

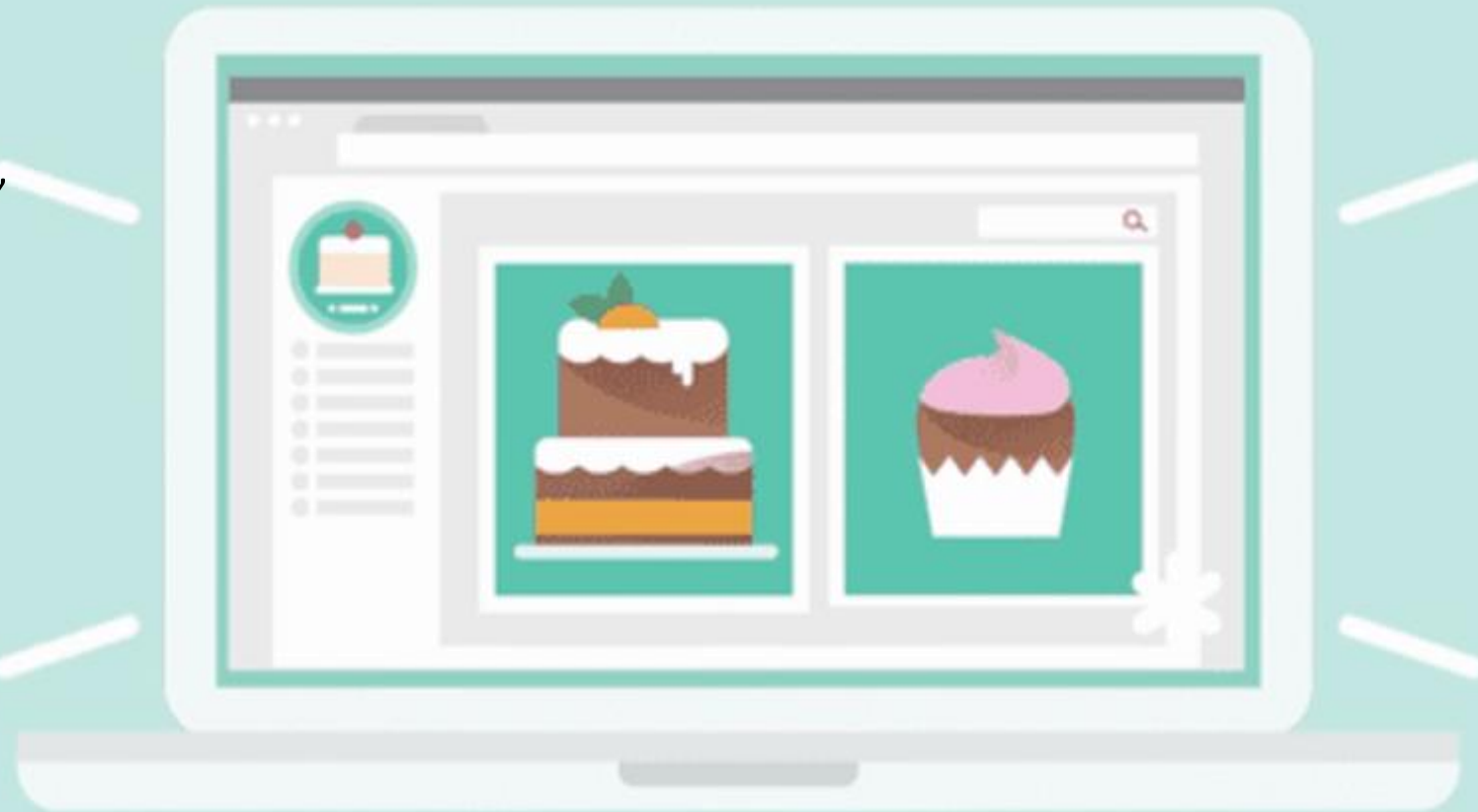
Educational Technology



Learning objectives

After this session, you will be able to:

- Explain the structure of TPaCK, SAMR, and Triple E based on concrete applications of educational technologies.
- Describe the potential of Blended learning/Flipped Classroom

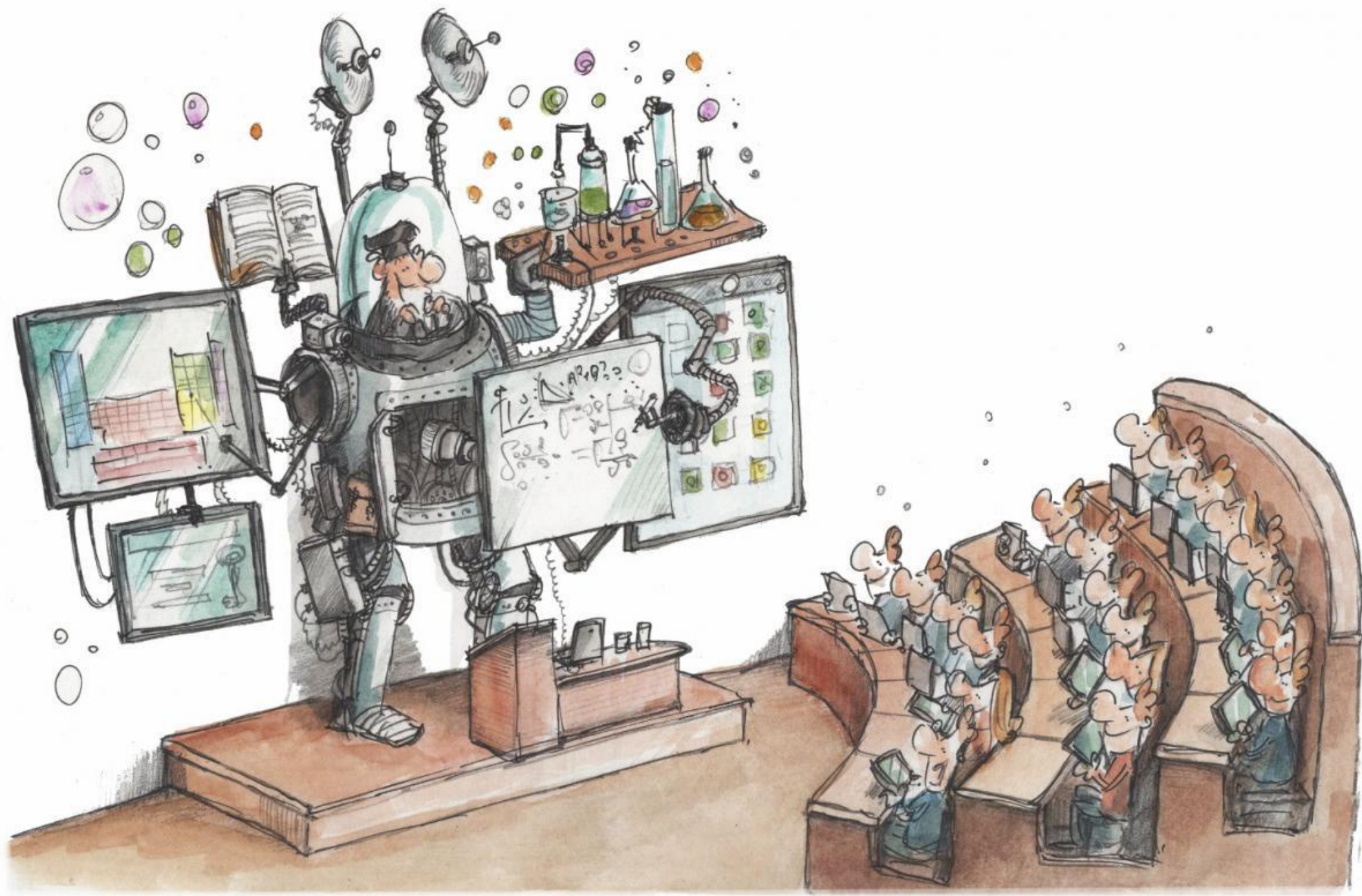


ORCHESTRATION (DILLENBOURG, 2013)


Orchestration refers to how a teacher manages, in real time, multi-layered activities in a multi-constraints context. Many pedagogical scenarios integrate individual activities (e.g. reading), teamwork (e.g. problem solving) and class-wide activities (e.g. lectures). Some of these activities are computer-based, some not; some are face-to-face while others are online. This pedagogical integration is mirrored by the technical integration of different tools (simulations, quizzes, wikis, etc.) distributed over multiple artifacts (laptops, sensors, tablets). These integrated scenarios require forms of management referred to as orchestration.




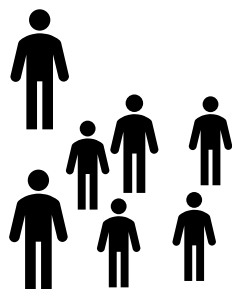
Educational technology models: SAMR & TPaCK & Triple E

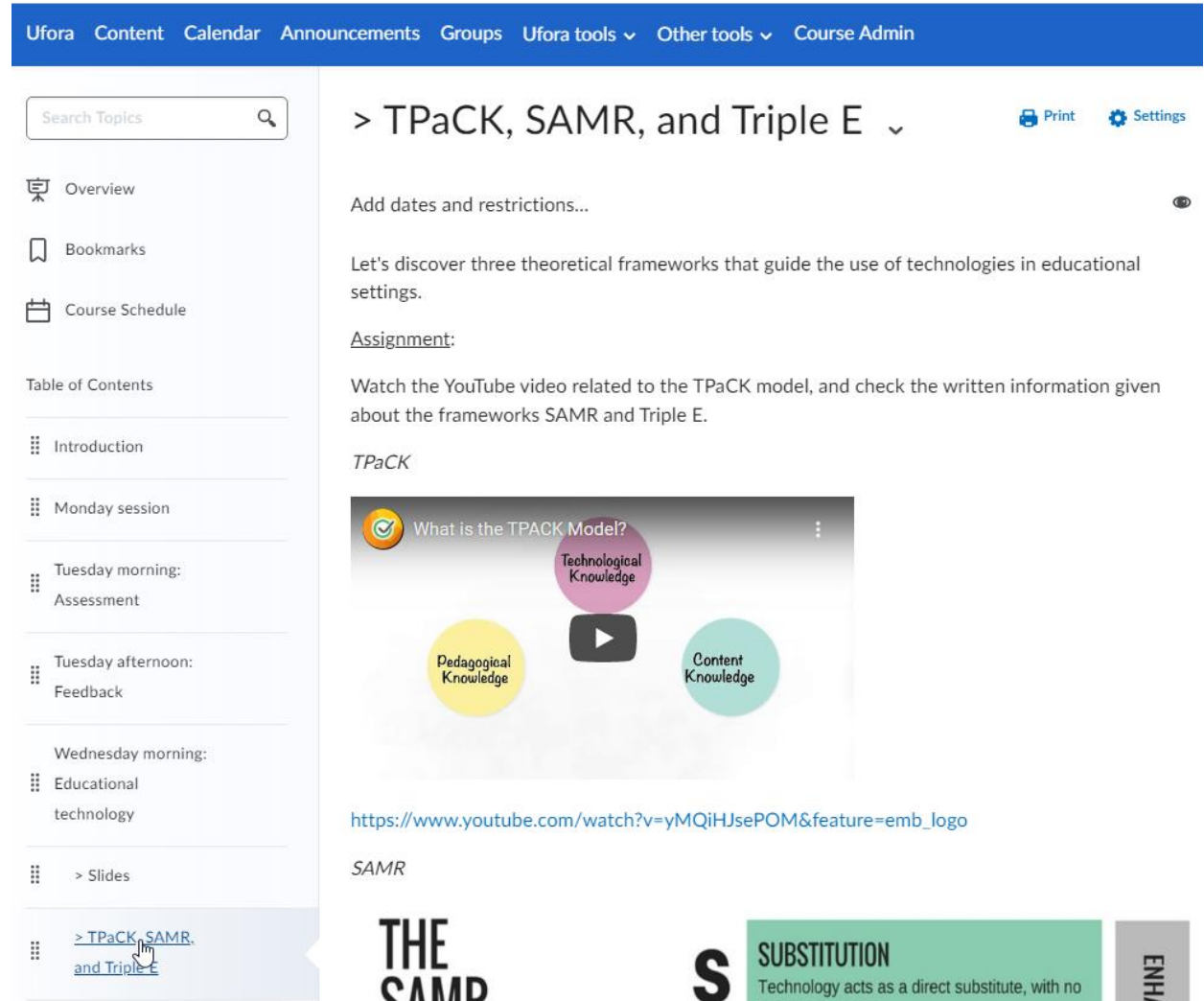


EDUCATIONAL TECHNOLOGY MODELS: TPACK, SAMR, & TRIPLE E

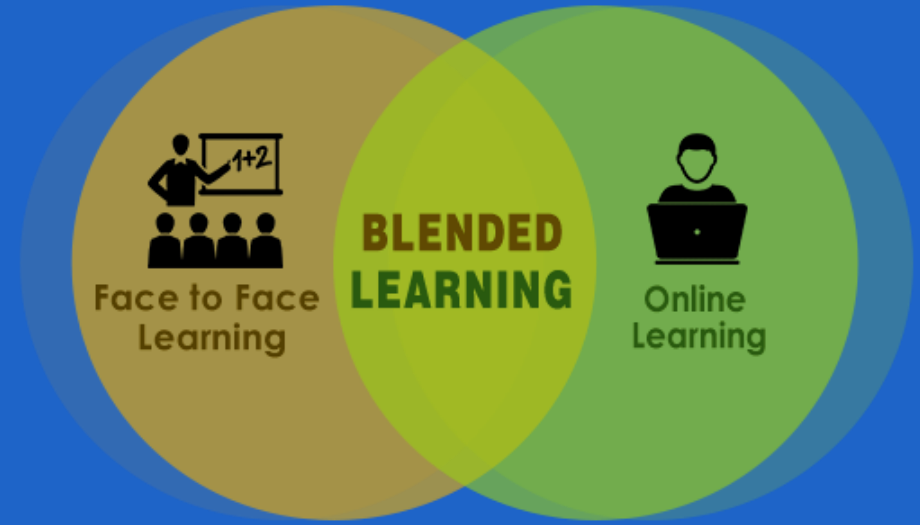
1) Go to Ufora (Wednesday 
→ TPaCK, SAMR, and Triple E)

2) Discover the page (🕒 
15 min.)

3) Wooclap quiz (!) 



The screenshot shows a Ufora course page with a blue header containing navigation links: Ufora, Content, Calendar, Announcements, Groups, Ufora tools, Other tools, and Course Admin. A search bar is present. The main content area is titled '> TPaCK, SAMR, and Triple E' and includes options for 'Print' and 'Settings'. Below the title, there is a section for 'Add dates and restrictions...' and a paragraph of introductory text. An 'Assignment:' section follows, with a video player titled 'What is the TPACK Model?' showing a diagram of the TPACK model with three overlapping circles: Pedagogical Knowledge (yellow), Technological Knowledge (pink), and Content Knowledge (teal). Below the video is a URL: https://www.youtube.com/watch?v=yMQiHJsePOM&feature=emb_logo. The page also features a 'Table of Contents' sidebar with items like 'Introduction', 'Monday session', 'Tuesday morning: Assessment', 'Tuesday afternoon: Feedback', 'Wednesday morning: Educational technology', and '> Slides'. At the bottom, there are logos for 'THE SAMR' and 'SUBSTITUTION' (with the text 'Technology acts as a direct substitute, with no...') and a small 'ENHA' logo.



BLENDED LEARNING

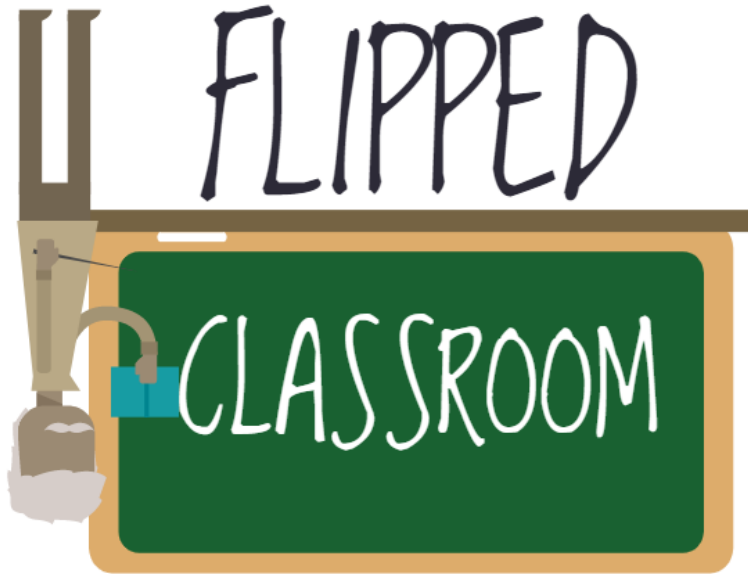
= Learning that happens in an instructional context which is characterized by a deliberate combination of online and classroom-based interventions to instigate and support learning. Learning happening in purely online or purely classroom-based instructional strategy is excluded (Boelens, Van Laer, De Wever, Elen, 2015).

BLENDED LEARNING ≠ TECHNOLOGY-ENRICHED INSTRUCTION



= Web lectures

FLIPPED CLASSROOM



What to do?

Read the information sheet about Flipped Classroom and prepare the assignment individually (🕒 15 min.).

BUZZ GROUP (🕒 10 MIN.)

Discuss the exercise with small groups of 2-3 colleagues.

*Let's inspire each other
and create new things*

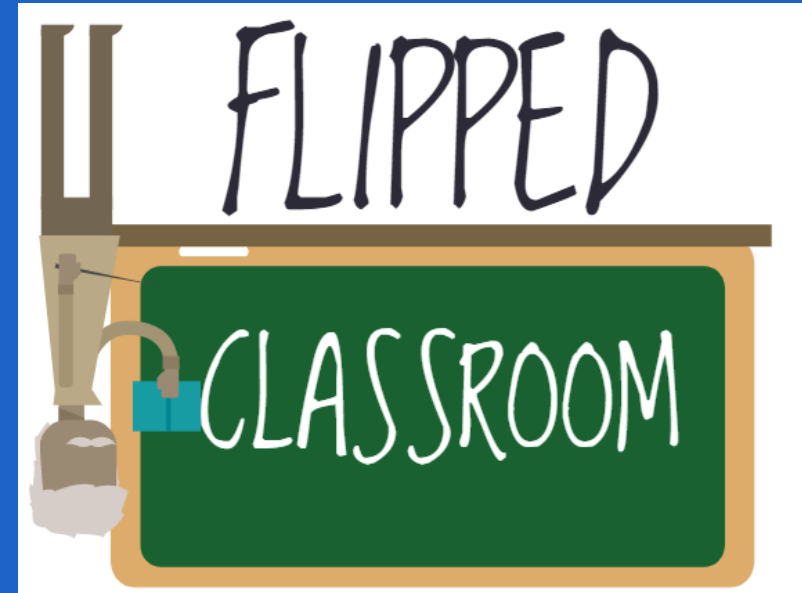


15-minute break

Enjoy your cup of coffee or tea



FLIPPED CLASSROOM



Flipping Large Classes: Strategies to Engage Students

I like this question because it's not asking whether you can flip a large class, but rather what's the best way to do it. Faculty who teach large classes are challenged not only by the sheer number of students but also by the physical space in the classroom. Having 100, 200, or 400+ students in class means teaching in large lecture halls with stadium seating and seats that are bolted to the floor. It's not exactly the ideal space for collaboration and group discussions, so the types of flipped and active learning strategies you can use are more limited.

Often, faculty fall back on the “think, pair, share” format or use clicker questions to encourage student engagement. But there are other techniques we can deploy in these large classrooms to engage students and involve them in higher levels of critical thinking and analysis.

Flipping Large Classes: Three Strategies to Engage Students

Flipped Strategy #1: **Six Thinking Hats**

“Six Thinking Hats” is an approach to guide and focus students’ thinking, expand their perspectives, and generate creative approaches to solving problems (de Bono, 1999). To implement this strategy, present students with six different colored “hats” to wear as they analyze a situation. The color of the hat reflects the role or perspective you want students to take as they work through the problem: white (data, facts), red (feelings, emotions), yellow (positive view, benefits), black (caution, judgment), green (creativity, new ideas), and blue (summaries, decisions).

For large classrooms, you can assign a different colored hat to six different sections in the room. Students within each section can work in pairs or threes to analyze the problem based on the hat they are assigned. This strategy can also be designed as an individual learning activity. Provide worksheets or online tools for students to document their thinking related to the hat they are assigned.

SIX THINKING HATS + ONE



FACTS

White Hat:
(Neutral Objectivity)

Neutral and objective, concerned with data, facts, figures, and information.



EMOTION

Red Hat:
(The Emotional View)

The intuitive view, hunches, "gut", and feeling.



BENEFIT

Yellow Hat:
(Logical Positive)

Optimistic, sunny, and positive, covers hope.



IDEAS

Green Hat:
(Creativity)
Associated with energy, fertility, growth, creativity, and new ideas. Switches around the normal superiority of the black hat.



PLANNING

Blue Hat:
(Process Control)

The organizing hat (start and finish); controls the use of the other hats



JUDGMENT

Black Hat:
(The Logical Negative)

Careful and cautious, the "judgement" hat.



INVESTED

Royal Hat:
(The Owner)
Committed and invested. Subjectively seeking objectivity.

How does it look



Star Fish Retrospective

Six thinking hats

Todos

Pros and Cons

1 Section

2 Sections

3 Sections

4 Sections

5 Sections

6 Sections

7 Sections

8 Sections

9 Sections

10 Sections

1 Section

Section Title *



Flipping Large Classes: Strategies to Engage Students

Flipped Strategy #2 **Paired Jigsaw**

The “jigsaw” technique can be an effective way to engage students in large classes. Tewksbury (1995) describes, “In this technique, teams of students are assigned to investigate different aspects of the same problem/issue. Once teams have completed their assignments, members of each team are then dispersed among new groups and teach group members from other teams about what they have learned (322).” Depending on how many students you have, it may not be possible to form groups, but you can adapt this strategy and create a “paired” jigsaw. Pick a topic and assign two separate readings as pre-class work. Assign half the class Reading A and the other half of the class Reading B. Then ask students to come prepared to teach the most important points from their article to their partner. If you need more accountability, ask students to prepare a worksheet or outline that highlights for their partner the most important takeaways from their article.

During class, ask students to form pairs where one partner has completed Reading A and one partner has completed Reading B. Give students time to teach the main points of their article to their partner. If this is a new activity for your students, you may need to provide more structure to help them organize their ideas as they teach.

Standard Inverted Classroom

It's the classic flipped classroom. The learners are asked to go through the lecture videos and other study material that are prerequisites for the next class. Usually, all the aspects of a topic are converted into video lectures. The class time is reserved for practicing the concepts studied at home and to improve the students' understanding in various ways like a one-to-one interaction with the teacher.

Micro Flipped Classroom

In this type of classroom, short video lectures are distributed as study material along with short assignments. The rest of the lecture and assignments are conducted during the classroom time.

Demonstration-Based Flipped Classroom

Subjects like Maths, Chemistry, Physics, etc. require careful instructions to deliver content. For example, precision is key in a subject like geometry. In demonstration-based classrooms, screen recording tools are used to create instructional videos assigned as homework. Instead of doing this in the classroom, students can go back and forth in the video to understand concepts fully and come back to the classroom for doubt removal.

Cf. Faculty of Science (Ghent University)

Discussion-Oriented Flipped Classroom

Homework is assigned in the form of video lectures and external video resources. Discussions happen in the classroom time where topics are explored further. Having studied the basics, students can add value to discussion.

Cf. Honours programma

Group-Based Flipped Classroom

The group-based model focuses on group learning. After the students have studied the material provided, they work together on assignments during the classroom time. The students learn by explaining concepts to each other, which improves retention.

Cf. In combination with Jigsaw, Peer tutoring, ...

Virtual Flipped Classroom

Classroom time for tutoring is completely eliminated in this model. Educators, like university professors, share all the resources and allocate time for individual sessions during office hours. Assignments are collected online through learning management systems.

Cf. Oxford Tutoring

Role-Reversal 2.0 (Flipping The Teacher)

We know that flipped classrooms usually have students as the centre point of learning as opposed to having the educator as the focal point of information dissemination.

The role-reversal concept is to flip the teacher. Here, students are also asked to create videos demonstrating their understanding. Students can film their group activities or can film themselves. The teacher can assess their progress in the subject through these videos. An advantage of this format is that these videos build a repository of references that can be used in future classes.

“The most commonly reported problem is students' limited preparation before class time”

(Akçayir & Akçayir, 2018, p.341)

Tips & Tricks

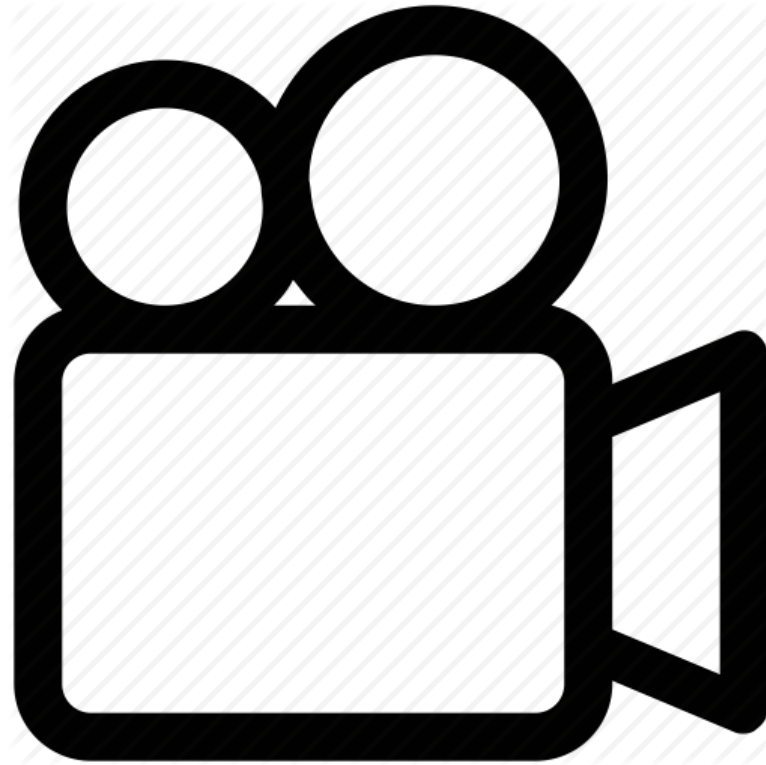
- Discuss briefly at the end of an in-class moment which assignment students need to prepare for the next in-class moment (link with learning outcomes)
- Communicate the assignment ahead of time (read: not the day/evening before the meeting)
- Preparation is needed for making a test/exam (non-periodical evaluation)
- Provide (read/view/etc.) instructions or directing questions
- Give different roles to students (e.g., 1 = defining difficult concepts; 2 = link between text/video and theory; 3 = drawing up critical questions; ...)
 - In-class moment: Group students with different roles (individual accountability)
- Do not ignore students' preparation (e.g., ask questions, give students the opportunity to ask questions/give remarks)
- Ask the students to upload their preparation on a learning management system or to send it to you



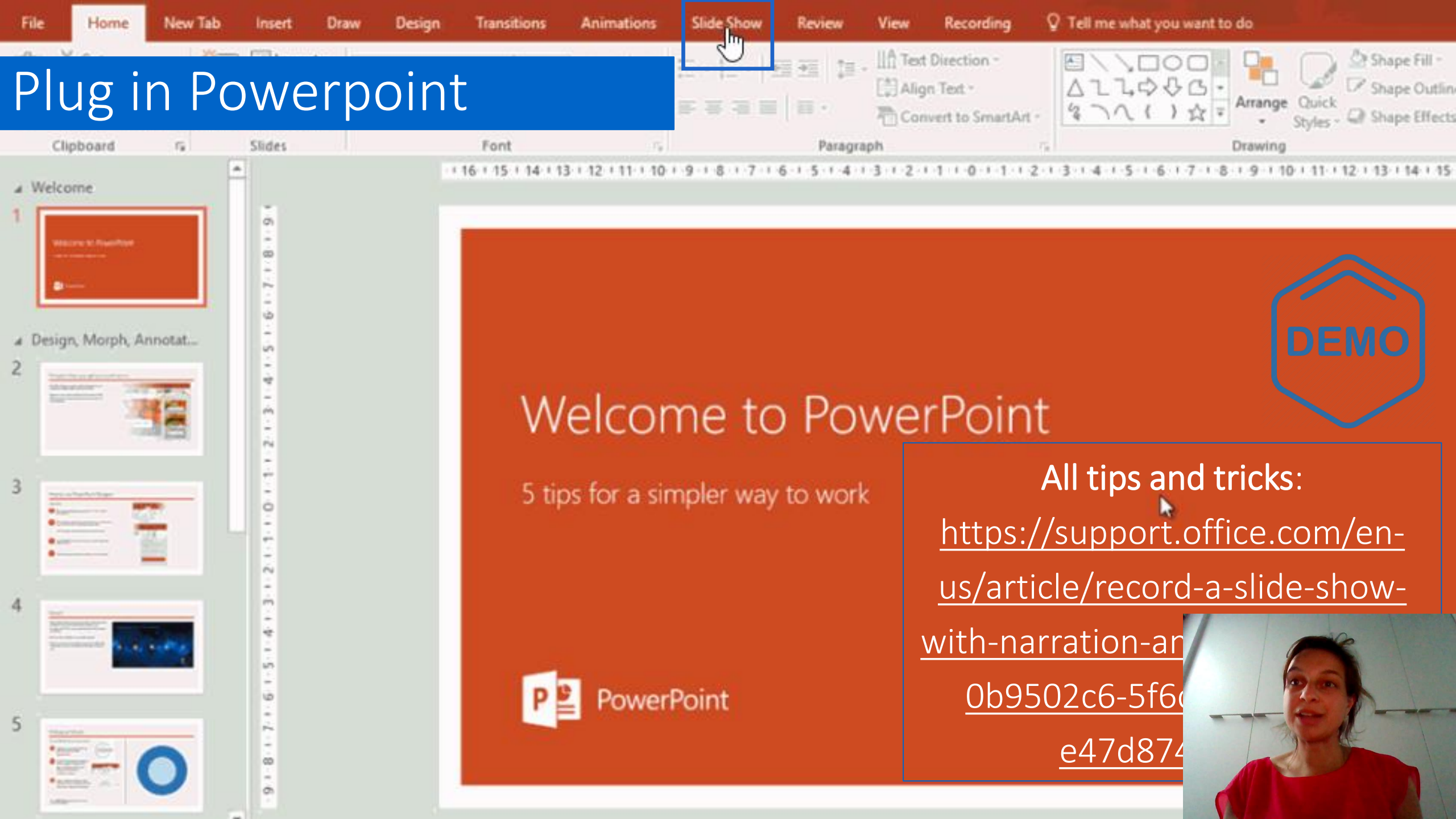
Preparing to flip a classroom?

Keep it simple at first by either relying on your current resources or using existing online content rather than creating your own. If you have time, explore what content currently exists online that may help you supplement your resources.

Returning element of Blended/online education:
Video component



Plug in Powerpoint

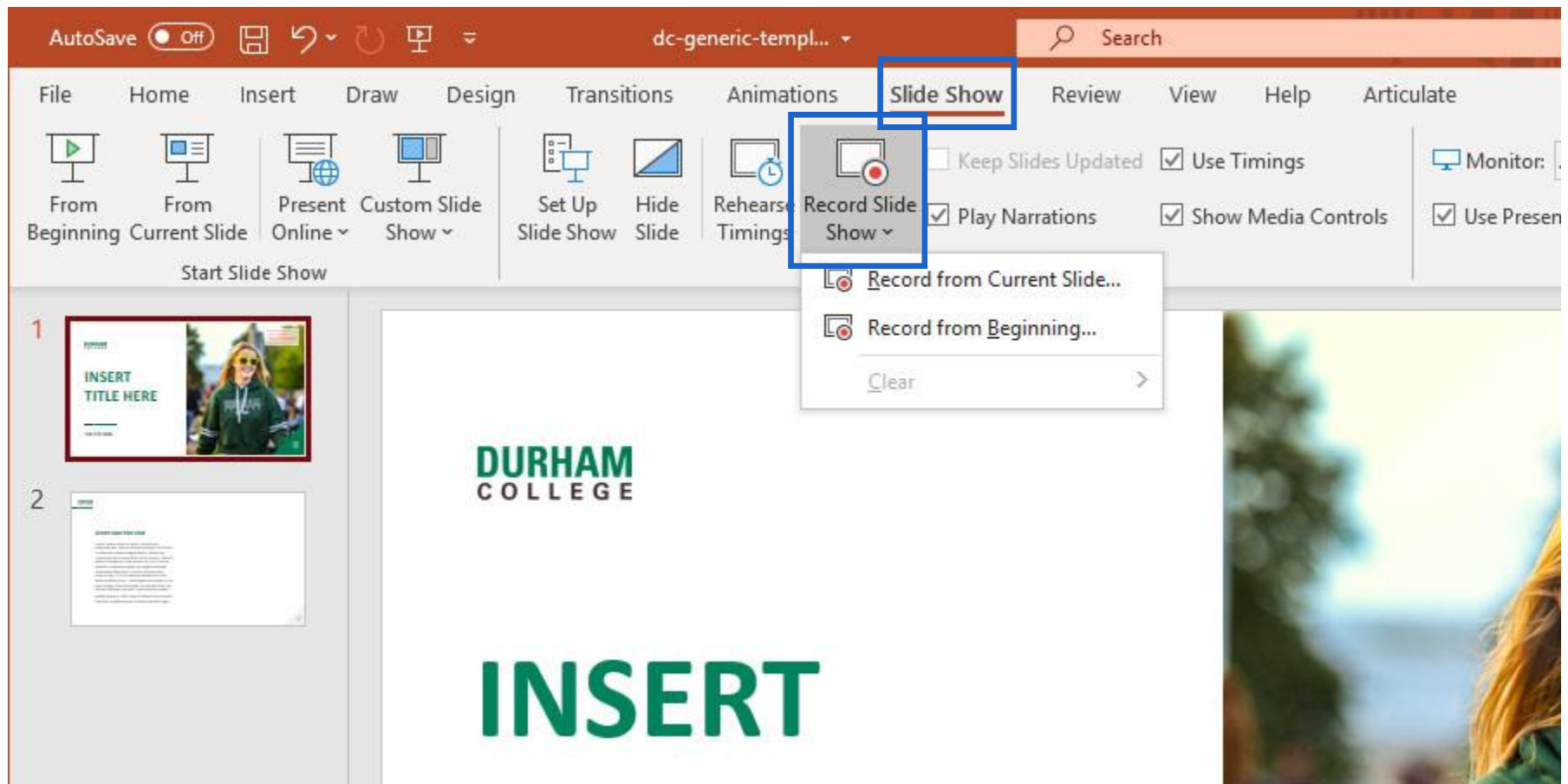


Slide Show



All tips and tricks:
<https://support.office.com/en-us/article/record-a-slide-show-with-narration-and-0b9502c6-5f60-e47d874>





More information:

https://support.microsoft.com/en-us/office/record-a-slide-show-with-narration-and-slide-timings-0b9502c6-5f6c-40ae-b1e7-e47d8741161c#OfficeVersion=Office_365

**I wish my
course unit
looks like ...**

I WISH THE STRUCTURE OF MY COURSE UNIT LOOKS LIKE ...

(🕒 Preparation time: 15 min.)

- Same exercise as Monday morning, but now your dream scenario
- Adapt your template of Monday



GHENT UNIVERSITY FACULTY OF PSYCHOLOGY AND EDUCATIONAL SCIENCES

Structure of my course unit: "future" Bachelor Master Number of students: 150 Your name: "future"

Week	Activity
Week 1	Introduction Lecture "What is"
Week 2	Lecture
Week 3	Lecture
Week 4	practicum
Week 5	Guest speaker
Week 6	Supervision Group assignment

Additional notes:
- Purple cloud: "Jagged classroom" "Students watch each other's work"
- Orange box: "Students prepare a group presentation"

SPEED DATE (🕒 10 MIN.)

Assignment:

Discuss your course unit with colleagues.



Let's inspire each other
and create new things

EXIT TICKET (5 MIN.)

- Go to <https://ideaboardz.com/for/Exit%20ticket/4504309>
- Create sticky's with:
 - 3 things you have learned
 - 2 things you found interesting
 - 1 thing you have a question about



IdeaBoardz Export Login

start typing to filter stickies View Section All Sections Sort By created time

Exit ticket

3 things you learned + 2 things you found interesting + 1 thing you have a question about +



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