

IDENTITIES

Enlightening
Interdisciplinarity
in STEM for Teaching

SESSION 2

Module on the evolution of the COVID

Interdisciplinarity at the service of Society

SESSION 1

Submodule 1

Role of **interdisciplinary explorer**

Make explicit with participants the **initial question(s) related to interdisciplinarity on the selected topic** and first look for answers

Science and interdisciplinarity

← → Society ← → Secondary school

Submodule 2

Role of **student experiencing interdisciplinarity**
Let **participants experience an adaptation of a teaching proposal** (in her own shoes) to make interdisciplinarity emerge, distributed into some particular “lines of inquiry” about the Covid evolution

SESSION 3

Submodule 3

Role of **interdisciplinary analyst**

Collective analyse the teaching experience that comes to be experienced

Epistemological analysis of the disciplinary (un)balances and of interdisciplinarity

Linguistic analysis of interdisciplinarity

Submodule 4

Role of **interdisciplinary designers and teacher**

Immersion in **Secondary school practices** related to the activities developed previously

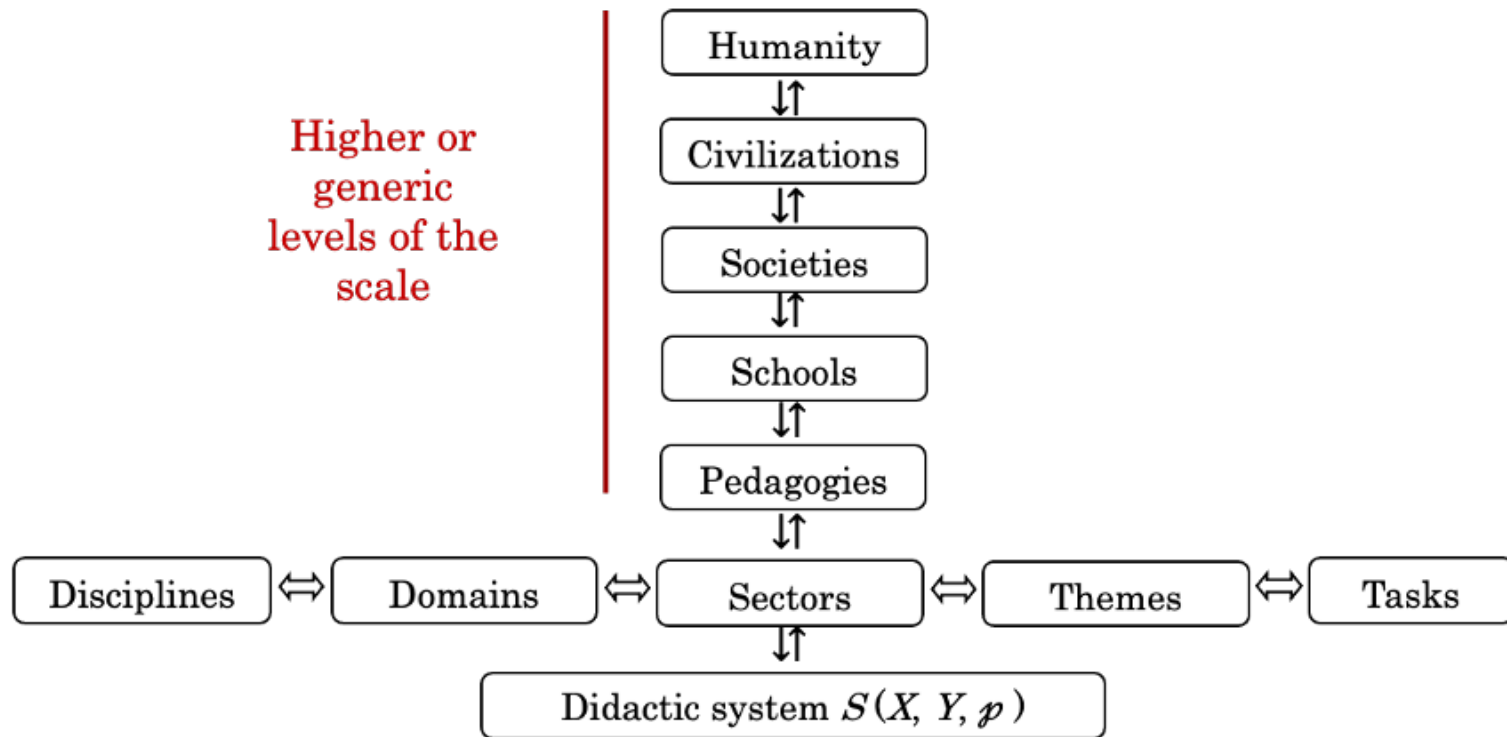
→ **Ecological analysis for interdisciplinarity**

SESSION 3

Let's now think as we were (or we are) **designers** of similar activities and **teachers** implementing these activities....

- Which questions, through which activities, could be transposed into Secondary school education? If possible, specify or exemplify which ones.
- Which opportunities or conditions would be offered that facilitates this transposition towards Secondary school?
- Which difficulties, limitations or constraints would hinder or could prevent to implement the inquiry into this open questions into Secondary schools?

Scale of levels of didactic co-determinacy (Chevallard, 2002)



Lower levels of the scale, specifics to the discipline

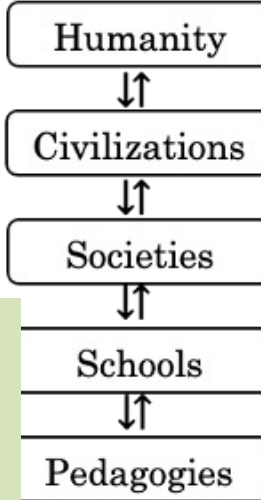
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Teacher knowledge, traditions of teacher profession → TEACHING AS A SCIENCE

Need of new curricula with collaboration among researchers and teachers

New means of communication

Official role of some disciplines, such as Computer Science. An **opportunity to rethink curricula and how disciplines are defined in the schools.**

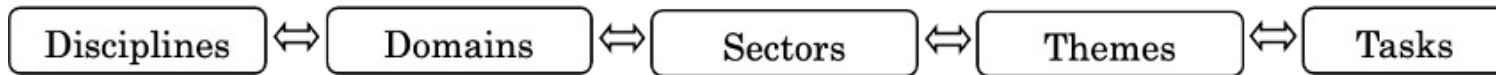


Get closer what it is around us, bring to **school real and legitimated questions** with social relevance

How to think critically analyse what is disseminated to society?

Need of collaboration among teachers of different disciplines, the ones that have “more tradition” with the ones that in the school usually remains independent, such as “maths”, “science” with “language”

What is in the common ground for them? What is it require to be done beforehand? You can create a difficult position to be.



Reduce the tools to the ones that are closer or more pertinent for Secondary school education or reduce the questions (for instance: exponential growth)

Submodule 4. Role of interdisciplinary designers

- Presentation of educational activities for secondary school students on the topics of the module. Q&A.
- Conclusion of the module and debate for the transposition of the topics of the module in school settings.

The image is a composite of two main visual elements. On the left is a presentation slide with a dark background and a central orange rectangle. The slide contains the 'IDENTILES' logo and text about a study on computational simulations. On the right is a poster for the American Educational Research Association's 2021 Virtual Annual Meeting, titled 'Accepting Educational Responsibility'. The background of the entire image is a black field populated with numerous small, colorful stick figures in red, green, and white.

IDENTILES Enlightenment
Interdisciplinarity
in STEM for Teaching

Computational simulations as citizenship tools: a study with university physics and mathematics students

Eleonora Barelli, Olivia Levrini
University of Bologna
Department of Physics and Astronomy

2021, April 9th - AERA Annual Meeting

AMERICAN EDUCATIONAL RESEARCH ASSOCIATION
ACCEPTING EDUCATIONAL RESPONSIBILITY
2021 VIRTUAL ANNUAL MEETING
APRIL 9-12, 2021



COVID module: Science for Society: Decoding Coronavirus evolution

Q0.1: How have the S-T-E-M disciplines interacted to investigate the evolution of COVID-19? What answers have been given and how have their advances spread to society?

Q0.2: What role does it play and how can we analyze interdisciplinarity when addressing complex issues related to the evolution of COVID-19?

Q0.3: How can this interdisciplinary practice transposed and diffused to secondary schools?