

Interactive Historical Map

Educational Robotics: an application to History and Art

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Questions



- What is the importance of interdisciplinary education?
- Why Robotics -Educational Robotics?
- How different subjects are blended?
- Is it difficult to create an Interactive Historical Map?
- What Hardware-Software do we need?
- Other Applications?

Interdisciplinary approach in education

Cross curricular approach. Connecting different science fields under one project.

Greek regulations framework: ΦΕΚ 303-13/3/2003

«Και τα ασύνδετα μαθήματα τα οποία διδάχθηκαν στα παιδιά στην σχολική εκπαίδευσή τους, πρέπει να ενοποιηθούν για να συνοψίσουν τη συνάφεια των γνώσεων μεταξύ τους και προς τη φύση του όντος. Μόνο μια τέτοια μάθηση είναι πραγματικά μόνιμη στα παιδιά που θα την κάνουν κτήμα τους»

Πλάτων, Πολιτεία μτφρ: εκδ. Κάκτος, τόμος 4, Ζ, 537c:

“And the unrelated lessons taught to children in their schooling must be unified to summarize the relevance of the different fields of knowledge to each other and to the nature of the being. Only such learning is really permanent to the children who will make it their own”

Plato, The Republic (Politeia 4, Ζ, 537c)

“

Interdisciplinary approach in education

Topics may be defined as educational subject matters - History, Geography, Science - but not as isolated subject matters.”

Dewey J. Democracy and Education.

“We perceived and made "connections between things" when we learned from our experience. This implies that by making connections we integrate our experiences and build meaning for ourselves through the reconstruction and reorganization of all our experience”

Dewey J, 1938

Why robotics?

Pupils develop complex cognitive, metacognitive and social skills.

Creativity

Active participation in activities

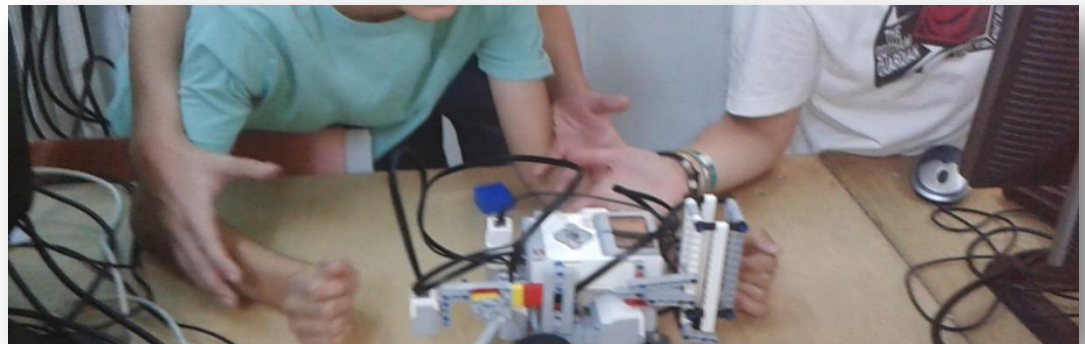
Critical Thinking.

Collaborative learning and teamwork.

Synthetic application of knowledge from different subjects.

Immediate observation of the outcome of their work.

Feedback directly from the result or the teacher.



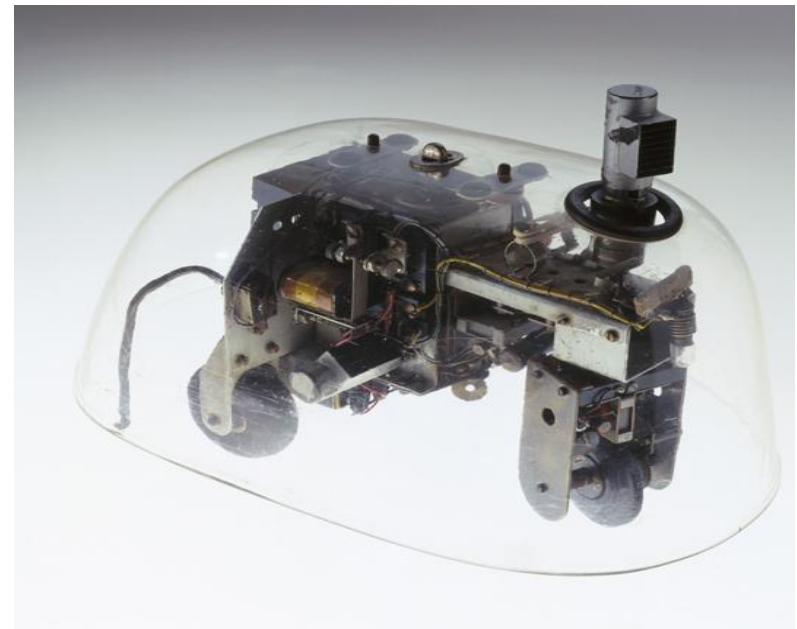
Educational Robotics from past...1948-1949

WILLIAM GRAY WALTER

1910-1977



CYBERNETIC TORTOISE BY W.G.
WALTER SCIENCE MUSEUM/SCIENCE
& SOCIETY PICTURE LIBRARY
(IMG10323893_H)



Logo turtle

Logo: MIT 1963. S. Papert & M. L. Minsky (Turing 1969)

Logo Turtle-robot MIT 1963.

Tom Callahan (prototype)

Objective: To create a tool that would increase the ability of young children to solve problems.



1st Logo Turtle: dial up



Mindstorms cover



The present...



“The Free Besieged” Project

Literature:

D. Solomos: The Free Besieged

History:

Greek Revolution

Third siege of Missolonghi (1825–1826)

Art:

Iconography of Greek War of Independence, Paint reproduction

Informatics & Robotics.

Information, Circuits, Programming, Recording.



Teamwork!

ICT-Informatics:

1. Information Research on:

Panagiotis Zografos (Painter of the artwork)

Dionisios Solomos (Poet)

Music composed Free Besieged (J. Markopoulos)

Historical Events (Siege of Messolongi, Battle of Klesova)

2. Reproduction of the Painting on canvas

3. Programming with Scratch to present the knowledge acquired.

4. Connecting all programs into one.

5. Making circuits! Connecting the board (makey makey) with the program and the canvas.



Hardware: Makey- Makey

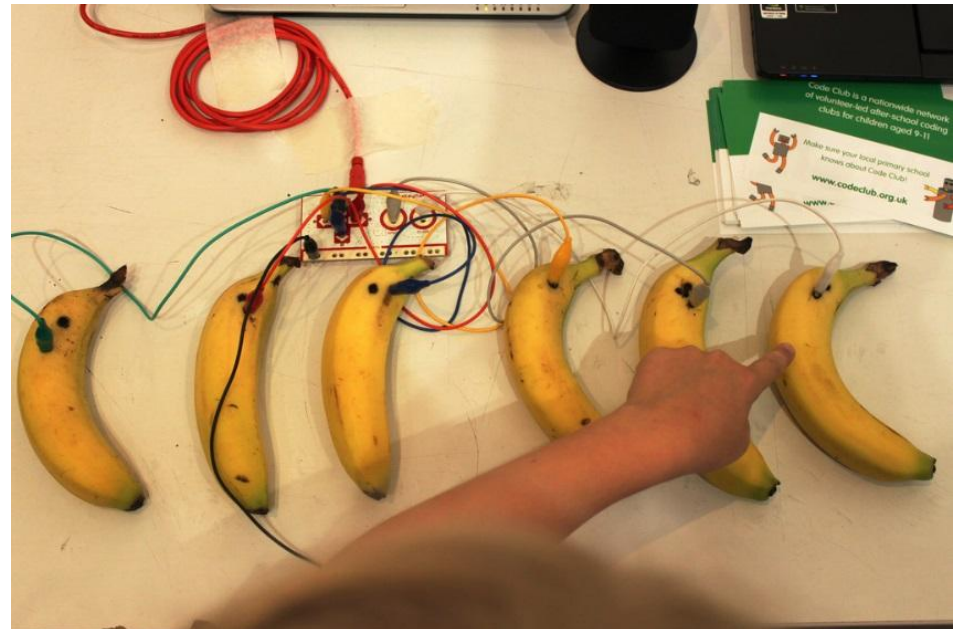


Board able to connect with PC/laptop with a usb cable and programmable with Scratch. (makeymakey.com)

May turn to keyboard any conductive surface .

Arduino compatible

Cost varies on the version.

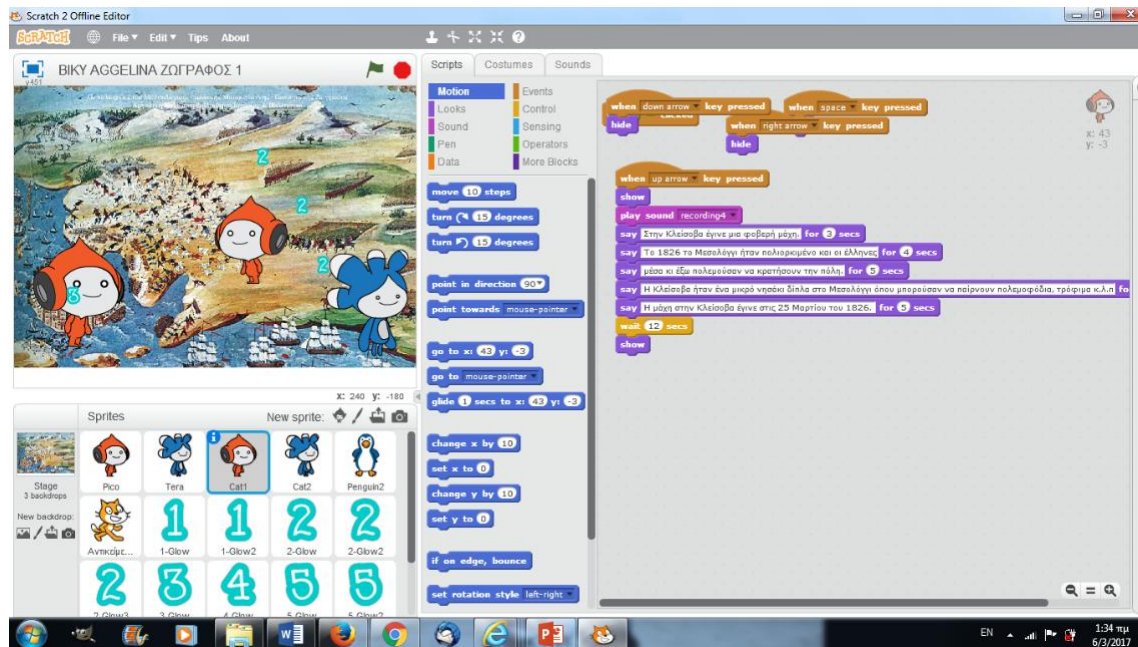


Software: Scratch



Educational programming environment introduces to the basics of programming. (scratch.mit.edu)

Easy to use depended on the desirable level of functionality





Any map may become interactive..
<https://ralleiarobotics.blogspot.co.uk>



Pupils statements-Evaluation

