Interactive Teaching & Learning:

A rewarding experience

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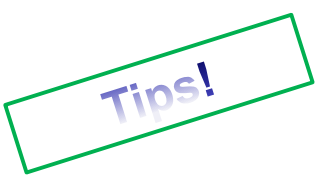
Online Course: MACCARD 2021

Interactive Teaching & Learning:
A Rewarding Experience

I PART: Some reflections on Traditional Teaching

II PART: Some reflections on Interactive Teaching & Learning

III PART: Tips for Making Teaching & Learning a Rewarding Experience!



I PART

Some Reflections on Traditional Teaching

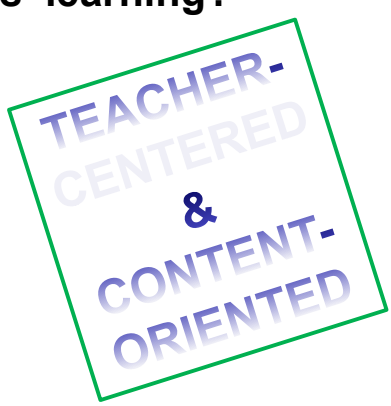
An Example of Traditional Teaching – Teacher

What I am going to teach & deliver (Programme-Content)?

How I am going to give my lecture?

What & How should I assess students' learning?

1. **Mid-term Exam**
2. **Final Exam**



An Example of Traditional Learning – Student's behaviour

1. Students read the programme (content – assessment)

2. **Sit in class or in front of the PC**

3. «**Hear**» and/or «**Listen**» to lecture -> Receive information (?)

More passive student

An Example of Traditional Learning – Student's behaviour

5. **Might Take notes** and/or Record

6. **Might Participate** & Ask questions

7. **Might do Homework**: individual and/or groups (copy)

An Example of Traditional Learning – Student's behaviour

8. Books – Hand-outs – Notes (own or others) – Internet…

9. **Study Content (for Exam)**: read/write, repeat, memorize

10. **Assessment**: Mid-term & Final Exam

11. **Final grade! I made it!**

II PART

Some Reflections on Interactive Teaching & Learning

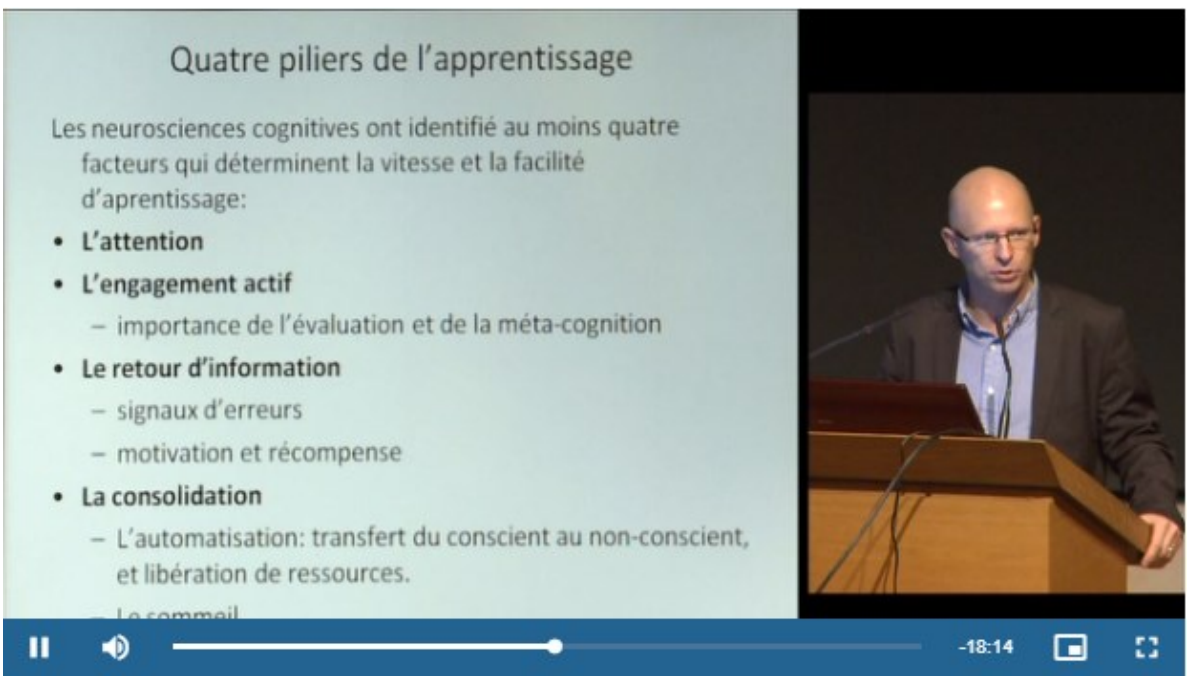
4 Pillars of Learning

1. **Attention** -> grab & keep attention
2. **Active Engagement** -> encourage participation & engage
3. **(Error) Feedback** -> check understanding & give feedback
4. **Consolidation** -> memorize, repeat mechanisms that govern learning, automatize

STUDENT-CENTERED APPROACH

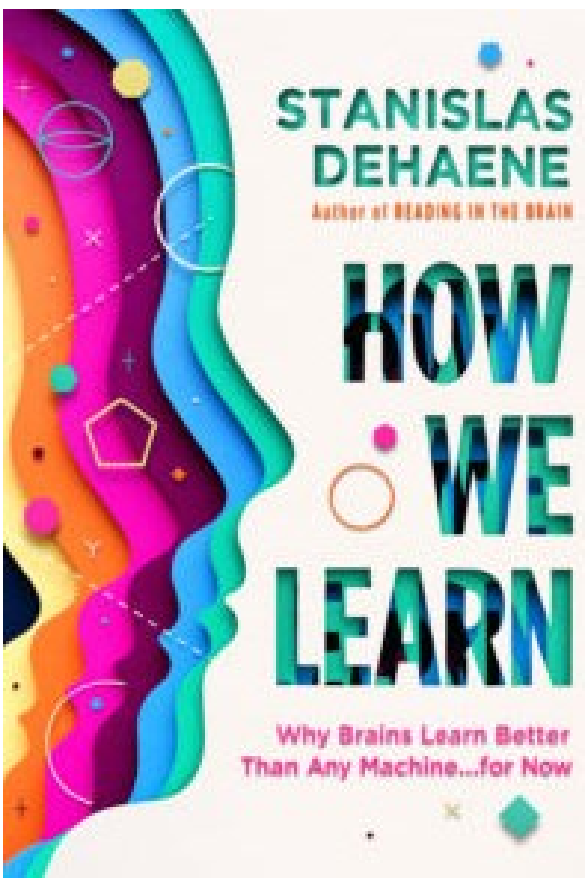
(Stanislas Dehaene)

Stanislas Dehaene's speech (2012) on the fundamentals of learning (Cognitive Psychologist & Neuroscientist):



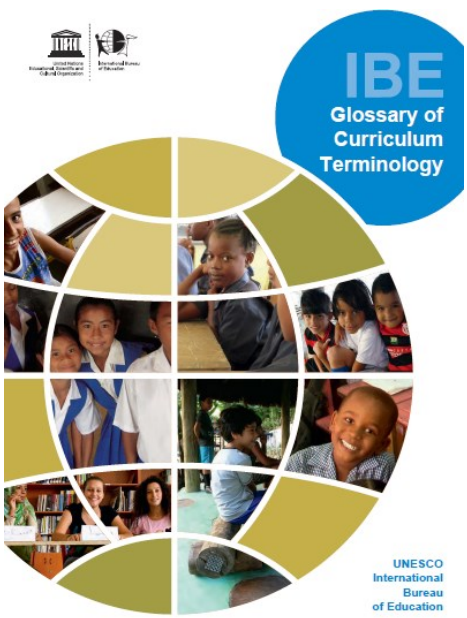
https://www.college-de-france.fr/site/stanislas-dehaene/symposium-2012-11-20-10h00.htm

Stanislas Dehaene
Apprendre !
Les talents du cerveau,
le défi des machines
Odile
Jacob


STANISLAS
DEHAENE
Author of READING IN THE BRAIN
HOW
WE
LEARN
Why Brains Learn Better
Than Any Machine...for Now

https://www.youtube.com/watch?v=0tOq-5SrhrE

Learning



(International Bureau of Education, UNESCO)

"Acquisition or Modification of

Information, Knowledge,

Understanding,

Attitudes, Values, Skills,

Competencies and Behaviours

through **experience, practice,**

study or instruction"

Interactive Teaching & Learning

“The practice of **involving learners** in

the **educational process**

by **encouraging** them to bring

their **own experience and knowledge** into the process,

while also **contributing** to

defining or organizing their **learning**.”

(International Bureau of Education, UNESCO)

Example of Interactive Teaching & Learning – Teacher & Student

1. **What** I am going to teach & deliver (Programme-Content)?

2. **How** I am going to **teach & interact (Theory & Practice)**?

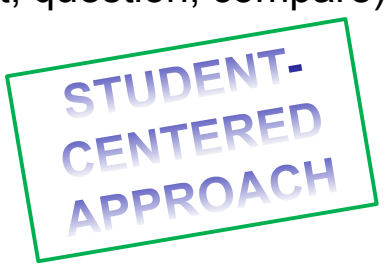
3. **How** can I **engage** my students?

4. What **are STUDENTS going to do DURING my lesson**?

STUDENT-CENTERED APPROACH

Interactive Teaching & Learning

5. **Who** are my students?
6. What do they **already know** about the topic?
7. What do they **expect** from my lesson/course?
8. How can they **connect today's topic with their previous knowledge and experience** (reflect, question, compare)?



Interactive Teaching & Learning

9. What should they **learn today**?

10. Are they **hearing or listening** to me?

11. Have **they understood** what I have just explained?

12. What are **they doing next**?

13. Did **they learn today**?

STUDENT-CENTERED APPROACH

Interactive Teaching & Learning

14. **Progressive and Active learning process**

15. **Progressive** (Self)-**Assessment & Feedback**

16. Suggestions for **Improvement (Method & Content)**

17. **(Re)Adaptation** to Audience during the Course

Interactive Teaching & Learning

18. Students' attention & motivation & participation -> Learning

19. Student's self-confidence (self-esteem) -> Learning

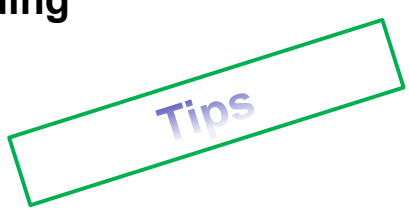
Interactive Teaching & Learning: A rewarding experience!

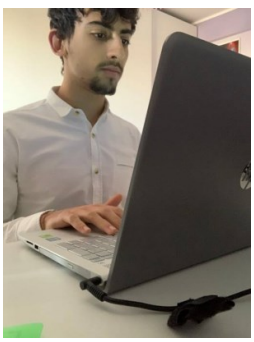
III PART

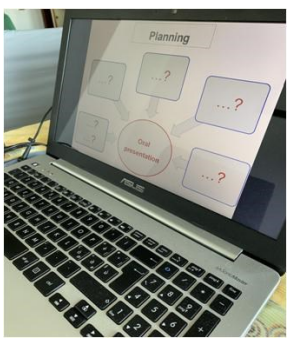
Tips for Making
Interactive Teaching & Learning
a Rewarding Experience

Making Interactive Learning & Teaching a Rewarding Experience

1. Planning
2. Organization & Content
3. Voice Power & Rapport Building
4. Body Language
5. Visuals







1. Planning a course and/or lesson

If you fail to plan,

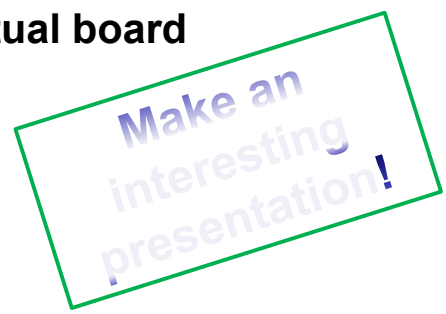
then you are planning to fail!

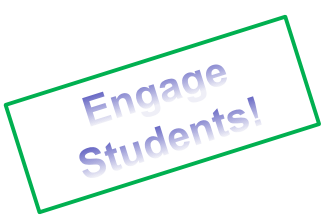
Modern, Interactive Teaching & Learning: Options

1. Theory & Practice
2. Face-to-face and/or Online
3. Synchronous and/or Asynchronous

Modern, Interactive Teaching & Learning: Options

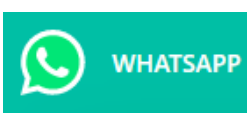
4. Blackboard – Whiteboard – Virtual board
5. Nice Power Point slides!
6. Videos
7. Apps, Softwares, Platforms
8. Personal Computer
9. Mobile





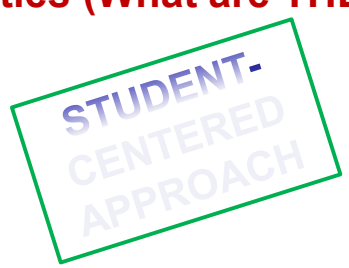
Interactive Technology – Some examples

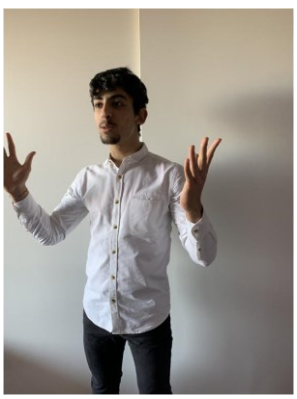
1. Moodle
2. Wooclap
3. Kahoot
4. Slido
5. Padlet
6. Mentimeter
7. Zeetings

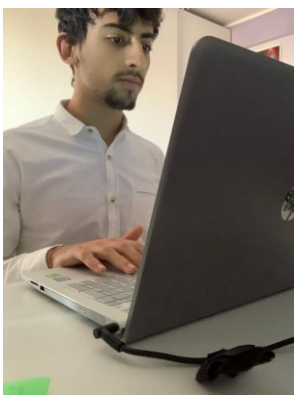


Modern, Interactive Teaching & Learning: Options

10. Books – Reviews – Journals (Articles and Reviews)
11. Magazines
12. Hand-outs
13. Internet...
14. Students' activities (What are THEY going to do?)







Giving a lecture – Communication!

Give a lecture that

YOU would like to attend

AS A STUDENT!

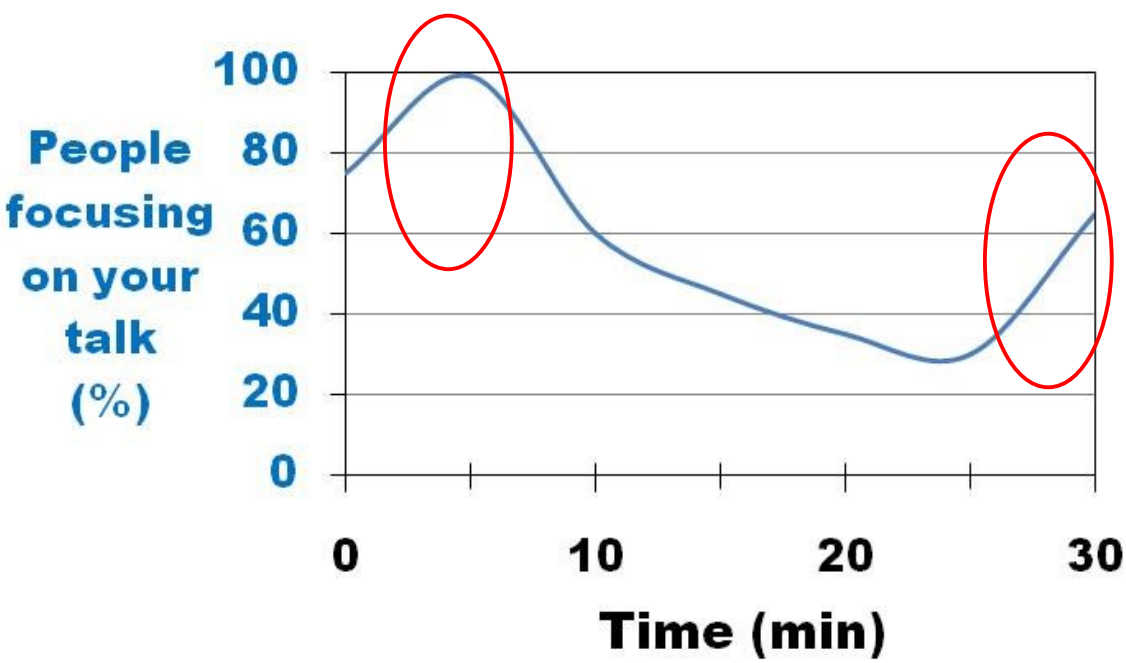
The ABC of **Interactive Teaching & Learning**

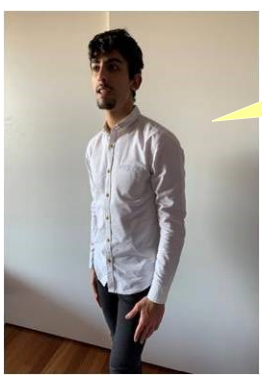
- **A**ccurate content & Audience-**centered**
- **B**rief
- **C**lear **& «Charismatic»**

https://www.youtube.com/watch?v=x7qPAY9JqE4

Steve Jobs Introducing The iPhone At MacWorld 2007

What happens during a frontal lecture?

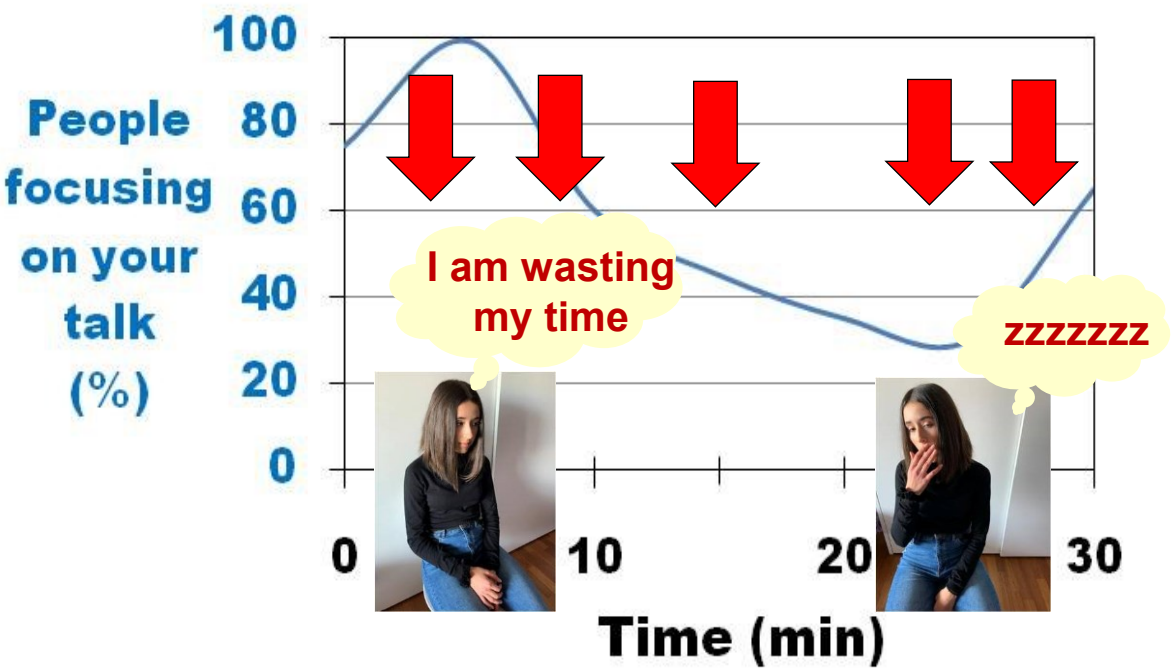




Good morning,
today
I am going to
speak about…
……
……
……
……

What happens in a

BORING FACE-TO FACE LESSON?



What happens in a BORING ONLINE LESSON?

2.Organization & Content

Give an accurate, brief, clear, easy to follow and well-balanced lecture!

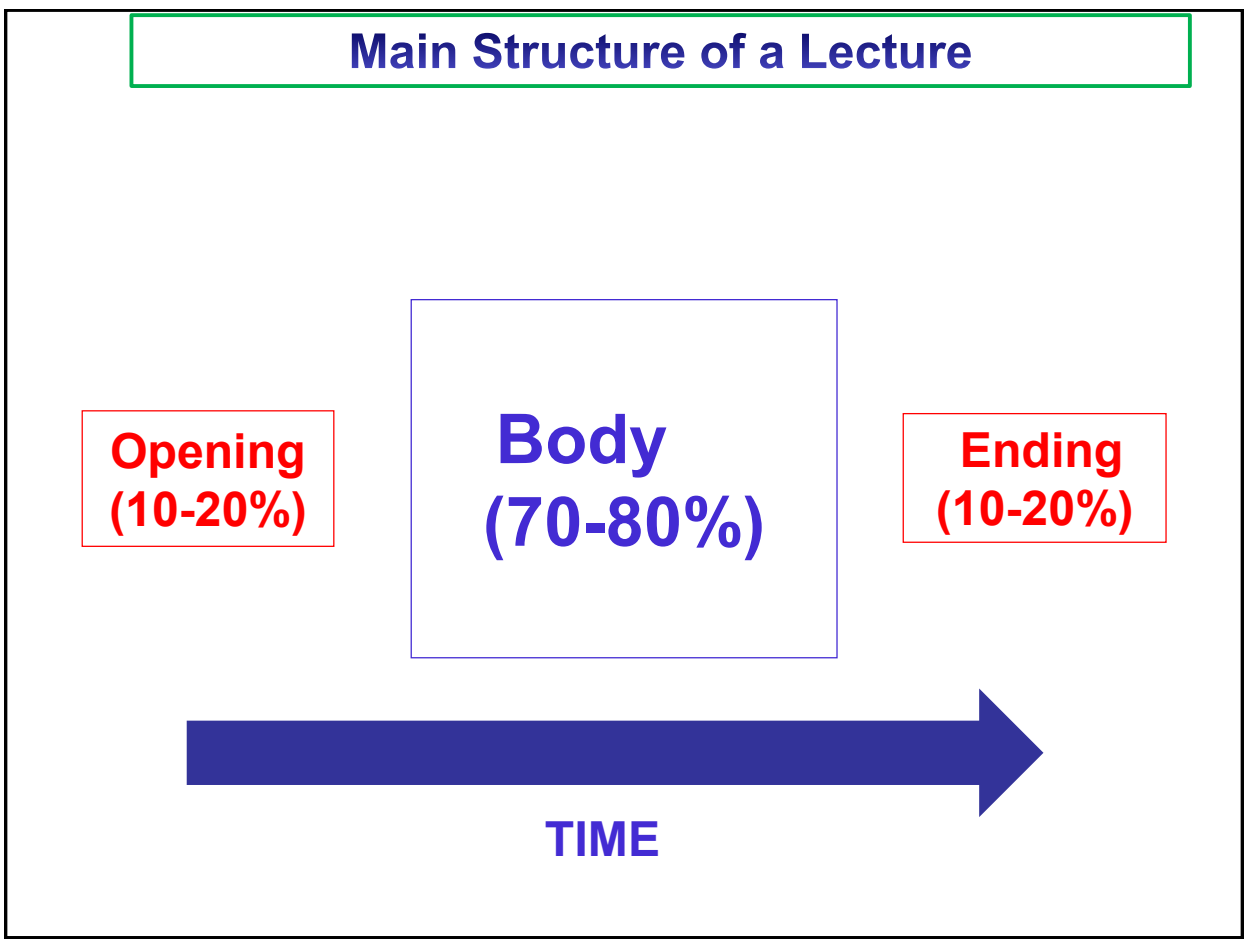
RESPECT THE TIME!

IMRAD

Story Telling…

Something else…

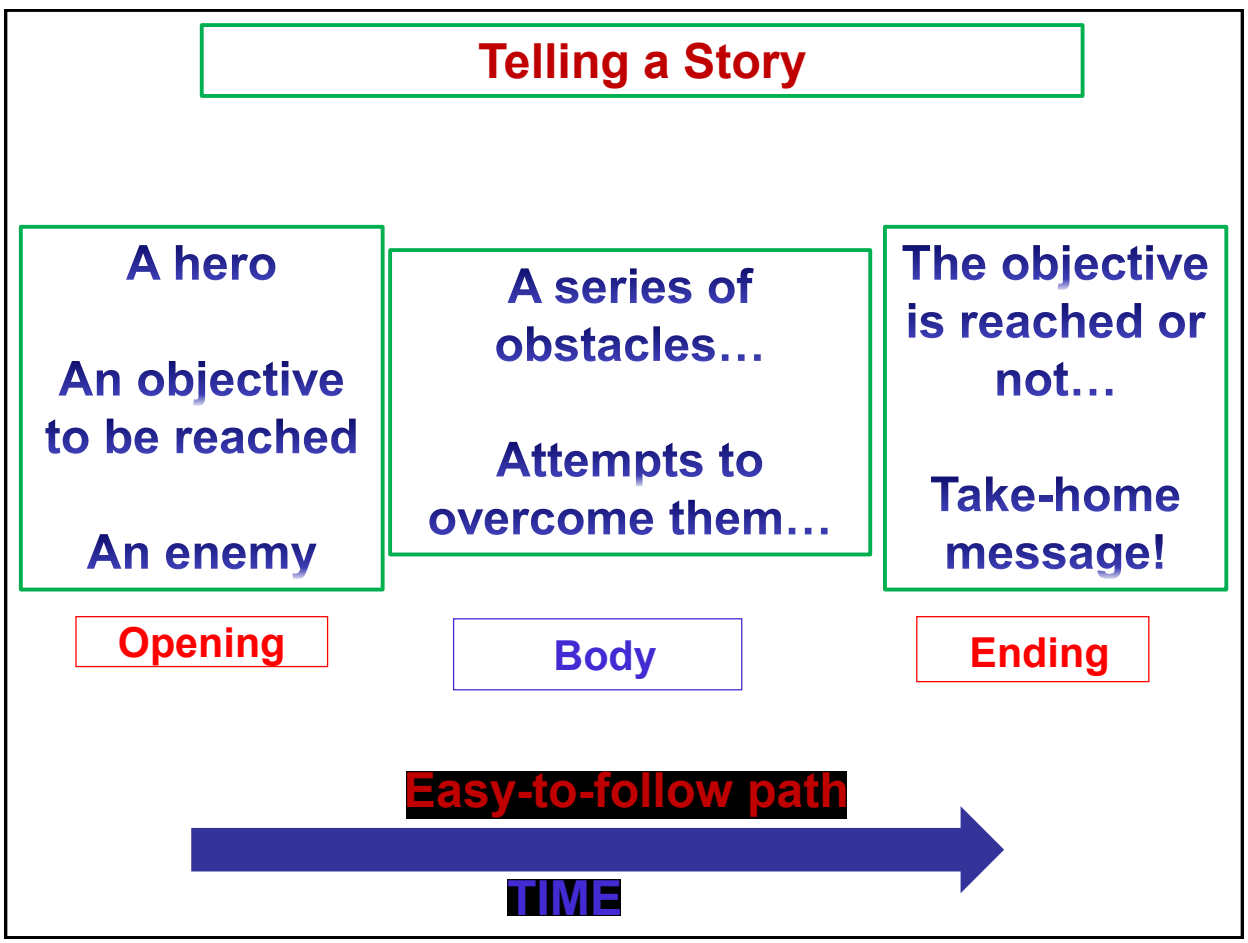
Main Structure of a Lecture



Telling a Story…

- Make people identify themselves with your story
- Stimulate their imagination
- Arouse their/your emotions - Interaction

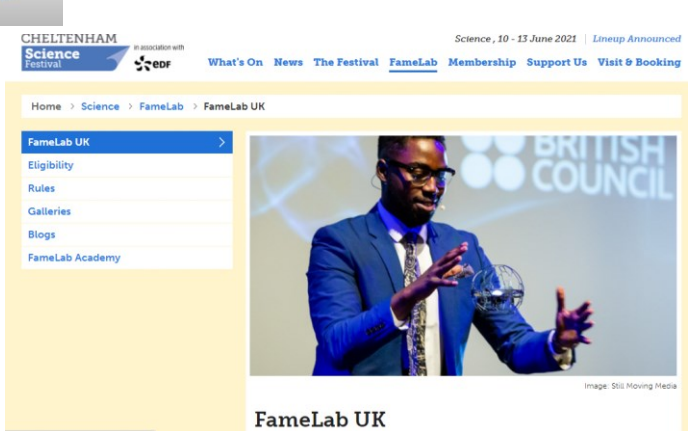
????	????	????
Opening	Body	Ending


Telling a Story
A hero
An objective to be reached
An enemy
A series of obstacles…
Attempts to overcome them…
The objective is reached or not…
Take-home message!
Opening
Body
Ending
Easy-to-follow path
TIME

https://www.youtube.com/watch?v=UF8uR6Z6KLc&t=52s

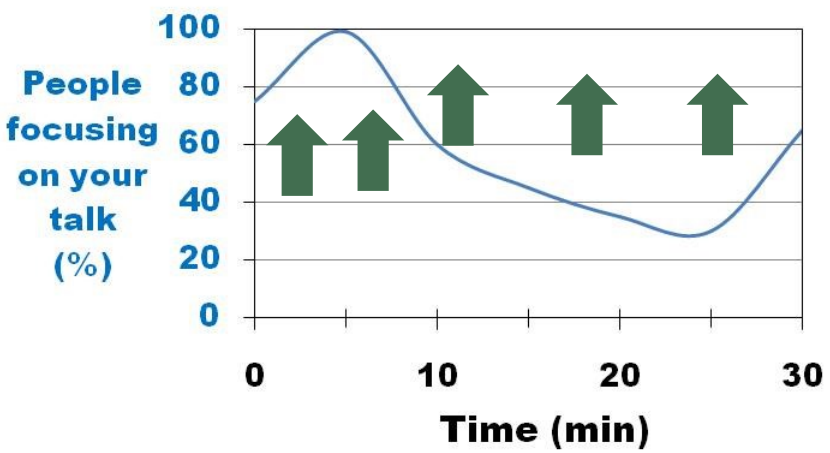
Steve Jobs' 2005 Stanford Commencement Address

FameLab: the World's leading science communication competition



https://www.cheltenhamfestivals.com/science-/famelab/famelab-uk-/

ORGANIZATION & CONTENT



General vs. Specific

Theory vs. Practice

Simplicity vs. Complexity

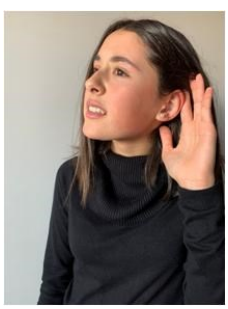
2. Voice Power & Rapport Building

Use your voice to make your lesson exciting and your message delivered effectively!

Be engaging!

Be charismatic!

	VOICE POWER & RAPPORT BUILDING
Volume	Effective (Loud enough)



Not too low…

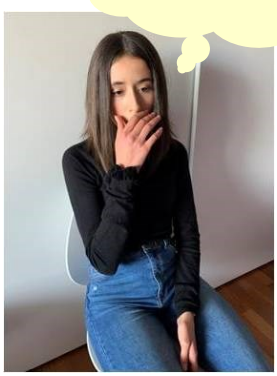
Speak to be heard!

NOT TOO LOUD!!!

	VOICE POWER & RAPPORT BUILDING
Speed & Pauses	Effective speed and pauses (Varying speed & pauses)

Too slow

I'm falling asleep...



Too fast

I can't follow him...

	VOICE POWER & RAPPORT BUILDING
Intonation	**Varying tone (NOT monotone/flat)** **Emphasis on main words**, linking words and points **Expressing** feelings & emotions

Effective intonation!

«Powerful» voice!

Enthusiasm is contagious!

	RAPPORT BUILDING
Interaction	Get to know your students (before/during/after) Interact with students Make them feel comfortable & special

Be empathic…
Be charismatic…
Be enthusiastic!

	RAPPORT BUILDING
Interaction	Engage students -> ACTIVE PARTICIPATION Stimulate Questions & Answers

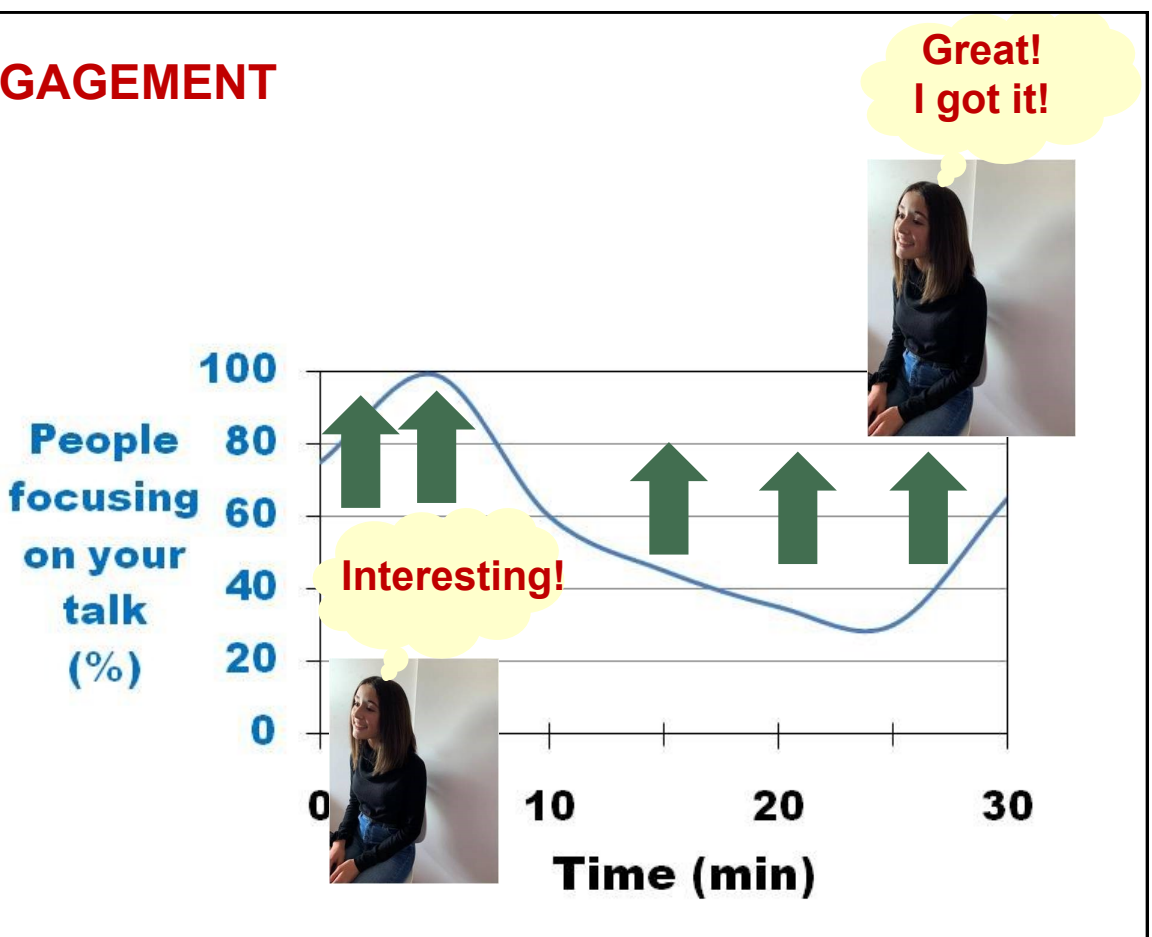
That's a very interesting question! Thanks for asking!

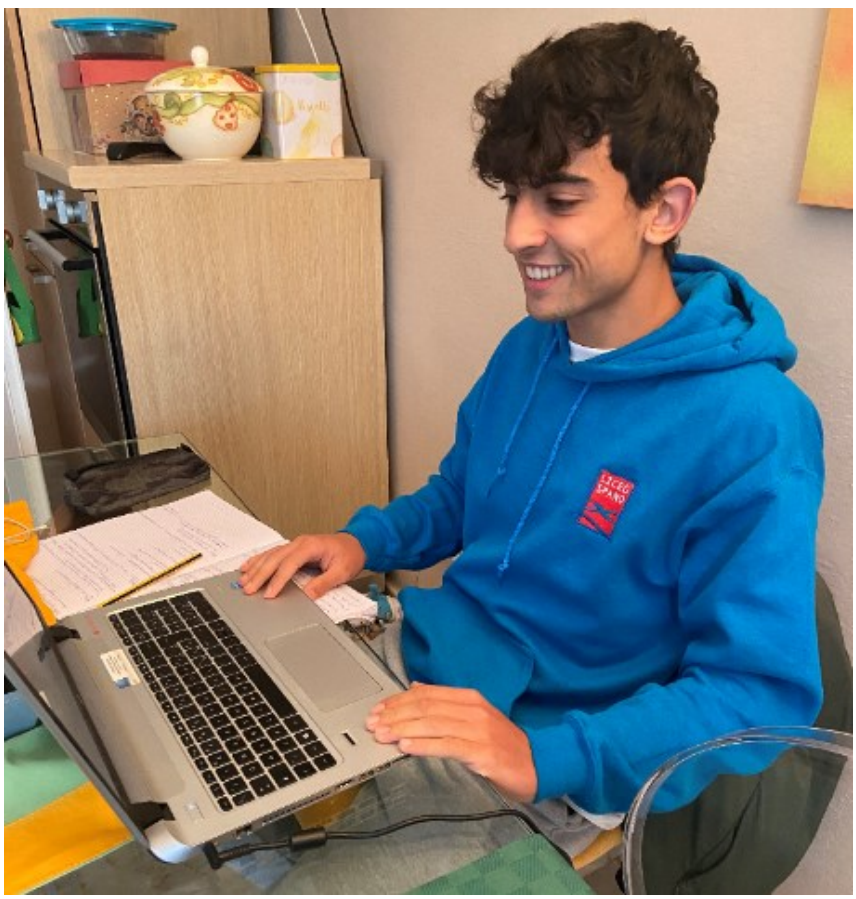
Engagement!

	RAPPORT BUILDING
Interaction	Increase students' attention & motivation Improve students' skills: teamworking, leadership, communication skills Make students feel satisfied and self-confident

Be charismatic!

ENGAGEMENT


Great!
I got it!
Interesting!
People focusing on your talk (%)
100
80
60
40
20
0
0
10
20
30
Time (min)



How to activate students – Start, During & End

- In the **first 3-5 min** of lesson, make students DO SOMETHING!! Activate their mind & Grab their attention!!
- **During the lesson, at various times,** stimulate their ACTIVE participation to maintain attention, favour gradual and active learning, check progressive learning (assessment) and give feedback to help learning process
- **At the end of the lesson**, make students participate actively to grab attention for take-home message, check what they learned and how you taught, give feedback, and keep them motivated for take home activity or next lecture!

How to activate students

Some suggestions:

- Ask an **easy question** to be answered: Yes/No, 2-3 Items (it might be or might not be related to the specific topic you're going to teach…)
- Ask a **more complex question**
- Students **recap main points** of the (previous) lesson

How to activate students

Some suggestions:

- Students give their **opinion on topic** (to be) taught
- **Exercises**: Quiz, Questionnaire, Find & Correct mistakes
- Show a brief **video**: indicate aspects to look at, make a question

How to activate students

More suggestions:

- **Divide in pairs or groups**:
  - Brainstorm
  - Interview each other
  - Favour and/or Against
  - Read & Discuss & Present
  - Exercises: Quiz, Questionnaire, Simulation, Find & Correct Mistakes
  - Recap/New topic -> Present main points

3. Body Language

Stay connected!

	BODY LANGUAGE
Eye contact	Look at the audience

Make eye contact!

	BODY LANGUAGE
Facial expression	Be expressive (Show Enthusiasm) **CHECK your students' FACIAL expressions (and body movements)**

Don't be too serious…

Smile!

Six Facial Expresions – Primary emotions

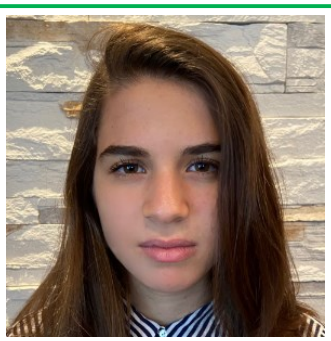
Hapiness

Sadness

Surprise

Fear

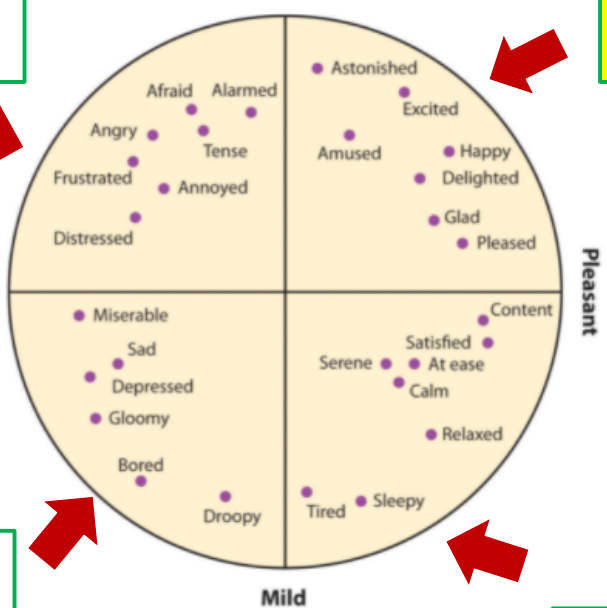
Disgust



Anger

Secondary emotions

Angry
Annoyed
Frustrated



Excited
Happy
Pleased

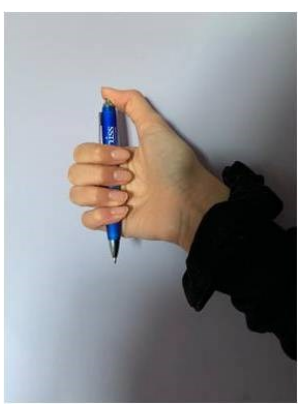
Bored
Sad
Miserable

Tired &
Sleepy…

Charles Stangor & Jennifer Walinga (2014) – Adapted from

	BODY LANGUAGE
Posture & Movement	Balanced, Comfortable (Not excessive, Not static)
Hand use	Appropriate, Not distracting (For emphasis and to indicate)

Not the best…

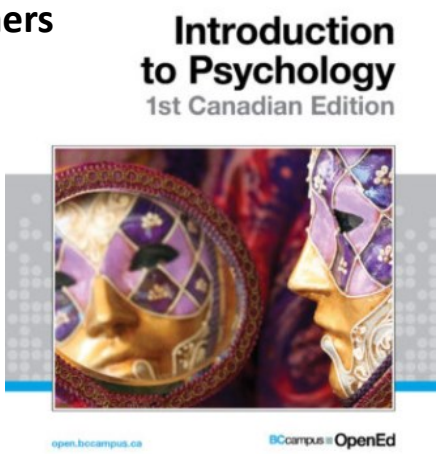


Check the reaction of students…

Then, adjust your lesson!

TAKE-HOME BODY LANGUAGE

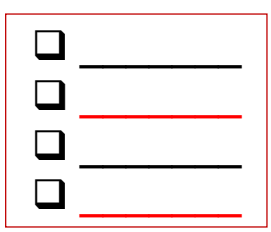
"We express our emotions to others through nonverbal behaviours, and we learn about the emotions of others by observing them."



Charles Stangor & Jennifer Walinga (2014)

5. Visual Aids

Make effective slides!



Your students have

different ways of looking at

and learning from slides

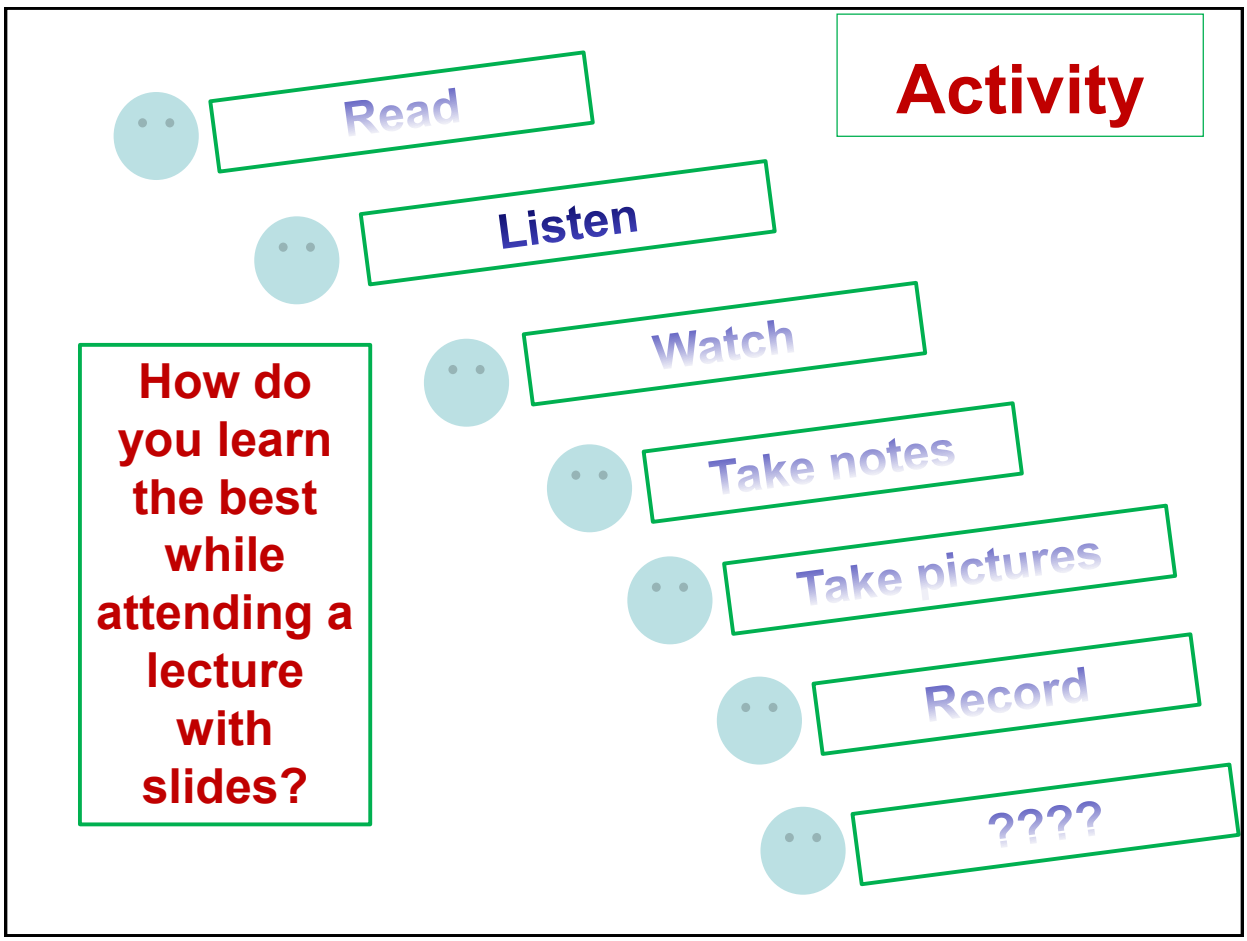
Make and Present slides that are

effective for all (most) of them!

Read, Listen, Watch…

Text, Tables, Figures, Images

Activity


Read
Listen
Watch
Take notes
Take pictures
Record
????
How do you learn the best while attending a lecture with slides?

	VISUAL AIDS
Style	Effective, Easy to read and follow Not overloaded Consistent but not Boring

Main sentence

- _____
  - _____
  - _____
- _____
  - _____
  - _____

Read, Listen, Watch…

	VISUAL AIDS
Style	Proper use of animations (sequential entry/slides) Balanced (text, images, figures & tables)

Main sentence

- _____
  - _____
  - _____
- _____
  - _____
  - _____

Read, Listen, Watch…

AVOID

Making Slides

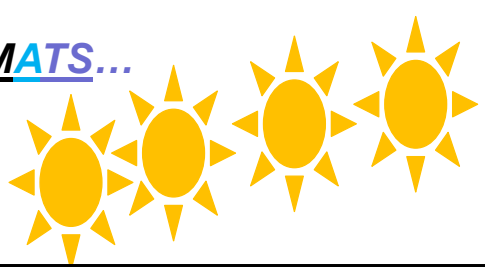
with Different Styles &

Excessive Use of Animation

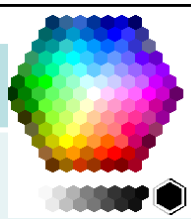
& Typooooss!

DIFFERENT FORMATS…

Moving objects…



	VISUAL AIDS
Colours	Proper use of colors (good contrast)



Heading	Heading	Heading	Heading
• Bullet 1 ○ Aaa ○ Bbb	• Bullet 1 ○ Aaa ○ Bbb	• Bullet 1 ○ Aaa ○ Bbb	• Bullet 1 ○ Aaa ○ Bbb
• Bullet 2 ○ Aaa ○ Bbb	• Bullet 2 ○ Aaa ○ Bbb	• Bullet 2 ○ Aaa ○ Bbb	• Bullet 2 ○ Aaa ○ Bbb

Materials and Methods

- NYS Agricultural Experiment Station, Geneva, NY, 1994
- Eighteen 12-yr-old "Starkrimson Delicious"/M26 apple trees
- Central leader, 3 m x 4.6 m spacing
- Normal fertilization, weed and disease control
- Factorial experiment (CRD, 3 trees/treatment):
  - Crop levels:
    - Light (125 fruit/tr)
    - Normal (300 fr/tr)
  - Mite levels:
    - Low (<100 CMD)
    - Medium (400-1000 CMD)
    - High (>1000 CMD)
- Regression analyses (Arial 28, 24, 22, 1.2)

Avoid these combinations…

Red & Green
Red & Green
Red & Green
Red & Green
Red & Green
Red & Green
Red & Green
Red & Green
Red & Green
Red & Green
Red & Green

Red & Blue
Red & Blue
Red & Blue
Red & Blue
Red & Blue
Red & Blue
Red & Blue
Red & Blue
Red & Blue
Red & Blue
Red & Blue

	VISUAL AIDS
Font type and size	Readable, Easy to read, Not distracting

Arial/Calibri (50 head) (40 txt)

Calibri (36-30) - titles

Arial – **Segoe UI** (30, normal) – titles (Arial 30/34)

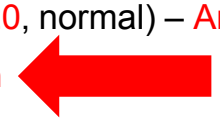
Arial - **Segoe UI** (28, normal) – max, all (nor/**bo**)

Arial – Segoe UI (24, normal) – max, min

Arial – Segoe UI (22, normal)

Arial - Comic Sans MS, Trebuchet (20, normal) – Arial 20 text, max, min

Arial - Comic Sans MS (18, normal) - min



Some risk

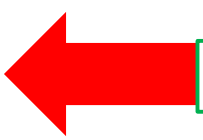
Arial - Comic Sans MS (16, bold)

DANGER…

Arial - Comic Sans MS (14, bold)

Arial - Calibri (14, normal) - text

Arial – Calibri (12, normal) - text



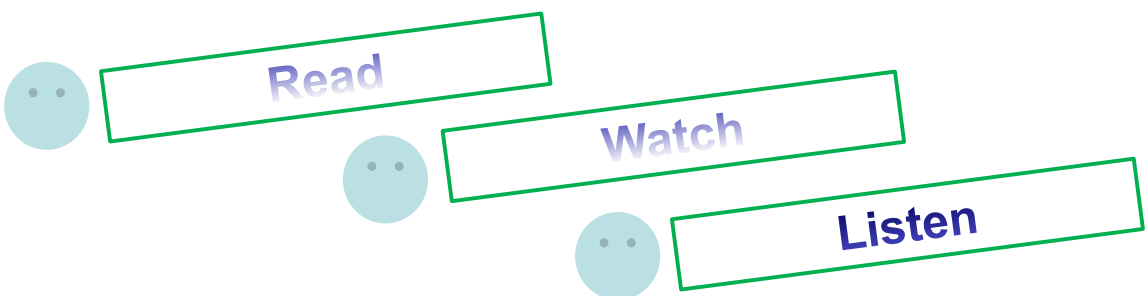
NO!!!

	VISUAL AIDS
Text	Proper line spacing

- Too narrow: 1 (default)
- Too narrow: 1 (default)
- Too narrow: 1 (default)

- Minimum: 1.1 – Good: 1.3
- Very Good: 1.5
- Very Good: 1.5
- Very Good: 2.0
- Very Good: 2.0

	VISUAL AIDS
Text, Tables and Figures	Clear, readable, not overloaded Emphasize main information Present one main point at a time (different slides vs. sequential entry)



- Include only ESSENTIAL information!
- AVOID “EXTRA-information”!

Materials and Methods

- Factorial (CRD, 3 trees/treatment):
  - Crop levels:Light (125 fr/tr), Normal (300 fr/tr)

  - Mite levels: Low (<100), Medium (400-1000), High (>1000 CMD)

- Regression analyses (SAS software)

(Arial 24 bold title, 22 text, 1.5)

I can’t read anything...

In this table you can see that…!

Day	TSS	Acidi	Firm
1	12	1.01	7.8
2	13	1.05	7.5
3	11	1.02	7.4
4	14	1.22	7.3
5	12	1.00	7.2
6	13	1.15	7.1
7	12	1.13	7.6

Tables should be readable… and not overloaded!

B Tables

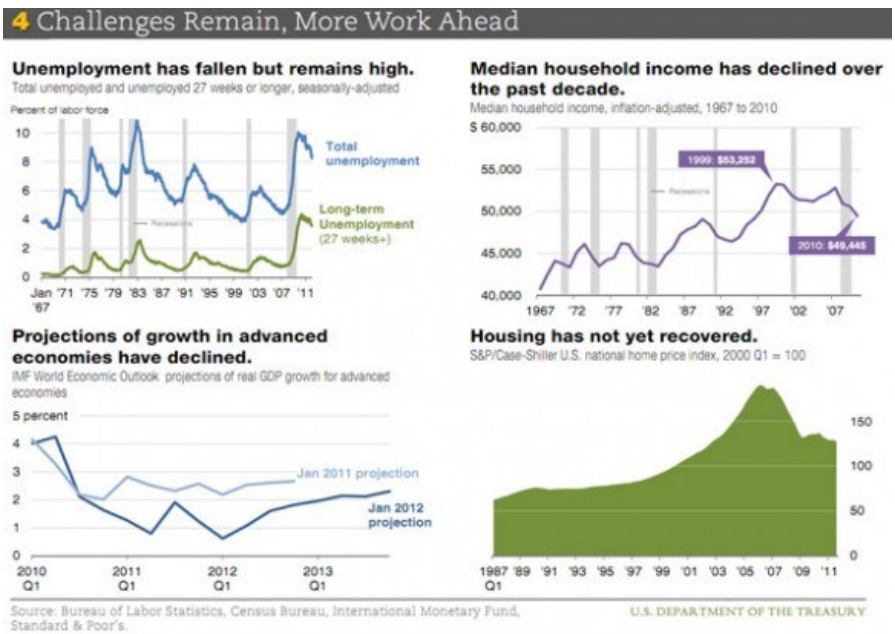
Table 1: Add caption

Variable	Description
W_hours	The average number of hours worked each week by the respondent
W_hours_dummy	A dummy variable that takes the value of unity if the respondent works more than 0 hour
W_age	The age (in years) of the woman
W_educ	The number of years of formal education of the woman
W_exper	The woman's work experience (in years)
Hus_age	The age (in years) of the woman's husband
Hus_educ	The number of years of formal education of the woman's husband
Hus_inc	The annual income (in $'000s) of the woman's husband
faminc	The annual income (in $'000s) of the family unit
kids05	The number of children under the age of 6
kids618	The number of children aged between 6 and 18
largecity	A dummy variable that takes the value of unity if the woman lives in a large city, and zer
W_mothereduc	The number of years of formal education of the woman's mother
W_fathereduc	The number of years of education of the woman's father
W_motherworked	A dummy variable that takes the value of unity if the woman's mother was herself a work
Hus_mothereduc	The number of years of formal education of the woman's husband's mother
Hus_fathereduc	The numbger of years education of the woman's husband's father
Hus_motherworked	A dummy variable that takes the value of unity if the woman's husband's mother was hers

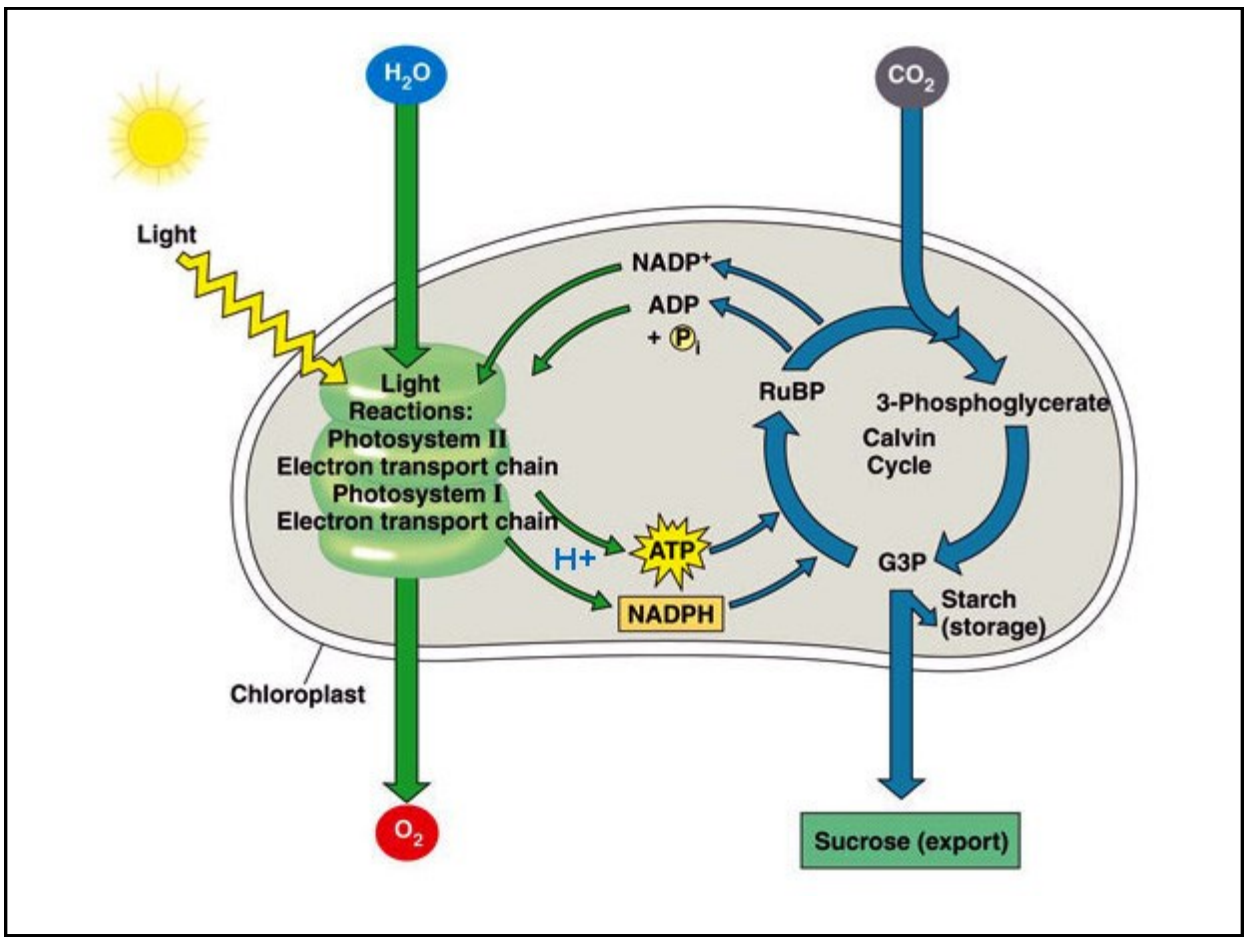
Milk production traits in ewes with different doses of aflatoxin B1

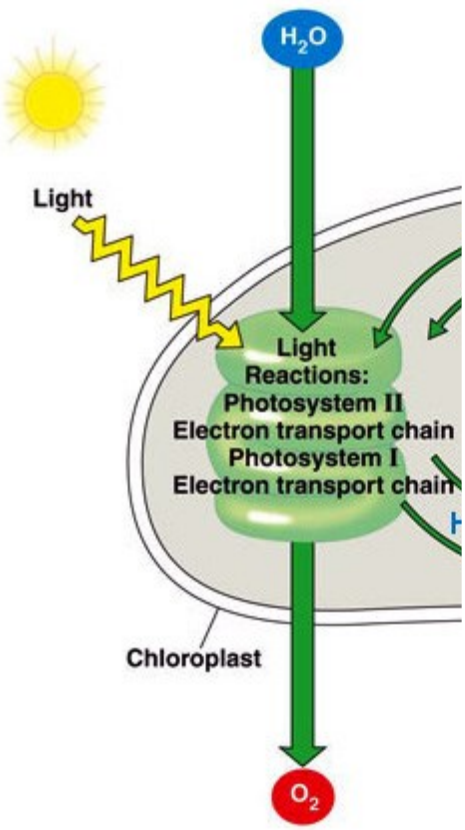
Trait	Aflatoxin level (µg/d) 32	64	128	SEM	*P-value*
Milk, kg/d	1.12	1.15	1.03	0.095	0.718
Fat, %	5.98	6.25	6.01	0.195	0.597
Protein, %	4.87	4.79	4.96	0.141	0.717
Ln SCC, $x10^3$/mL	4.42	5.02	5.11	0.381	0.435

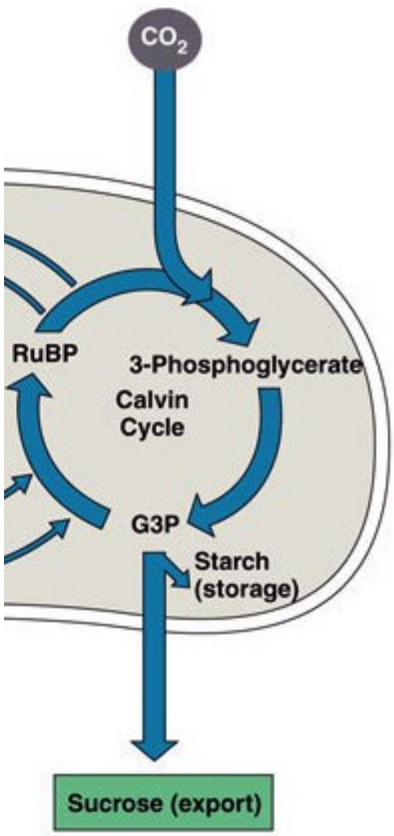
Modified from Battacone et al. (2005) J. Dairy Sci. 88:3063-3069



Split this slide into 4 slides and describe one graph at a time…


H_2O
CO_2
Light
NADP+
ADP
+ P_i
Light Reactions:
Photosystem II
Electron transport chain
Photosystem I
Electron transport chain
RuBP
3-Phosphoglycerate
Calvin Cycle
H+
ATP
NADPH
G3P
Starch (storage)
Chloroplast
O_2
Sucrose (export)


H_2O
Light
Light Reactions:
Photosystem II
Electron transport chain
Photosystem I
Electron transport chain
Chloroplast
O_2


CO_2
RuBP
3-Phosphoglycerate
Calvin
Cycle
G3P
Starch
(storage)
Sucrose (export)

Rehearse to yourself (Make a video!)

Then… Rehearse to SOMEONE ELSE for feedback!

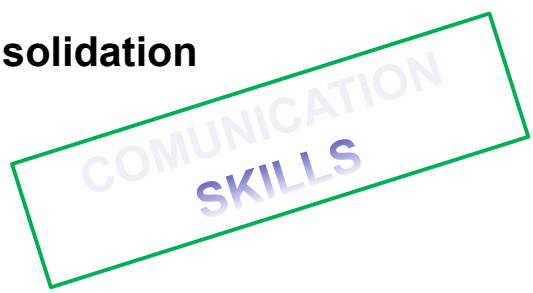
(Watch videos!)

REHEARSE until…

You feel you are COMMUNICATING EFFECTIVELY!

4 Pillars of Learning

1. **Attention**
2. **Active Engagement**
3. **(Error) Feedback**
4. **Consolidation**



(Stanislas Dehaene)

THANK YOU!!

Some Extra-Tips on Communication and Wooclap…

Good MORNING!! How are YOU DOING today? (1)

What do YOU think about…? (2)

So,
as you've seen
this is a
CONTROVERSIAL
issue!!

It sounds
interesting!

Good MORNING!! How are YOU DOING today? (1)

Please, go to the CHAT now and write the percentage of CO_2 in the atmosphere… (2)

This interesting STUDY was conducted in…. from … to …

Now, let's divide the class in groups…

Let's work!

These are some important references

No fake news...

Now, let's see the main results!!

I can't wait to see...

Now, try to guess…

Let me try...

It was…

Now, let's see if your guess is similar to…

- Text
- Tables
- Figures

Let's see if my guess was correct...

So, after this discussion in pairs/groups, I want to tell you that there was an INCREASE. Did you guess it right? This increase indicates that…

Text

Tables

Figures

Amazing!

A good way to end...

Now, let's do a Quiz (RECAP)

Let me try...

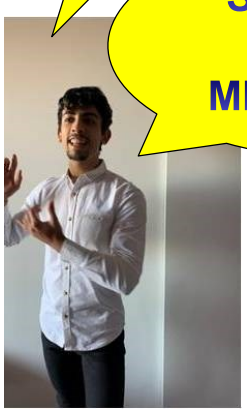
Now, let's see if you got it! Go to wooclap…

Well, let me explain this point better (or your colleague can do it), so that ALL of you can understand it...

Why was it wrong?

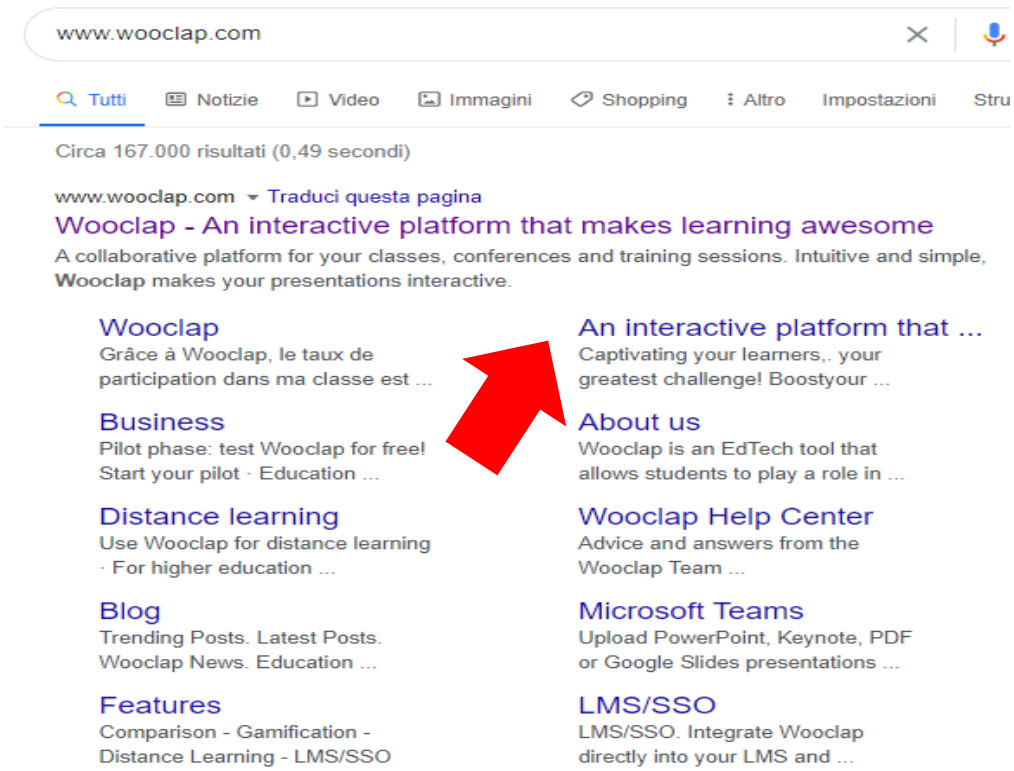
So… In CONCLUSION…

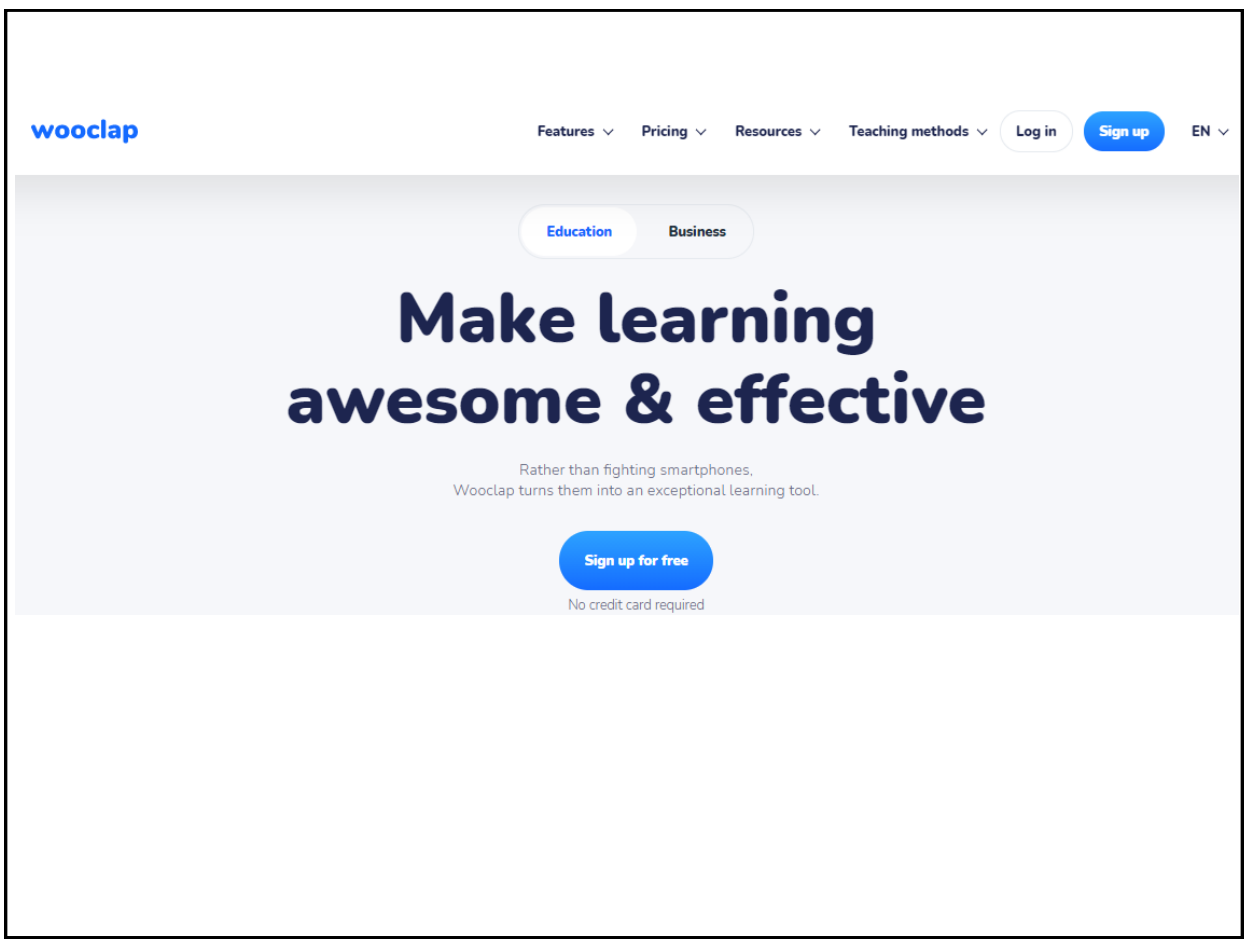
So, the TAKE HOME MESSAGE is…

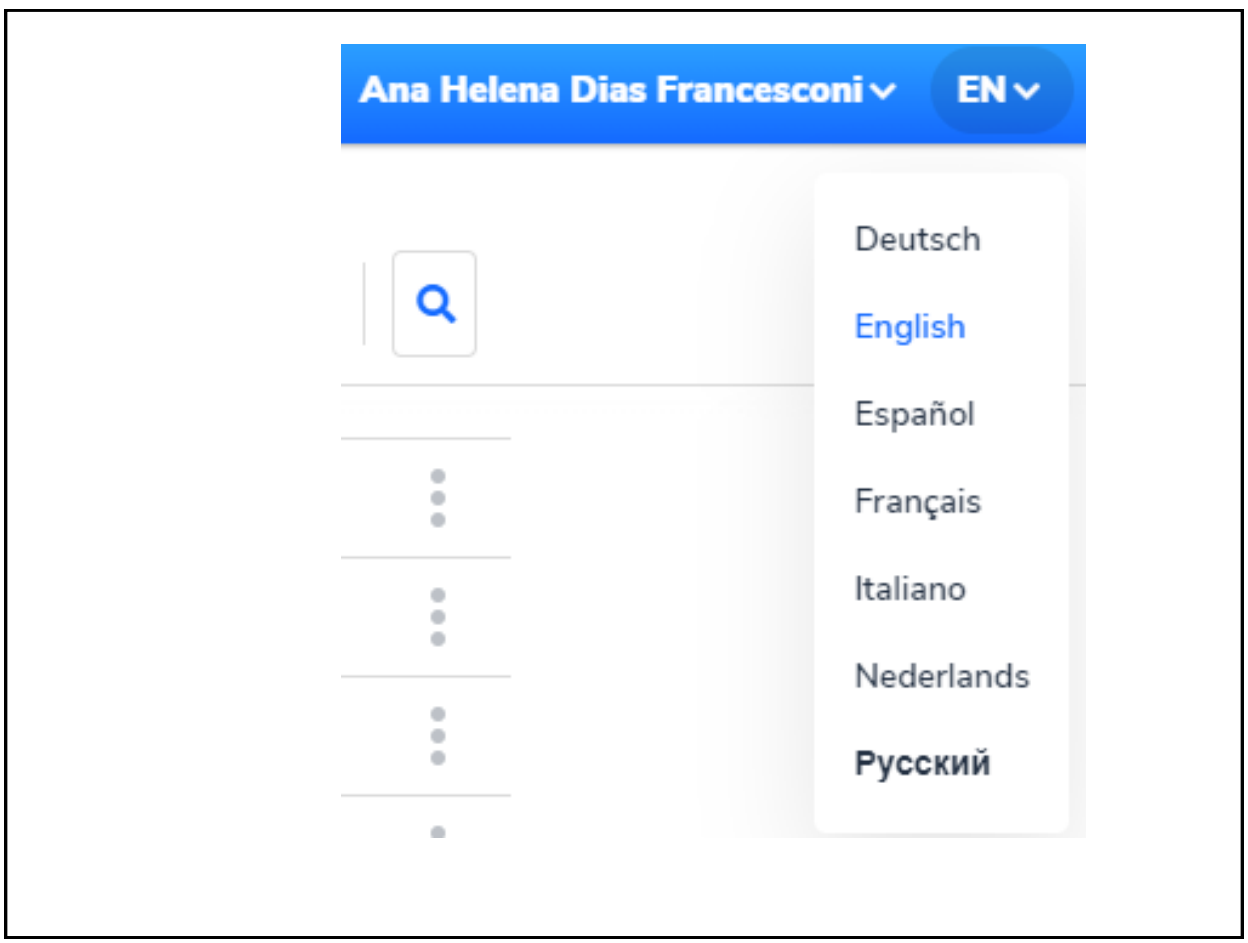


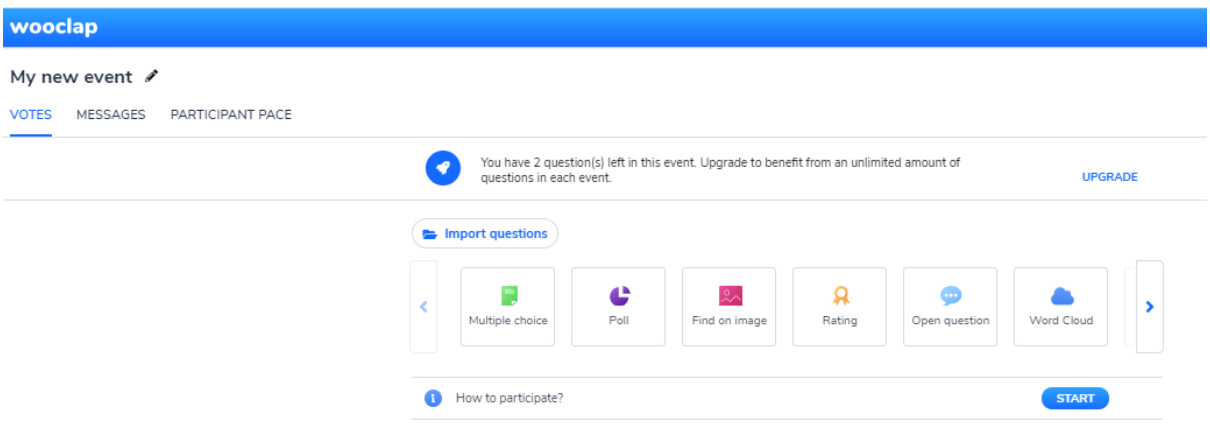
Great!
I got it!

www.wooclap.com



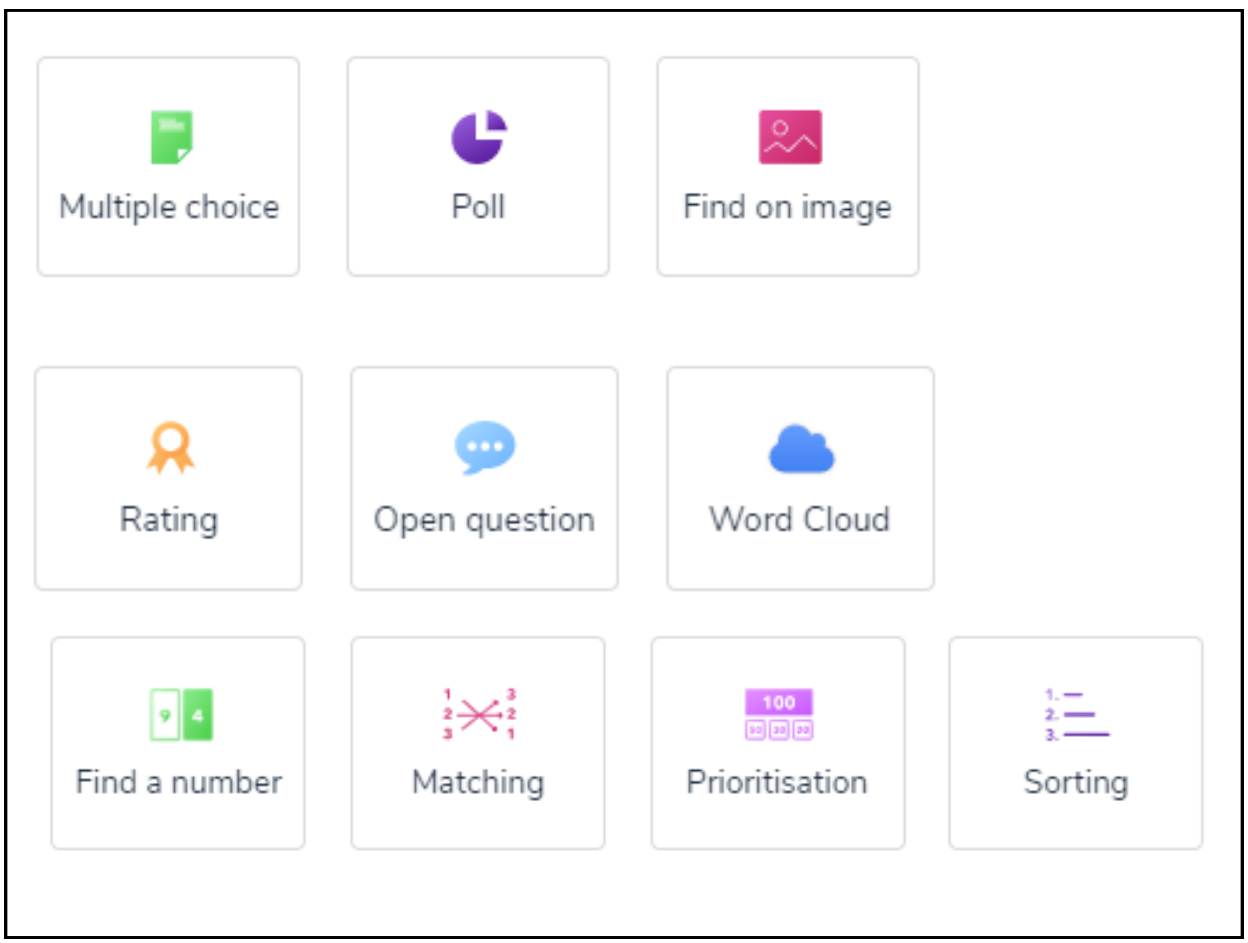

wooclap
Features
Pricing
Resources
Teaching methods
Log in
Sign up
EN
Education
Business
Make learning awesome & effective
Rather than fighting smartphones,
Wooclap turns them into an exceptional learning tool.
Sign up for free
No credit card required

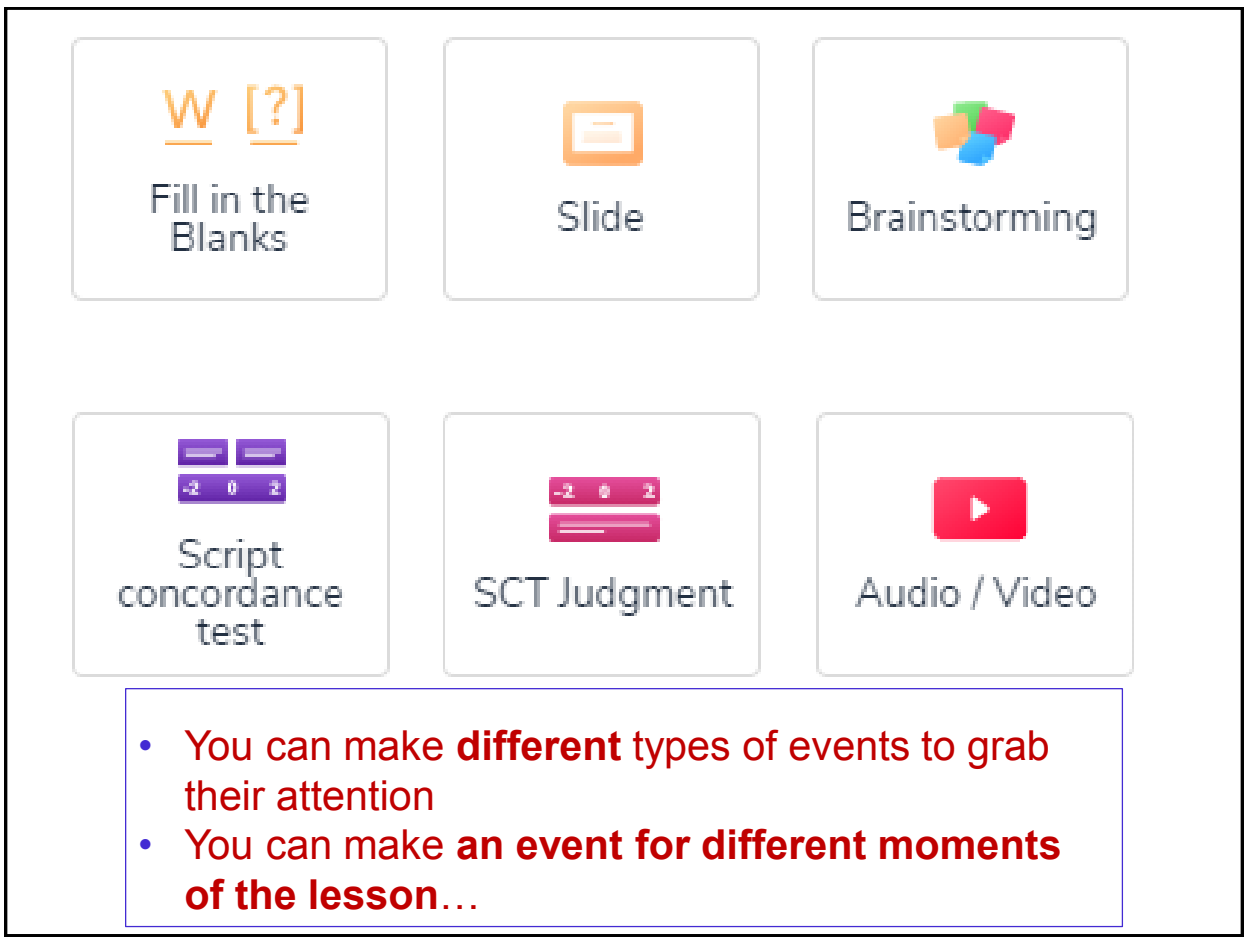

Ana Helena Dias Francesconi
EN
Deutsch
English
Español
Français
Italiano
Nederlands
Русский

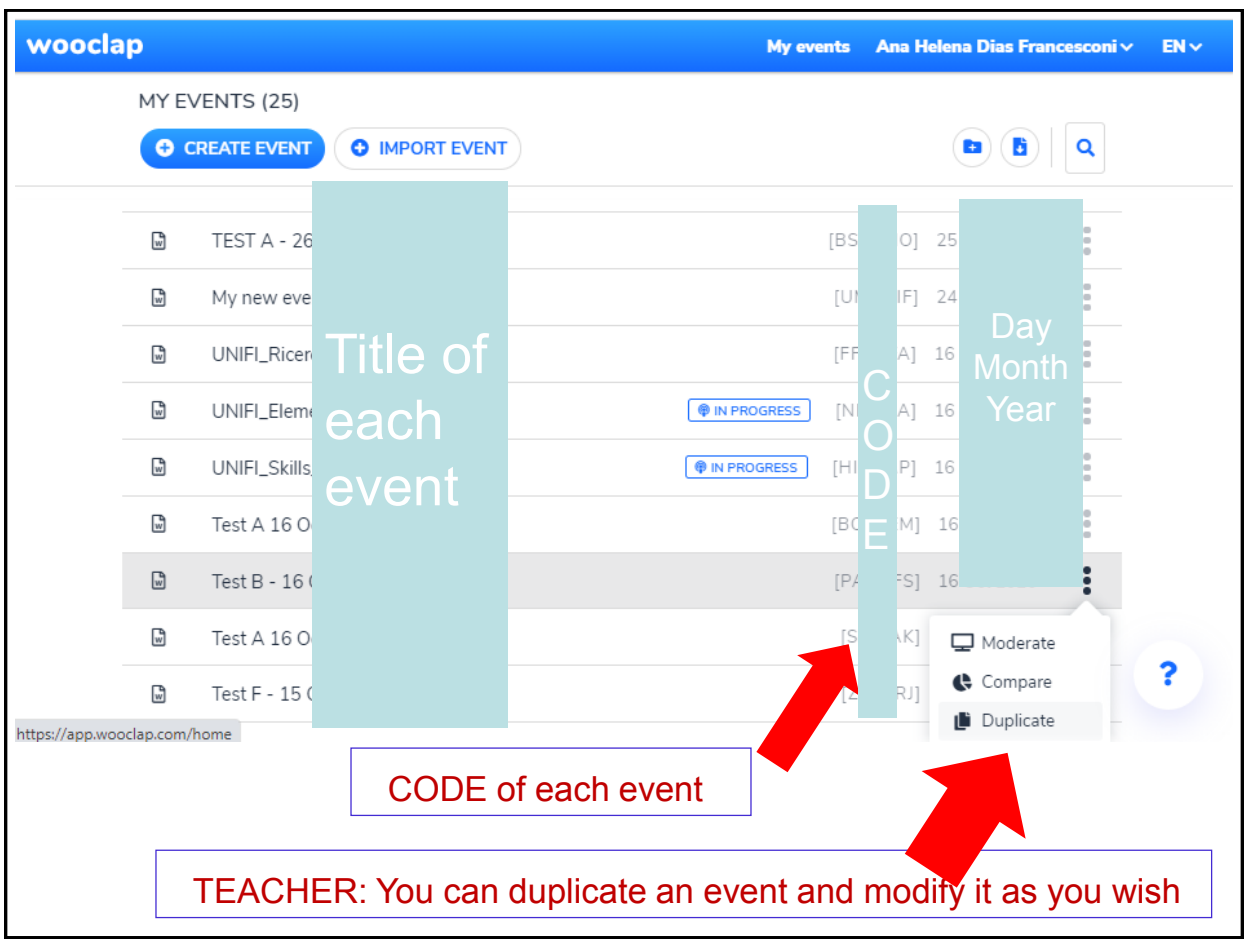


FOR FREE:

- You can make a huge amount of events
- Each event can have a MAXIMUM of 2 questions (usually more than enough…)
- You can make an event for different moments of the lesson…

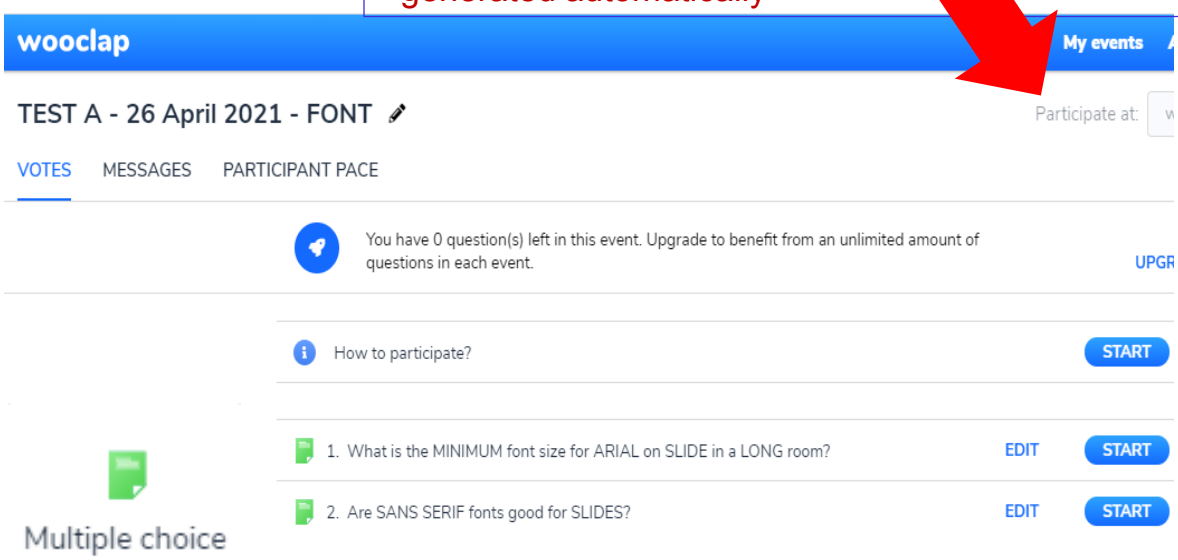

Multiple choice
Poll
Find on image
Rating
Open question
Word Cloud
Find a number
Matching
Prioritisation
Sorting


Fill in the Blanks
Slide
Brainstorming
Script concordance test
SCT Judgment
Audio / Video
• You can make **different** types of events to grab their attention
• You can make **an event for different moments of the lesson**…

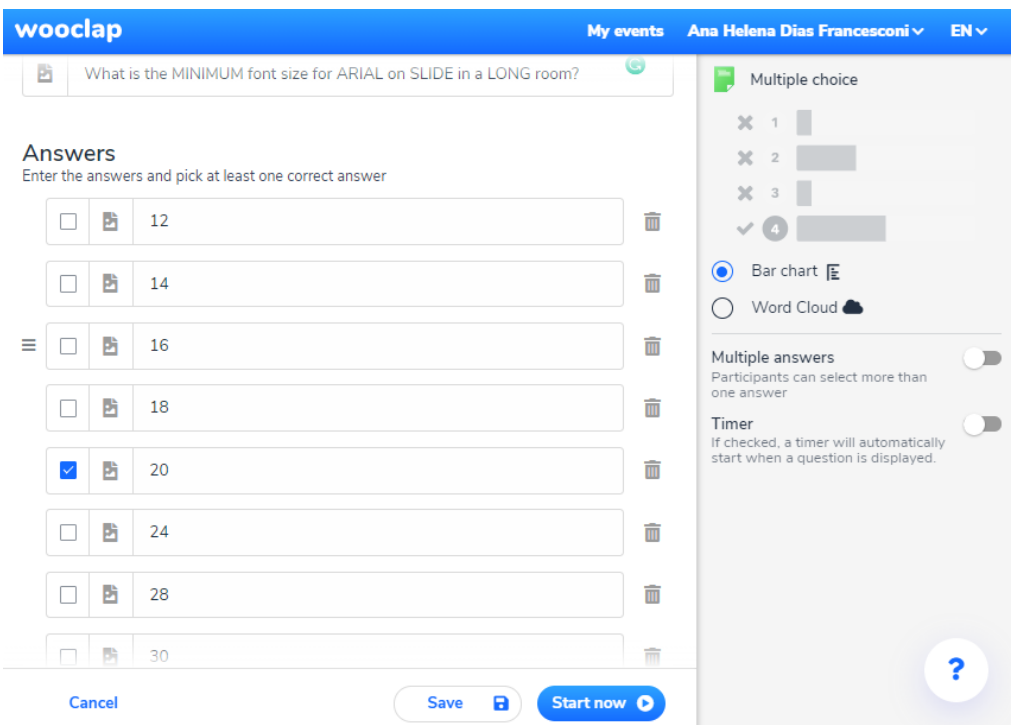

wooclap
My events
Ana Helena Dias Francesconi
EN
MY EVENTS (25)
CREATE EVENT
IMPORT EVENT
Title of each event
CODE
Day Month Year
IN PROGRESS
Moderate
Compare
Duplicate
https://app.wooclap.com/home
CODE of each event
TEACHER: You can duplicate an event and modify it as you wish

TEACHER: One event with 2 questions

On the top right you find the CODE of your event generated automatically

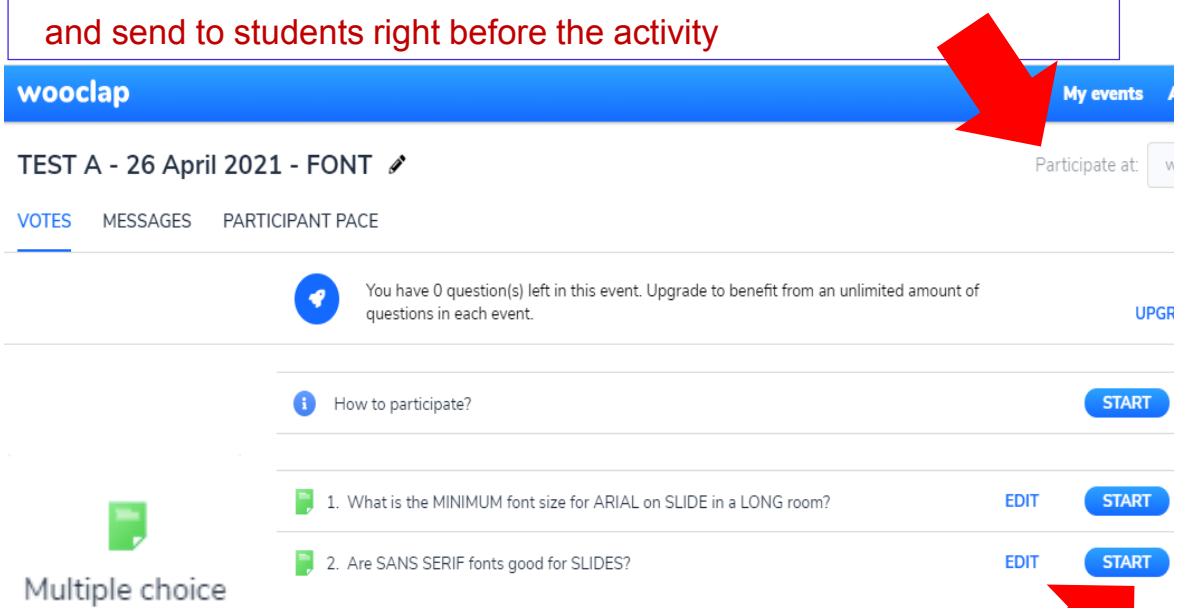


TEACHER: Add the answers and indicate the right one. In this case, ONE ANSWER is correct (do not activate «multiple answers» on the right)



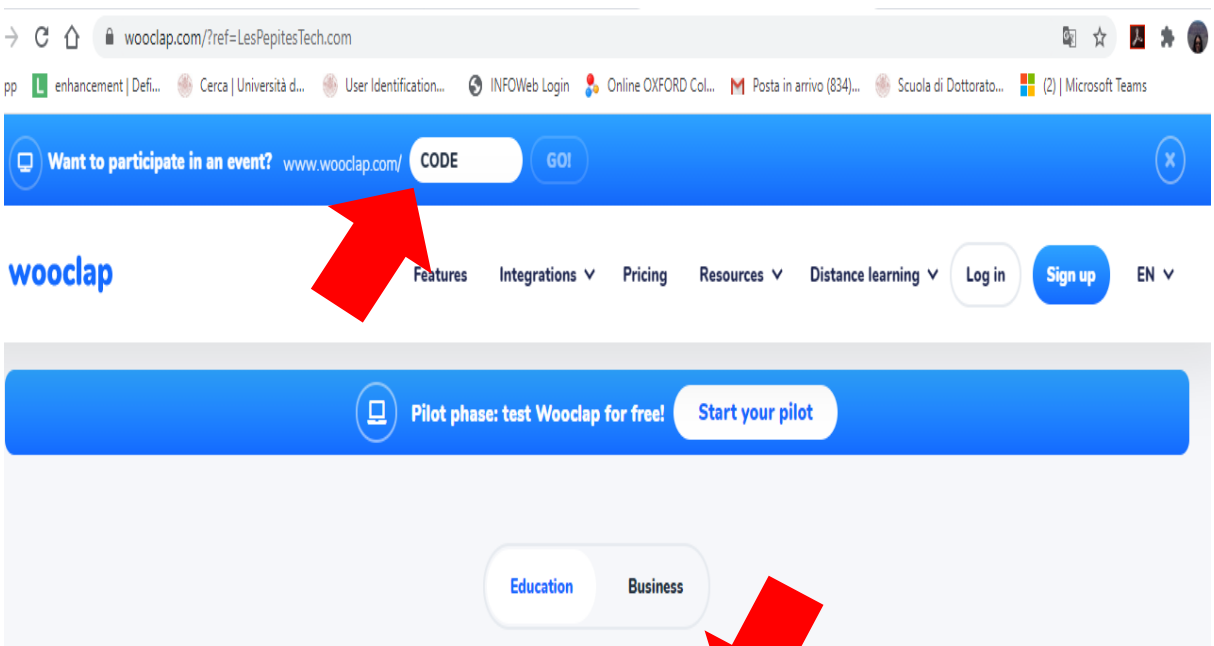
TEACHER: One event with 2 questions

On the top right you find the CODE of your event, which you can copy and send to students right before the activity



After you send the CODE to students and you are sure they are connected, click on START and the first answer will appear to them

TEACHER tells students to go to wooclap and insert code or sends them the link



https://www.wooclap.com/CODE

www.wooclap.com

How to participate?

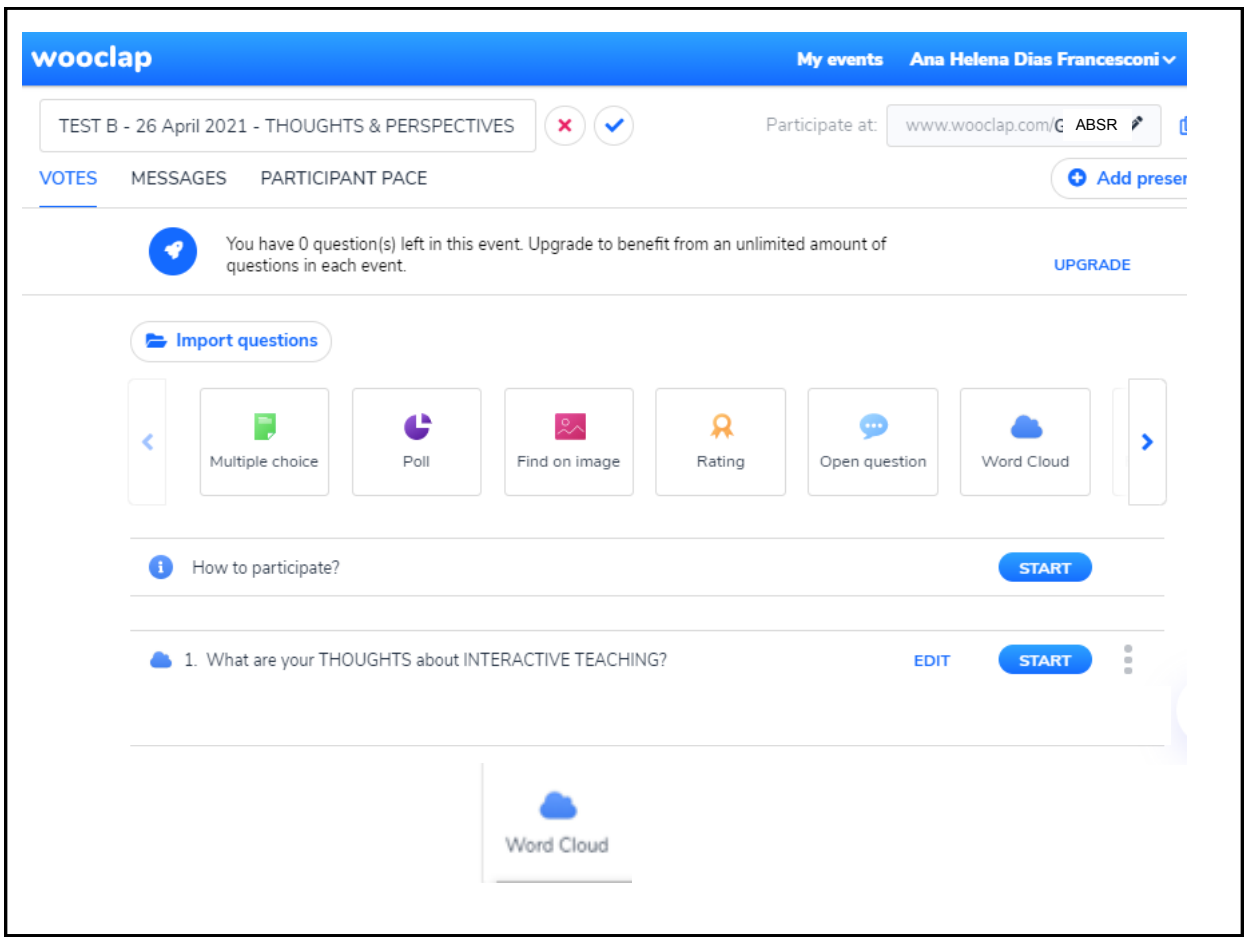
WEB

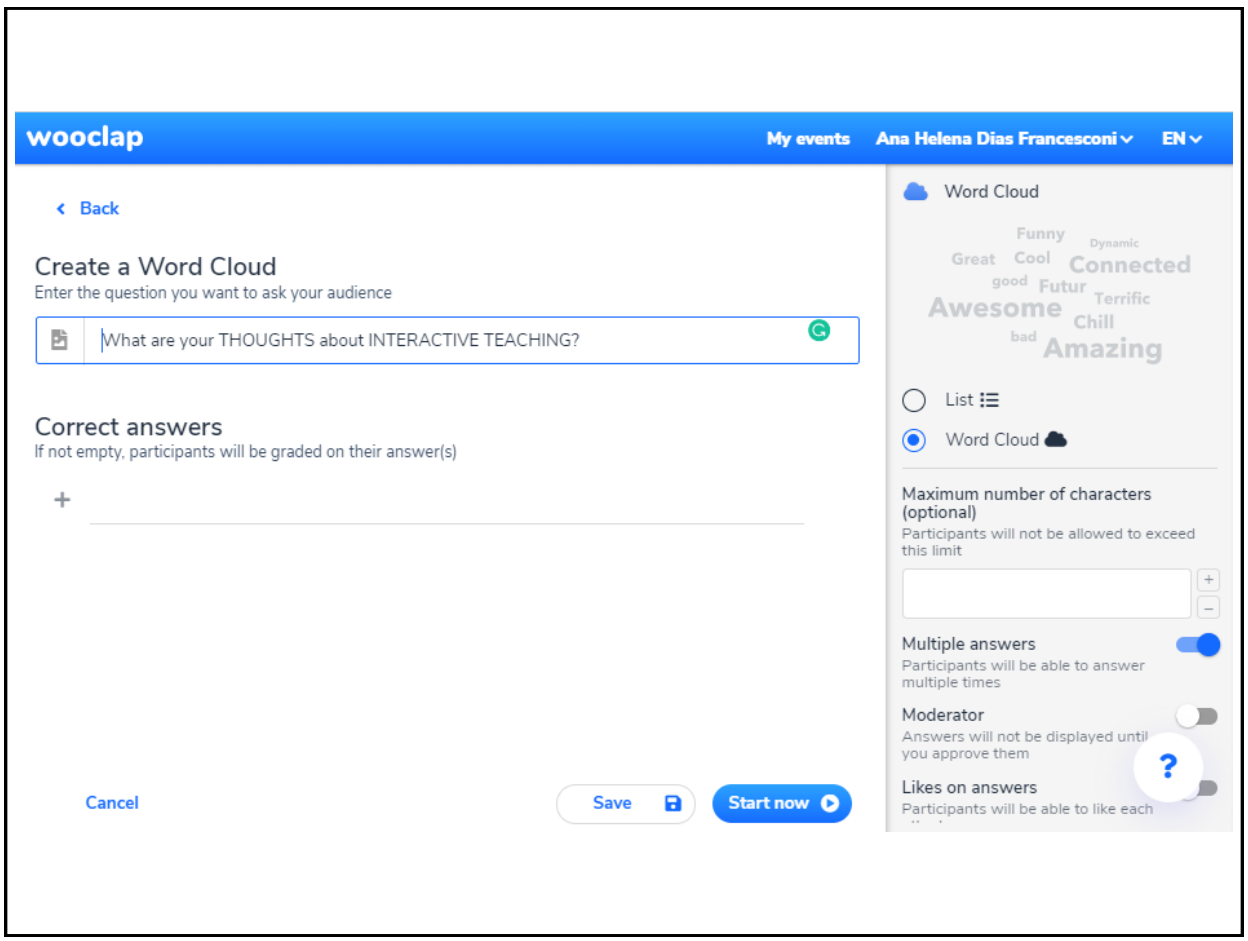
1 Connect to
www.wooclap.com/BSCFMO

2 You can participate

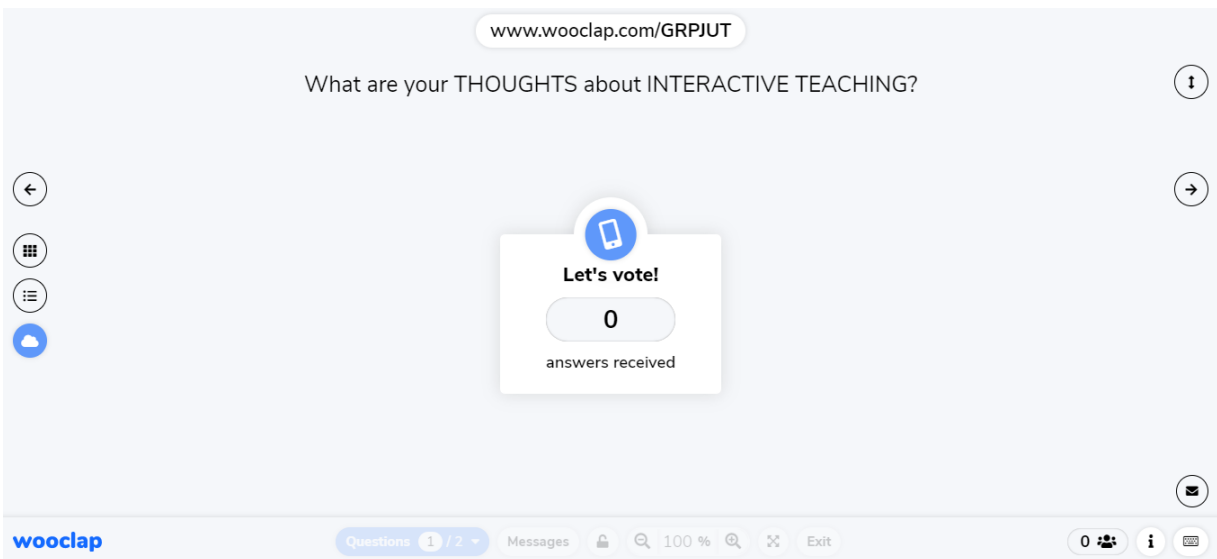
TEACHER shows this on the screen and STUDENTS, who have the same on their mobile or PC, give their answer anonimously

After all students send their answers, the TEACHER shows the class results on the screen and stimulates discussion/gives FEEDBACK


wooclap
My events
Ana Helena Dias Francesconi
TEST B - 26 April 2021 - THOUGHTS & PERSPECTIVES
Participate at:
www.wooclap.com/
ABSR
VOTES
MESSAGES
PARTICIPANT PACE
Add preser
You have 0 question(s) left in this event. Upgrade to benefit from an unlimited amount of questions in each event.
UPGRADE
Import questions
Multiple choice
Poll
Find on image
Rating
Open question
Word Cloud
How to participate?
START
1. What are your THOUGHTS about INTERACTIVE TEACHING?
EDIT
START
Word Cloud


wooclap
My events
Ana Helena Dias Francesconi
EN
Back
Create a Word Cloud
Enter the question you want to ask your audience
What are your THOUGHTS about INTERACTIVE TEACHING?
Correct answers
If not empty, participants will be graded on their answer(s)
Cancel
Save
Start now
Word Cloud
Funny
Dynamic
Great
Cool
Connected
good
Futur
Terrific
Awesome
Chill
bad
Amazing
List
Word Cloud
Maximum number of characters (optional)
Participants will not be allowed to exceed this limit
Multiple answers
Participants will be able to answer multiple times
Moderator
Answers will not be displayed until you approve them
Likes on answers
Participants will be able to like each

After all students send their answers, the TEACHER shows the worldcloud on the screen and stimulates discussion.



REMEMBER… **4 Pillars of Learning**

1. **Attention ->** grab & keep attention
2. **Active Engagement ->** encourage participation & engage
3. **(Error) Feedback ->** check understanding & give feedback
4. **Consolidation ->** let students memorize, repeat

   mechanisms that govern learning & automatize

(Stanislas Dehaene)

THANK YOU!!