SPREADING EDUCAFÉ

Hints and ideas for the active classroom.

POLITECNICO
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METID
LEARNING INNOVATION

SPREADING EDUCAFÉ

Space is important.
Even in a teaching and learning context.

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INTRODUCTION

Space is important. Even in a teaching and learning context.

The space where teaching and learning experiences happen is highly influential in how we teach and how we learn.

Many studies tackle the topic of the connection between activities and learning environments, underlining that they should be:

1. centered around the needs of both **students and teachers**;

2. supplied with technologies and furniture that allow a wide array of activities in order to **achieve the intended learning outcomes;**

3. structured with **flexible materials and furniture**, both ergonomically comfortable and multifunctional, to guarantee the possibility of organizing activities based on different teaching and disciplinary approaches.

The Pedagogy-Space-Technology (PST) framework elaborated by Radcliffe (2009), summarizes these directions, underlining the close connection and the need for coordination in terms of pedagogical approaches, spaces and technologies.

"Active learning" means creating learning contexts where students are encouraged to acquire new knowledge, abilities and competences, participating and collaborating with each other to reach common goals.

INTRODUCTION

The "active classroom" methods provide an important role to the students, who are called to get involved in different contexts. They range from individual practice to pairs or small group discussion on specific topics, to the exploration of topics and problem solving, making the entire learning experience a collective research, connection and knowledge processing experience.

The active classroom methodologies are also clearly **related to the "flipped classroom" approach**, which is based on the idea that students explore content before the lesson which is then given maximum value for the application of knowledge in a dynamic interaction with teachers and peers.

This manual aims to provide ideas and suggestions for the "active classroom", summarizing experiences gathered in Educafé: the new space for innovative teaching and learning experimentation.

EDUCAFÉ

A PLACE TO TRY OUT
THE TEACHING – SPACE – TECHNOLOGY INTEGRATION

TABLE OF CONTENTS – CHAPTER 1

INTRODUCTION

Space for testing new methodologies based on **“active classroom”** and place for the **faculty development** activities.

COLLABORATIVE AND FRONT-FACING SET

Description of the **two axes** where it is possible to simulate two classroom typology: small-medium classroom and large classroom.

ENVIRONMENT

Description of the **Educafé environment**: from the building shell to furnitures and technologies.

EDU café
METID learning innovation

EDUCAFÉ

Educafé is the new space of the Politecnico di Milano for testing methods based on "active classroom" and the integration, as fluid and effective as possible, of content/digital tools and flexible spaces/furniture in the learning experience.

Educafé is also the principal location of faculty development activities on teaching methods in which METID, the Polimi teaching-learning innovation task force, supports teachers in the process of didactic innovation, putting forward an ecosystem of resources, both formal and informal, planning support, monitoring activities, informal exchanges with fellow university and international students who have carried out innovative teaching activities.

Educafé allows to simulate two basic classroom contexts:

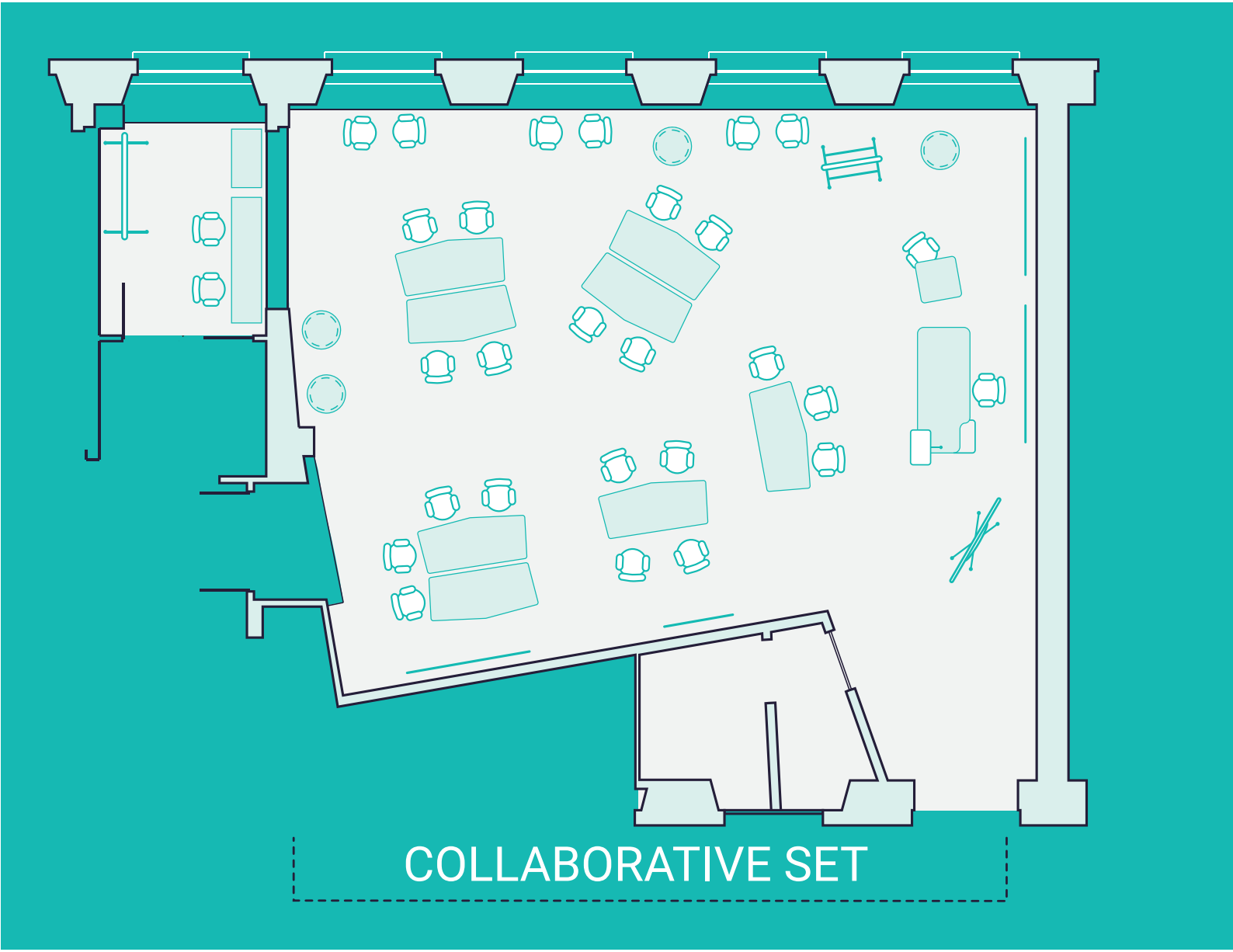
1. **a "collaborative" set** for small-medium classrooms;

2. **front-facing "technologically enhanced" set** for large classrooms.

using different combinations between the two dimensions:

1. **Technologic supports:** for an agile multi-content sharing, the use of Student Response System and the management of collaborative activities;

2. **Furnishing:** flexible and moveable to maximize the ability to reconfigure the classrooms.

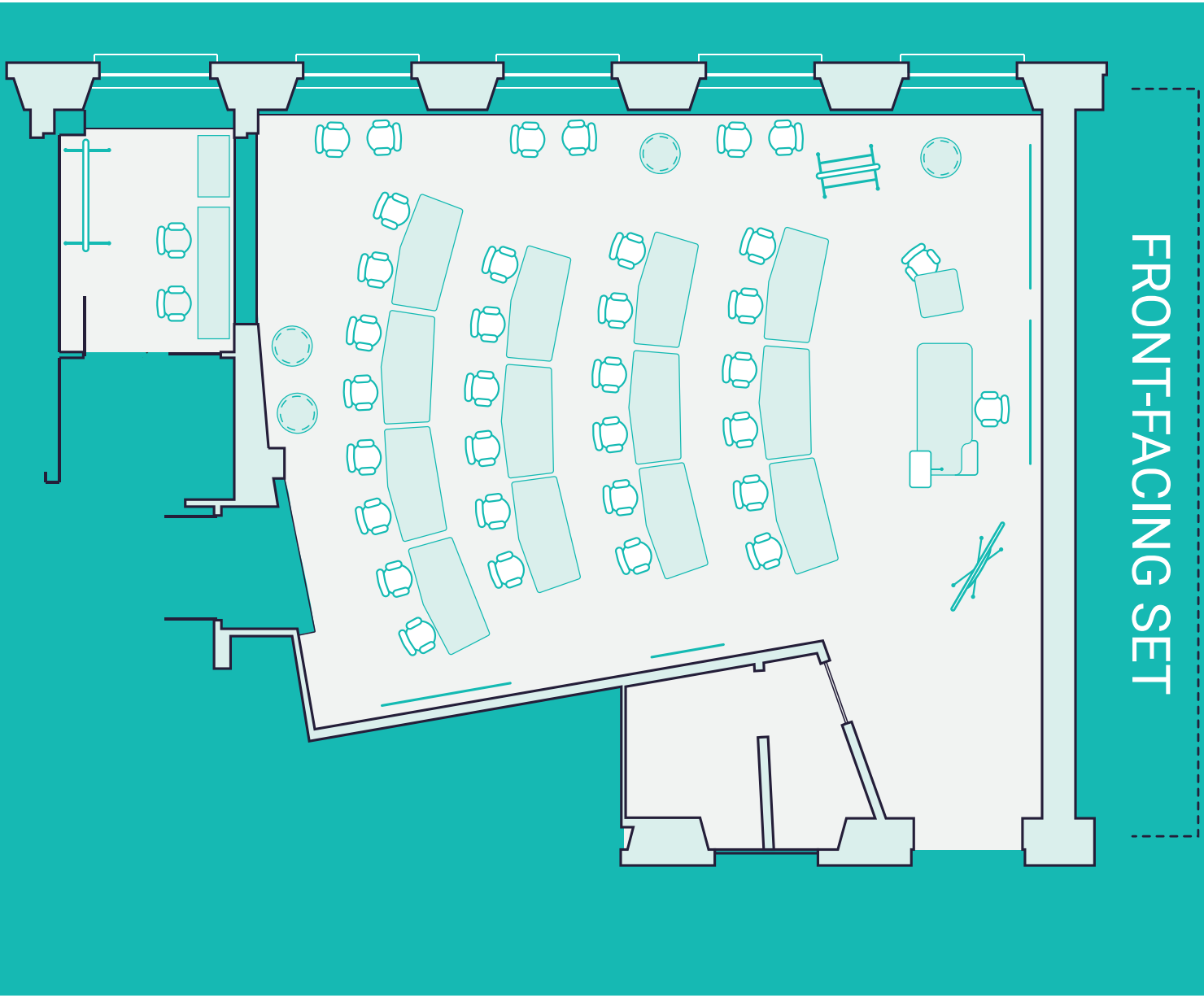

COLLABORATIVE SET

SMALL – MEDIUM CLASSROOMS
COLLABORATIVE SET

The collaborative set

aims at **facilitating the construction and sharing of content** and at **supporting the dynamic and collaborative activities** that are typical of an active classroom. It entails a wall equipped with interactive blackboards for the rapid construction and sharing of content by several people, and moveable furniture to easily and dynamically reorganize the space.

The choice of furnishing is crucial, as it must dynamically manage the forming of work groups of various sizes and adapt to the teaching needs and objectives which have been defined for that moment by the professor.


FRONT-FACING SET

LARGE CLASSROOMS

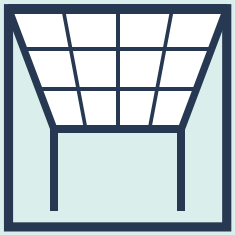
FRONT-FACING SET

The front-facing set

has been created for the integrated sharing of multiple sources, both analogic and digital, it optimizes the front-end teaching processes and fosters the evolution towards active class dynamics, configurating the furniture in order to simulate a large classroom with fixed stations.

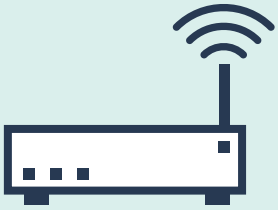
The wall is equipped with an integrated system of physical and digital blackboards that foster the creation and use of more content within the context. The network and devices configuration is structured to also allow the students to share contents.

ENVIRONMENT



BUILDING SHELL

FURNITURES



TECHNOLOGIES

BUILDING SHELL

FLOOR

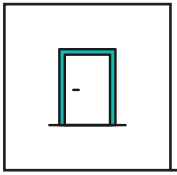
The floor is designed to be free from any element that may impede fluid movement inside the space (e.g. steps). It can also be used as a large surface to use for group activities, therefore expanding the level of interaction thanks to a more dynamic activities.

WRITING SHELL

The writing shell is a wall painted with a waterproof paint that allows for writing and erasing with specific black or colorful markers. Its function is very similar to that of a common blackboard, but it makes it possible to develop content on a larger surface, suggesting an informal use of space.

CEILING

The ceiling is equipped with a false ceiling structure that provides space to house the technical systems and to anchor projectors and cameras. Particular attention has been given to the creation of choices that maximize acoustic comfort (choosing low acoustic impact air vents and sound absorbent panels).



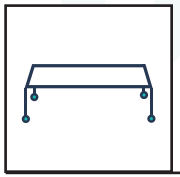
FIXTURES AND SHELVES

The doors are equipped to make sure that the environment can be safely locked to protect the tools and furniture, while the spaces under the windows are used to create shelving.

FURNITURES

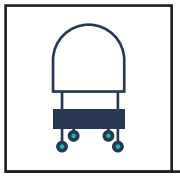
The furniture has a crucial role in the classroom dynamic, as it permits an easy reconfiguration of the space functionally to the teaching objectives; all the desks and seats have locking wheels and are height adjustable;

FURNITURES



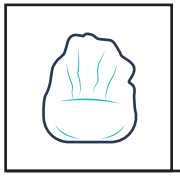
DESKS

The desks are specifically designed to accommodate active learning activities - they are extremely flexible and, thanks to their structure, they facilitate the students' work.



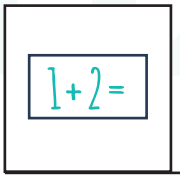
SEATS

The swivel chairs are specifically thought out to allow a quick and easy progression from one teaching model to another. The chairs with writing tablets allow individual or group work.



INFORMAL SEATS

The informal seats help to create an atmosphere of creative stimulation through brainstorming and group discussion activities.



SLATE BLACKBOARD

The slate blackboards, traditionally present in every classroom, are preserved as a support for the management in the process of change, so as to not exclusively make use of the interactive monitors for the impromptu presentation of content.

CLIPBOARDS

The small clipboards are a very useful tool for the group activities, and they can be attached to some models of work tables.

TECHNOLOGIES

Technologies component is crucial for the designing of learning spaces.
Taking the two classroom sets as reference once more, here the components currently present.

TECNOLOGIE

PROJECTORS

Two parallel projectors to manage content from two alternative sources at the same time. To manage the various sources the projectors need to be able to receive the input signals through a WI-FI network, not only through normal cable connections.

SMART KAPPS

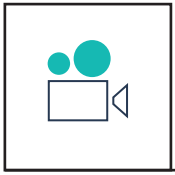
The Smart Kapps are physical whiteboard models that enable the digitalization of signs traced with markers. They allow for the sharing of content on apps on teachers' and students' devices.

CONTROL ROOM

The control room is a place to manage the projectors, the recording and lighting systems in the rooms.

INTERACTIVE DISPLAYS

The interactive displays (Smart Board Displays), differently from Smart Kapps, have a screen and one or more integrated operative systems, that allow the use of more applications and the direct interaction on digital materials coming from external or web sourced devices. Also in this case it is possible to visualize the content of the blackboard directly on other devices connected by code or link.



CAMERAS

Three cameras allow the recording of class activities, either streamed and projected or archived to produce video content for subsequent online viewing for students.

ACTIVITY CARDS

DESIGNING A CLASS ACTIVITY

TABLE OF CONTENTS – CHAPTER 2

METHODOLOGY

How to design a class activity using spaces, technologies and pedagogical approaches coherently.

ICONS' LEGEND

Icons list used to represent the activities characteristics.

ACTIVITY LEGEND

Tables for a quick consultation of the activities characteristics.

ACTIVITY CARD

Cards proposing a series of models and activities that support the design of teaching and learning activities in classes.

METHODOLOGY

How to design a class activity using spaces, technologies and teaching approaches coherently?

The second part of this manual proposes, in the form of cards, a series of models and activities created precisely as a support for the planning of teaching activities in classrooms.

Each activity is described in phases and with directions relative to the most appropriate time of the lesson to carry it out, to the pedagogic objectives, to the implementation time and to how the students are involved.

To make the choice of models simpler and more immediate, there is an **activity index** that precedes the cards, from which it is possible to compare and select them with more ease.

ICONS LEGEND

LECTURE TIME

 Review

 Start

 During

 Conclusion

 After

ARRANGEMENT ✳

 Individual

 Pairs

 Groups

WHICH TOOL

 Tool

INTENDED LEARNING OUTCOMES (ILOS)

CR Create

EV Evaluate

AN Analyze

AP Apply

UN Understand

RE Remember

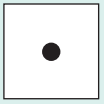
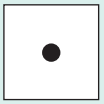
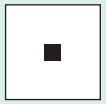
ROOM SIZE ✳

 Small class

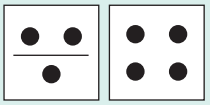
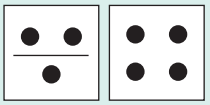
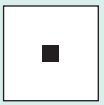
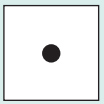
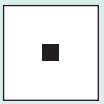
 Large class

✳ Indications on classroom size and arrangements are indicative. Activities can be modeled and adapted to your needs.

LECTURE TIME: START

	ILOS	ARRANGEMENTS	ROOM SIZE
PREVIOUS KNOWLEDGE TEST (PK TEST)	RE		
DECONSTRUCTION "MISCONCEPTION"	UN		
5W (WHY, WHAT...)	AN		
PREVIOUS KNOWLEDGE TEST WITH COMMENTS	RE		

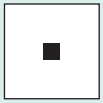
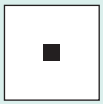
LECTURE TIME: DURING

	ILOS	ARRANGEMENTS	ROOM SIZE
COUPLE GAME (PEER LEARNING)	EV		
ANTICIPATION TEST (AA ANTICIPATIVE ACTIVATION)	UN		
PROS AND CONS	EV		
THE TRAFFIC LIGHT	AP		
REAL LIFE	EV		
SPOT ON	AP		
QUICK BRAINSTORMING	CR		

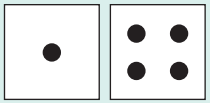
LECTURE TIME: DURING

	ILOS	ARRANGEMENTS	ROOM SIZE
THINK-PAIR-SHARE	AN	●●	■
MIGRATIONS	EV	●	■
ANGELS AND DEMONS	AN EV	●● ●●	■
METID MATCH	AN RE	●● ●●	■
AQUARIUM	AN EV	●● ●●	■
PEER ASSESSMENT	AN EV UN	●● ●●	■
T.A.G FEEDBACK (TELL, ASK, GIVE)	AN EV UN	●● ●●	■

LECTURE TIME: DURING

	ILOS			ARRANGEMENTS	ROOM SIZE
GALLERY WALK	AN	EV	UN		
R.A.F.T (ROLE, AUDIENCE, FORMAT, TOPIC)	AN	EV	UN		

LECTURE TIME: CONCLUSION

	RAA	DISPOSIZIONE	DIMENSIONI D'AULA
TAKE AWAY	RE		
THE OVERTAKING	UN		

LECTURE TIME: AFTER

	RAA	DISPOSIZIONE	DIMENSIONI D'AULA
REVIEW TEST	RE		

CARDS

CARDS

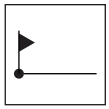
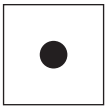
ACTI

VITI

ES

CLASS

PREVIOUS KNOWLEDGE TEST (PK TEST)

	RE		
LESSON TIME	**ILOS**	**ROOM SIZE**	**ARRANGEMENT**
Start	Remember	Manageable even in large classes	Individual

TIME

5-8 min for answering
5-7 min for the comments

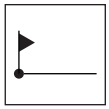
TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor proposes a quick quiz comprising 3-5 questions on key content from the previous lecture useful for the following ones.
The professor comments on the results, taking the opportunity to reiterate the key concepts.

DECONSTRUCTION "MISCONCEPTION"

	UN		
LESSON TIME	**ILOS**	**ROOM SIZE**	**ARRANGEMENT**
Start	Understand	Manageable even in large classes	Individual, pairs

TIME

3/5 min for answering
10 min for the comments

TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor proposes a series of questions (5/6) that explore the topic to be addressed in class and any associated prejudices or misconceptions. Students answer the questions individually.
The professor comments on the answers.

5W (WHY, WHAT, ...)

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
Start	Analyze	Manageable even in large classes	Individual, pairs

TIME

3 min for answering
5/10 min for comments

TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor proposes a single multiple-choice question that encourages students to explore one of the key aspects of a topic by means of the 5 Ws (Why, What, Who, How, When).
Students answer individually.
The professor comments.

COUPLE GAME

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Evaluate, reflect	Manageable even in large classes	Pairs

TIME

2 min for answering
3/5 min for discussion in pairs
1 min for answering
5 min for final comments

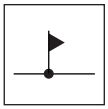
TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor sets a short online test (1-3 questions) on the topic. Students answer individually.
The right answers are not given, but students are invited to compare their answers in pairs.
The same question is answered again (individually) and this time feedback is given.
The professor comments on the result.

ANTICIPATION TEST (AA ANTICIPATIVE ACTIVATION)

	UN		
LESSON TIME	**ILOS**	**ROOM SIZE**	**ARRANGEMENT**
During	Understand, discover	Manageable even in large classes	Individual, pairs

TIME

3 min for answering
2 min for the comments

TOOL

Student Response System
(Socrative, ecc.)

PHASES

Before explaining a "difficult" topic or one that requires particular concentration, the professor proposes an "anticipatory" test that requires the formulation of intuitive answers, before having the information required to provide a cognitive response.
Test with 1-2 questions.
Students answer the questions.
The right answers are not given, but the professor explains the topic, urging students to pay attention also in order to understand whether or not they answered correctly.
At the end, the professor returns to the test, commenting on differences between the answers given and the right ones.

PROS AND CONS

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Evaluate, Reflect	Manageable even in large classes	Groups (3-4 students)

TIME

5 min for answering
5-10 min for the comments

TOOL

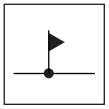
Student Response System
(Socrative, ecc.)

PHASES

The professor sets a test with two open-ended questions related to a specific topic/situation:
- indicate 2 positive aspects/advantages/strengths
- indicate 2 negative aspects, disadvantages, weaknesses

Students work in small groups (3-4) in order to limit the total number of answers and encourage discussion.
The professor comments.

THE TRAFFIC LIGHT

	AP		
LESSON TIME	**ILOS**	**ROOM SIZE**	**ARRANGEMENT**
During	Apply	Manageable even in large classes	Individual, pairs, groups

TIME

1 min for the survey
5-10 min for the presentation

TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor proposes an activity with the aim of producing output (short composition, exercises to be solved). At the end of the activity, the professor conducts a survey to discover who is willing to present their work. Students who accept are given a "green light": one or more, chosen at random, will be asked to present their answers. The activity is repeated several times throughout the year: students who accumulate a certain number of "green lights" will be awarded a prize at the time of the final examination. If a selected student does not give the right answer, he or she will lose the "green light" for that lecture or even more than one, depending on the professor's strategy.

N.B. It is important to implement this method after a trial run, so that everyone understands how it works!

REAL LIFE

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Evaluate, reflect	Manageable even in large classes	Individual, pairs, groups

TIME

10 min for answering
5-10 min for the comments

TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor puts forward a series of real-life examples/cases in which the content of the lecture is applied and asks questions to stimulate reflection. Students answer individually or in pairs/small groups. The professor comments.

TAKE AWAY

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
Conclusion	Remember, consolidate	Manageable even in large classes	Individual, pairs

TIME

10 min for answering
5 min for the comments

TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor prepares 3/5 questions on the content explained during the lecture with the aim of consolidating the knowledge and skills constituting the lecture's fundamental concepts to be taken away.
Students answer individually or in pairs.

THE OVERTAKING

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
Conclusion	Understand	Manageable even in large classes	Individual, pairs

TIME

10 min for answering
5 min for the comments

TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor prepares a series of questions about the contents of the lecture and sets a competition that can be managed in groups or individually.
Students have to try to answer the greatest number of questions in the least time possible.
The professor follows the "challenge", emphasizing its competitive dimension and declaring the winner(s).
The professor comments on the answers.

PREVIOUS KNOWLEDGE TEST WITH COMMENTS

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
Start	Remember	Small	Individual

TIME

Short (<10-15 min)
3/5 min for answering
10 min for the comments

TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor proposes a quick quiz comprising 3-5 questions on key content from the previous lecture useful for the following ones.
The professor can comment on the results in a large class, while, in a small class, it is easier for him or her to encourage students to comment right and wrong answers, thus triggering a discussion.

SPOT ON

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Apply	Small	Groups

TIME

Short (<10-15 min)
7-8 min for answering
2-3 min for reviewing
5 min for the comments

TOOL

Shared online sheet (e.g. spreadsheet of the Google Drive suite editable by the link recipient).
Email to send/receive the link.

PHASES

The professor asks a question that requires critical reflection on a key topic of the lecture.
Working in small groups, the students formulate an answer and post it on a shared online sheet. The professor gives some time to read the answers of the other students and to add his own, if necessary.
At the end of the activity, the professor reads, comments and encourages discussion.

N.B. To limit the comments time, the professor can choose to read only a couple of answers and then ask who gave a significantly different answer, only commenting any "variations on the theme".

QUICK BRAINSTORMING

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Create, design	Small	Individual

TIME

short (<10-15 min)
2-3 min for designing
5-10 min for the comments

TOOL

Shared online sheet (e.g. spreadsheet of the Google Drive suite editable by the link recipient).
Email to send/receive the link.

PHASES

The professor asks an open-ended question with open-ended answers (e.g. What name can we give this product? How can we solve this problem?).
Students freely enter one idea per cell in a column of a shared sheet, trying also to draw inspiration from the answers of other students to generate new ideas.
At the end of the activity, the professor reads and comments.

N.B. If there are more than 20 students, the time for devising must be kept under 2 minutes in order not to generate too many items.

THINK-PAIR-SHARE

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Analyze	Small	Pairs

TIME

Medium (15-30 mins)
2-3 mins for individual reflection
5-10 mins for the discussion in pairs
5-10 mins for the comments

TOOL

Shared online sheet (e.g. spreadsheet of the Google Drive suite editable by the link recipient).
Email to send/receive the link.

PHASES

The professor asks a question that refers to a student's previous experience or studies.
The students reflect individually on the answer and take note of it.
The professor then asks a question whose answer may be inspired by the experience previously mentioned.
In pairs, the students formulate an answer and share it on a poster or on a shared online sheet.
At the end of the activity, the professor reads and comments.

MIGRATIONS

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Evaluate	Small	Individual

TIME

Medium (15-30 mins)
3 mins for each movement
3 mins for the comments

TOOL

The use of particulare tools **is not required**

PHASES

The professor discusses a topic and asks students to move to various areas of the room that represent a "position" on the topic. At this point, he or she provides new information and asks the students to confirm or change their position.
A spokesperson for each area must explain why they have taken that position;
then, the students can confirm or change their position.

ANGELS AND DEVILS

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Analyze, evaluate, argue	Small	Groups

TIME

Medium (15-30 mins)
1 mins for each spokesperson (tot max 8 min)
5-10 mins for the final discussion

TOOL

The use of particulare tools **is not required**

PHASES

The professor proposes a topic.
The class is then divided into two parts ("angels" and "demons").
Divided in turn into 3-4 groups, the angels and demons discuss the topic, highlighting respectively either its positive aspects (strengths, opportunities, synergies) or its negative aspects (weaknesses, risks, conflicts).
One spokesperson for each group approaches the professor's desk.
The angels and demons, lined up on opposite sides, alternately present their positions. Discussion and final summary by the professor.

METID MATCH

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Remember, understand, analyze	Small	Groups

TIME

Long (30-60 mins)
5 mins to present the two topics
10-30 mins working in groups
2 mins per presentation per spokesperson (no more than 10 groups, 5 per topic)
10 mins for the final discussion
2 mins for the final vote

TOOL

Shared online sheet (e.g. spreadsheet of the Google Drive suite editable by the link recipient).
Email to send/receive the link.

PHASES

IThe professor proposes two topics and shares an online sheet with a list of questions that explore the two topics in a logical sequence (e.g. definitions, cases, applications, tools, etc.).
Students are divided into small groups and associated with a question.
Each group devises and formulates an answer to the question, creating a series of links or a short presentation.
Following the correct sequence, one spokesperson per group answers the question, thus briefly exploring each of the two topics.
The best explored topic is then voted.

To conduct the activity when time is short, the professor can guide the exploration of a single topic and of specific cases and prepare visual aids to guide the presentation made by the spokespeople..

ACQUARIUM

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
During	Analyze, evaluate	Small	Groups

TIME

Long (30-60 mins)
10 mins for answering
5 mins for the comments

TOOL

The use of particulare tools **is not required**

PHASES

The professor discusses a topic.
The students are divided into groups of 10: 4 form an inner circle, 6 form an outer circle.
The 4 in the inner circle (the aquarium) manage a sort of "round table": a first round, in which everyone gives their opinion in a limited period of time, is followed by a free discussion of the topic proposed by the professor. The outer circle listens carefully, without interfering.
The inner circle is then replaced by 4 people belonging to the outer circle. 2 people remain permanently in the outer circle, tasked with managing the times and keeping track of the salient points of the discussion; also, during the final phase, they will act as the spokespeople of the group, sharing the outcome with the class.

PEER ASSESSMENT

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
Review	Understand, analyze, evaluate	Small	Groups

TIME

15-30 mins for the assessment
5 mins for the recommendations
10 mins for the professor's review

TOOL

The use of particulare tools **is not required**

PHASES

The professor asks the students to create a product.
The professor gives the students a sheet (detailing the criteria/indicators to be assessed) for peer assessment.
The students/work groups are divided into macro-groups comprising 3 groups.
They exchange their products, presenting them briefly, assessing them on the basis of the sheet provided, and making 3 recommendations for each of the other two groups on how to improve the product.
The professor reviews the projects of the macro-groups, and comments and evaluates the recommendations. The assessment, with comments and recommendations, becomes part of the output assessed as part of the examination.
Final summary/comments by the professor.

T.A.G. FEEDBACK (TELL, ASK, GIVE)

	CA AN VA		
LESSON TIME	**ILOS**	**ROOM SIZE**	**ARRANGEMENT**
Review	Understand	Small	Groups, pairs

TIME

Long (30-60 mins)
15 mins for a light assessment

TOOL

The use of particulare tools **is not required**

PHASES

This is an informal and "light" peer assessment method that aims to arouse interest in peer work.
The students/work groups are required to analyze the work of another student/group and to:
- outline one or more positive aspects of the project (Tell);
- ask a question, e.g. why did you use? (Ask);
- give one or more suggestions (Give).

The three elements should be written down and can form part of the output assessment portfolio, both for the "assessed" and for the "assessor". The activity gets students used to taking a reflective and positive attitude during critical analysis.

GALLERY WALK

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
Review	Understand, analyze, evaluate	Small	Groups

TIME

30 mins for the "visit" and assessment of macro-group projects
15 mins for the final summary

TOOL

The use of particulare tools **is not required**

PHASES

The output is displayed in a sort of "gallery" so as to be viewed with ease. Students are divided into four "macro-groups" defined by a color (RED_BLUE_YELLOW_GREEN).
The four "macro-groups" are then paired (RED with YELLOW, GREEN with BLUE).
In turn, each macro-group leaves its position to visit the "stands" of its paired macro-group, providing both oral and written feedback and suggestions (e.g. different colored post-its stuck to the output or in a dedicated space).
The professors review each project and can also give a collective assessment of the comments left by each macro-group. Students are thus motivated to follow closely the reviews at least of their paired macro-group.
Final summary/comments by the professor.

R.A.F.T. (ROLE, AUDIENCE, FORMAT, TOPIC)

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
Review	Understand, analyze, evaluate	Small	Groups

TIME

30 mins to prepare the presentation
10 mins for the presentation (5 per group)
10 mins to fill in the assessment sheet
10/15 mins for the final summary (max 3 mins per group)

TOOL

The use of particulare tools **is not required**

PHASES

Each group chooses:
- a key Topic relating to its project,
- a Role to play (project engineer, policy maker, entrepreneur, etc.),
- an Audience to whom to present the content (financiers, institutions, citizens, etc.),
- and the presentation Format.

The audience assesses the presentation by filling in a sheet (detailing the criteria/indicators to be assessed) prepared by the professor.
Final summary by the professor, who chooses two or three completed assessment sheets, asks for them to be presented, and takes them into account in the final assessment.

REVIEW TEST

LESSON TIME	ILOS	ROOM SIZE	ARRANGEMENT
After	Remember, consolidate	Large	Individual

TIME

Unlimited

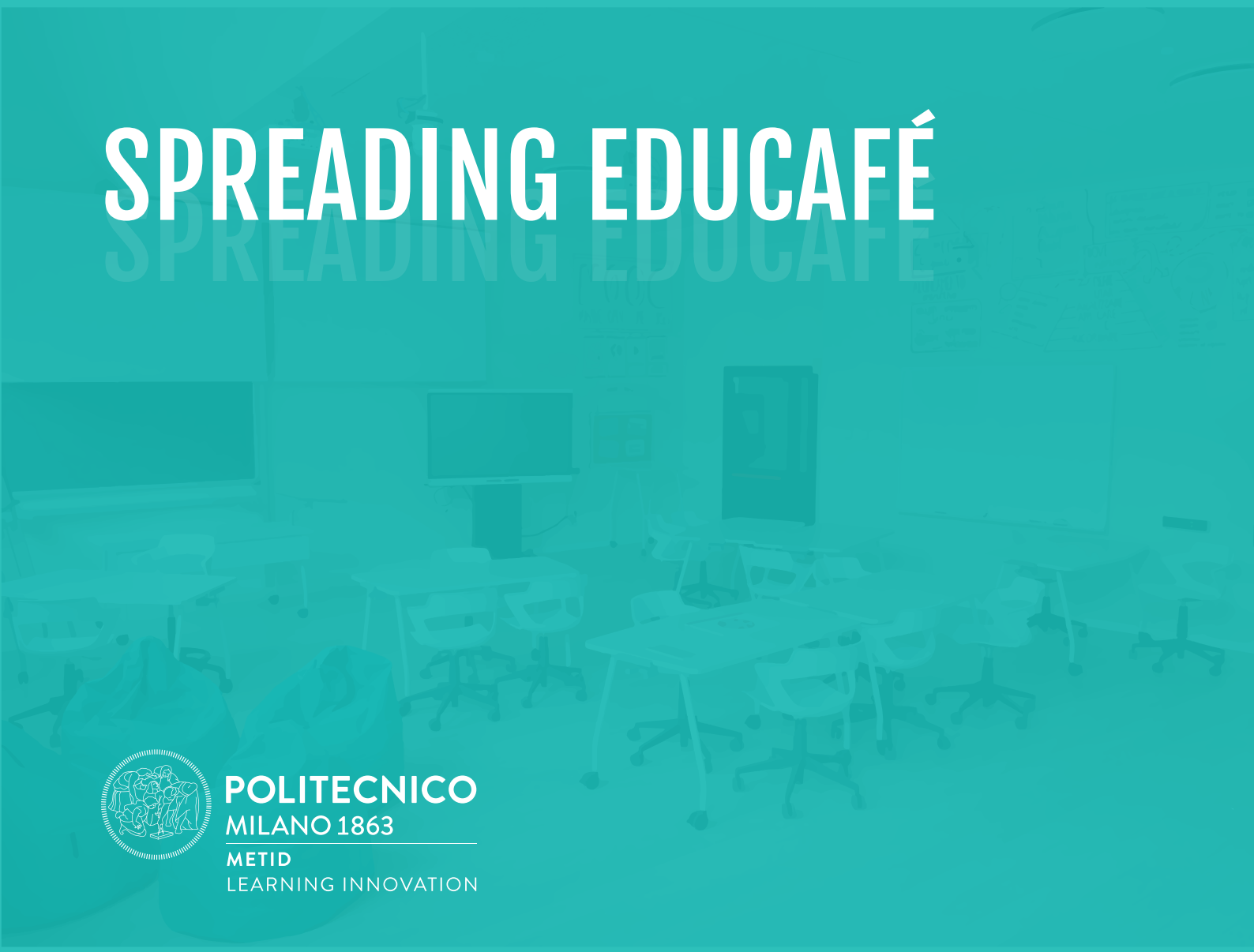
TOOL

Student Response System
(Socrative, ecc.)

PHASES

The professor pools together all the tests used during a "block" of lectures into a single comprehensive test with numerous questions of varying difficulty and type concerning the topics covered, in all cases providing extensive feedback and references to the study material.
The test will remain open for the duration of the course and will always be accessible to students.
Students take the test to consolidate their knowledge and use a forum for clarifications.

SPREADING EDUCAFÉ



POLITECNICO
MILANO 1863
METID
LEARNING INNOVATION