. Students at risk can be bored quickly and lose motivation if given teacher-centred teaching. If lessons are to generate interest and motivation it is important to use methods that are the most attractive and appropriate for the individual students.

Use interactive teaching methods which value all students’ learning styles giving a sound base for motivation, promoting knowledge through experience and reflection on experience, developing a gradually more formalized knowledge through induction, practicing the skills acquired in the field.

Use collaborative teaching strategies - cooperative learning, peer education and the creative use of those learning technologies.

It is important to offer differentiated learning to meet each student’s different learning styles. When educators show students there are different ways to learn, students find new and creative ways to solve problems, achieve success and become lifelong learners.
**Tips and tricks**

To succeed in motivating students in the classroom it is important to show them your appreciation, assigning them responsibility and letting them take part in decision making related to learning.

It is particularly important that teachers support the integration of these students socially.

**Know your students** (interests, hobbies, needs).

It is important to carry out activities focusing on getting to know each other, improving self-esteem and communication.

Be a good role model and lead by example.

Promote a positive atmosphere at school.

Avoid negative attitudes and activities e.g. ridiculing, forcing, compelling, punishing, threatening, blaming, putting down, nagging etc.

Organise extracurricular activities which require students’ contribution (project, festivals, competitions, trips).

Increase students’ self esteem and their self respect at every opportunity.

**Conclusions**

Low level education has disastrous consequences not only for the youth but also for our society; it implies inefficient use of costs and loss of young talents. In order to maintain students in institutionalized forms of education, a wide range of programmes have been implemented; they helped students with different types of scholarships, school equipment, refund of transportation costs for students who come from the countryside; these programmes also provided training courses for young people in the art of communication, negotiation and conflict management and encourage people who dropped out school to come back to classes and complete their education; young people engaged in activities meant to key competences; Students with excellent results benefit from school scholarships, which stimulate them to complete their studies. Parents are fined if they do not send their children to school and keep them home. Programmes have also targeted teachers’ performance, infrastructure and parents/ school partnership; a better training of teachers to work with children facing the risk of school drop out, improved infrastructure and better participation from the parents are some of the measures that could be taken to improve the situation.

Schools have been encouraged to keep a rigorous record of students’ absences and contact parents to see what the reasons are. This has led to an improved school-parents partnership. The introduction of optional classes resulted in an increased attractiveness of schools; students can choose some of the subjects to study.
References

https://schoolinclusion.pixel-online.org/training_package.php?tr1=EN&tr2=pre

Evaluation Module 5.6

Answer the following questions

1. What are the main causes for students drop out of school?
   a) students’ difficulties in learning.
   b) negative learning climate in school.
   c) disadvantaged backgrounds (low income level, large number of siblings).
   d) all the above.

Correct answer: d

2. What are the main strategies to prevent school drop out?
   a) The main strategies to prevent school drop-out are: registration of absenteeism, school culture based on the design of school as a “place to live”, school equipment, refund of transportation costs, well planned lessons, interactive teaching methods addressing different learning styles and needs.
   b) The main strategies to prevent school drop-out are: a clear and consistent disciplinary system, registration of absenteeism (+solutions), an environment that maximises students’ opportunities and motivation to learn, well planned lessons, a wide range of programmes, improved infrastructure.
   c) The main strategies to prevent school drop-out are: a clear and consistent disciplinary system, registration of absenteeism (+solutions), school culture based on the design of school as a “place to live”, positive class and learning climate, an environment that maximises students’ opportunities and motivation to learn, well planned lessons, interactive teaching methods addressing different learning styles and needs.
   d) The main strategies to prevent school drop-out are: a clear and consistent disciplinary system, a wide range of programmes, improved infrastructure, well planned lessons, parents/school partnership; a better training of teachers.

Correct answer: c
3. Is it important that the school’s disciplinary system must be fairly, but sympathetically, applied?

   a) The school’s disciplinary system must be fairly applied.
   b) Yes, it is. Each case should be examined carefully as sometimes dropping out of school is due to circumstances beyond students’ control (illness, family problems).
   c) The school’s disciplinary system must be strictly applied.
   d) The school’s disciplinary system must be strictly applied no matter what happened.

Correct answer: b

4. Why is it important to connect lessons to students’ everyday experiences outside school?

   a) It is important to connect lessons to students’ everyday experiences outside school because this way teachers show students their appreciation.
   b) It is not important to connect lessons to students’ experience in order to keep students motivated to learn; the teacher must use technology as their main tool in motivating students to stay at school.
   c) It is important to connect lessons to students’ everyday experiences outside school because students prefer lessons which are relevant to their context. Students at risk can be bored quickly and lose motivation if they are given teacher-centred teaching and lessons are too abstract and not relevant to their experience.
   d) It is important to connect lessons to students’ everyday experiences because every day experiences improve students’ self-confidence.

Correct answer: c