

Enhancing active  
teaching/learning  
with ICT

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# Outline

- What is active learning/teaching (ALT)?
- Nature of ALT compared with nature of ICT
- Misconceptions in using ICT in education
- Promises of enhancing education with ICT



***"I think it's an exaggeration, but that there's a lot of truth in saying that when you go to school, the trauma is that you must stop learning and you must now accept being taught."***

***— Seymour Papert***

# Nature of active learning/teaching

(Pešikan, 2010)

- Interactivity
- Active co-construction
- Knowledge dependent
- Metacognition is a precondition of learning
- Content dependent
- The social nature of learning
- Nomothetic and idiographic
- Education as artificial development

# Different media and learning/teaching

What is the best way to learn some content:

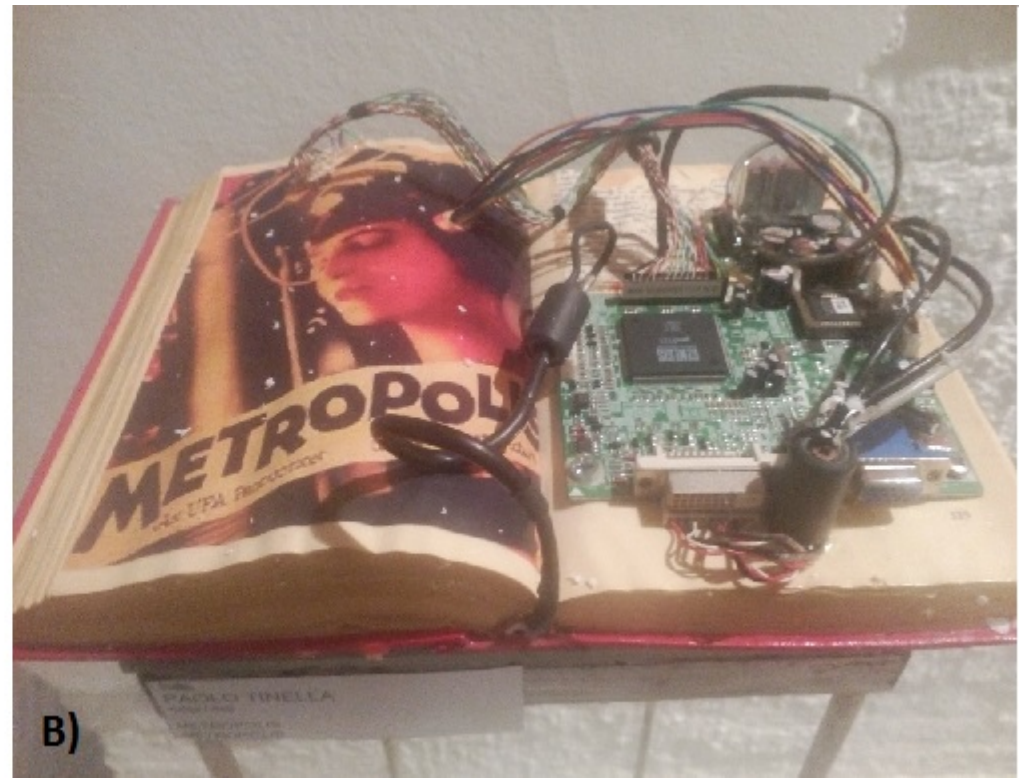
- a) lecturing - teacher
- b) watching film
- c) reading books/written materials
- d) \_\_\_\_\_

Hall & Cushing (1947)

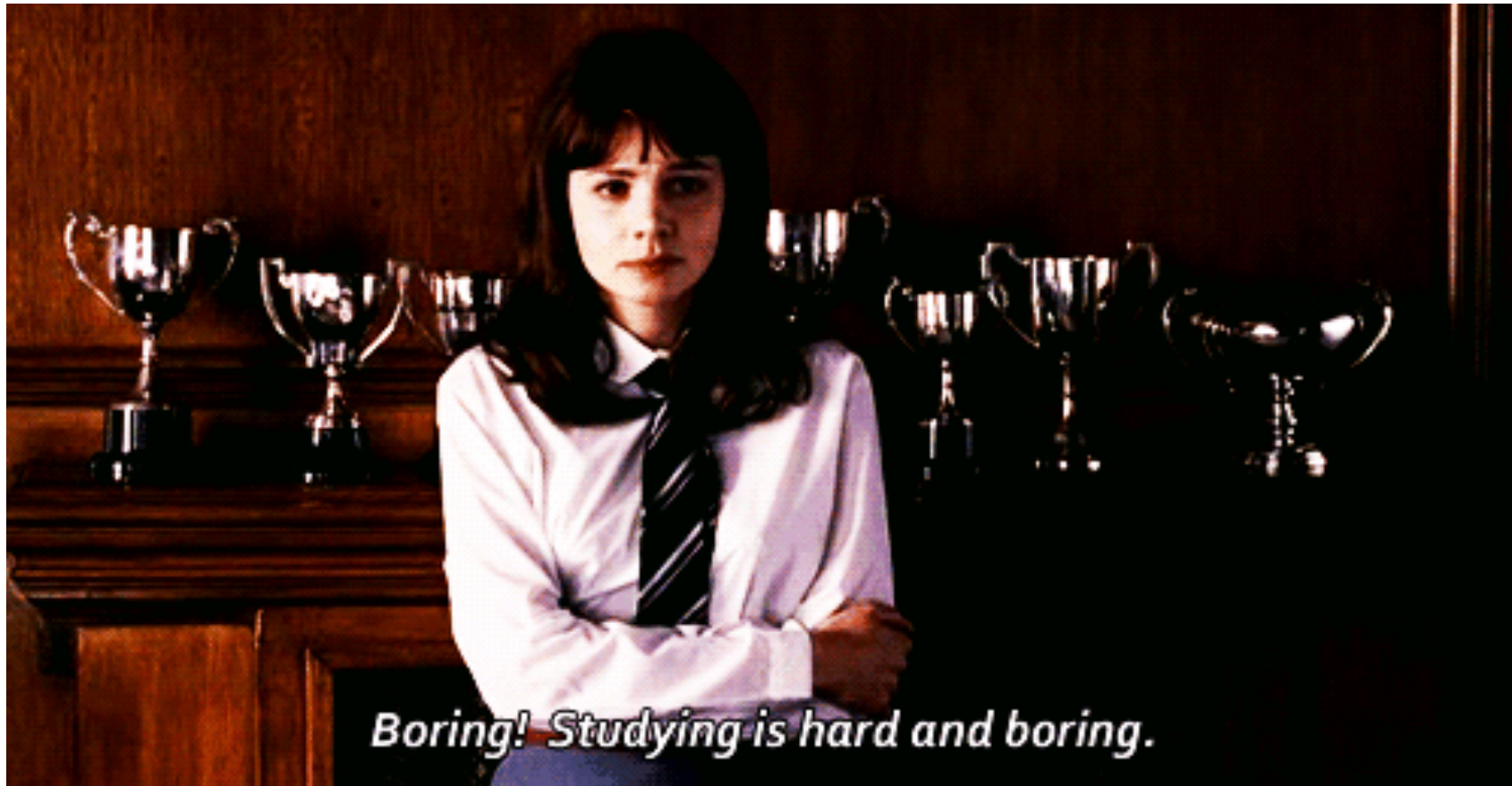
**It is hard to find correlation between using ICT  
and better learning outcomes.**

(Pešikan, 2016; Bates, 2001; Bates & Sangra, 2011; Cradler et al.,  
2002; Kirkup & Kirkwood, 2005; Moore & Kearsley, 2011)

# ALT vs traditional teaching



# Discourse about learning?

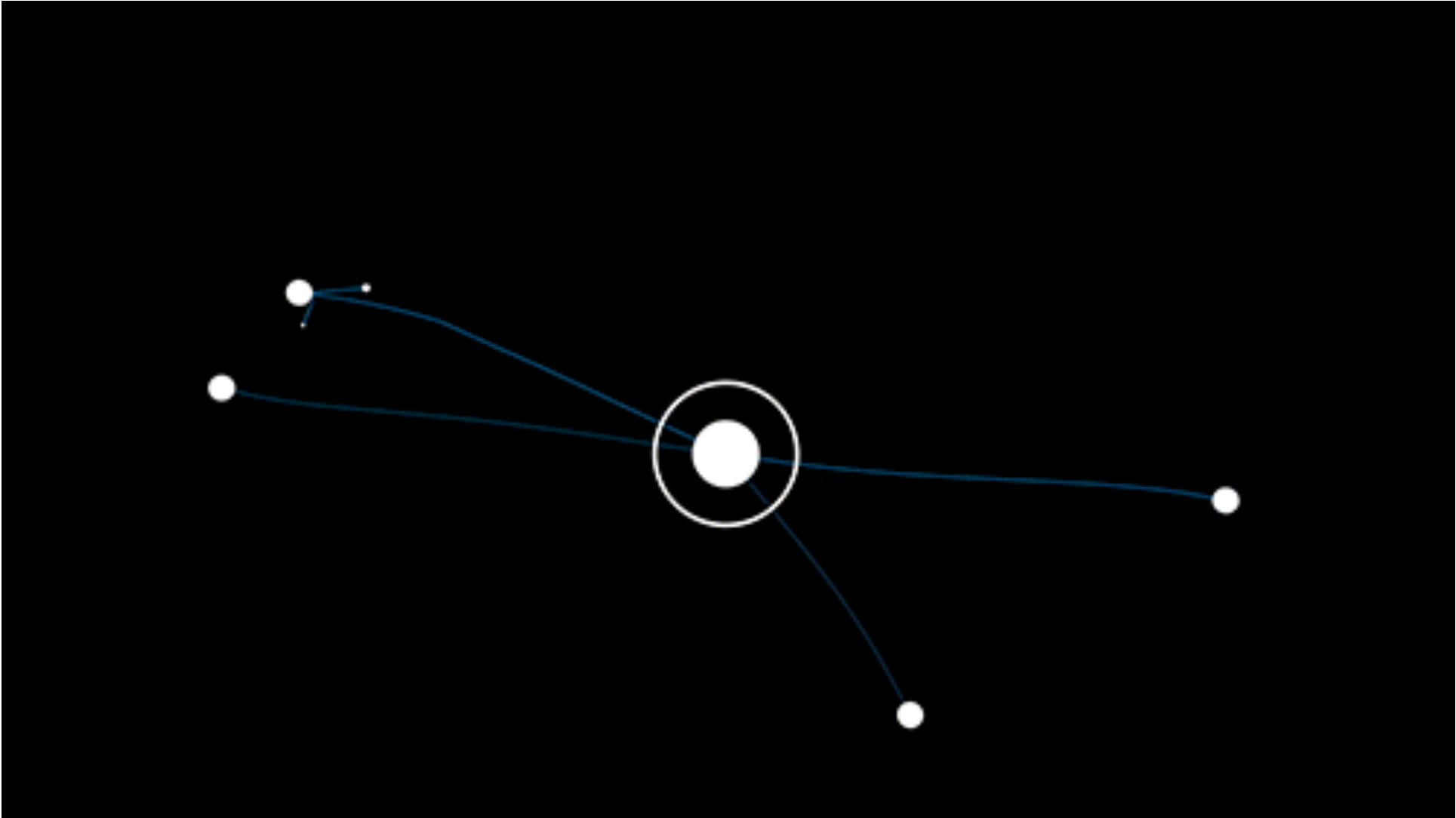




# Interactivity



# Co-construction



# Metacognition

The screenshot shows the Scratch editor interface. The browser address bar displays the URL <https://scratch.mit.edu/projects/156285493/#editor>. The project title is "Walk around" by SzBogi. The stage shows a landscape with a path and trees. The scripts area contains the following code blocks:

- when green flag clicked
  - go to x: -1 y: 0
  - show
  - switch costume to menő-0
  - set jelmez to 0
- when up arrow key pressed
  - forever loop:
    - wait 0.1 secs
    - switch costume to jelmez
    - wait 0.1 secs
    - switch costume to jelmez
- when down arrow key pressed
  - forever loop:
    - wait 0.1 secs
    - switch costume to jelmez
    - wait 0.1 secs
    - switch costume to jelmez
- when down arrow key pressed
  - change jelmez by -1

The sprites area shows a sprite named "menő" with a costume of a person walking. The stage shows a landscape with a path and trees. The coordinates are X: 240 Y: 29.

# Social nature of learning



# Idiographic



**Let us discuss (agree, disagree,  
do not know)**

ALT feels risky.

In ALT students participate actively while the teacher might take a more passive role.

Information is knowledge.



ICT is just another tool.

ICT should not be seen as just  
tool but as material.

ICT can replace teachers.

# Misconceptions in using ICT in education (Pešikan, 2016)

- ICT in education = equipping schools with computers
- Information is knowledge
- Digital vs functional literacy
- ICT is just another tool
- ICT can replace teachers
- ...

*"What peoples, what cultures, what languages  
will take control of these new education  
industries and impose them on the world?"*

*(Jacques Attali, 1996)*

# Maker movement and education

"Educational makerspaces and maker education have the potential to revolutionize the way we approach teaching and learning. The maker movement in education is built upon the foundation of constructionism, which is the philosophy of hands-on learning through building things[...] Thus maker education is a branch of constructivist philosophy that views learning as highly personal endeavor requiring the student, rather than a teacher, to initiate the learning process." (Kurti et al, 2014, 8 [1]).

**Thank you for your attention.**

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