

# Aula 12 - 13

( Exemplos interessantes - parte III )

*A Revolution Begins...*

# MOOCs



Salman Khan  
Khan Academy



Sebastian Thrun  
Stanford/Udacity



Anant Agarwal  
MIT/edX

A collection of logos for various MOOC providers and institutions. The logos are arranged in a grid-like fashion within a white rounded rectangle. From top to bottom, left to right: Udacity (orange text), Coursera (blue text), Khan Academy (green tree icon above 'KHAN ACADEMY' text), Udemy (teal square icon above 'udemy' text), edX (pink and blue text), Educa (black and orange text), and Google Course Builder (Google logo above 'course-builder' text with a blue house icon).

**Seria a EaD (nas várias formas) a solução??**

Discussão sobre os MOOCs

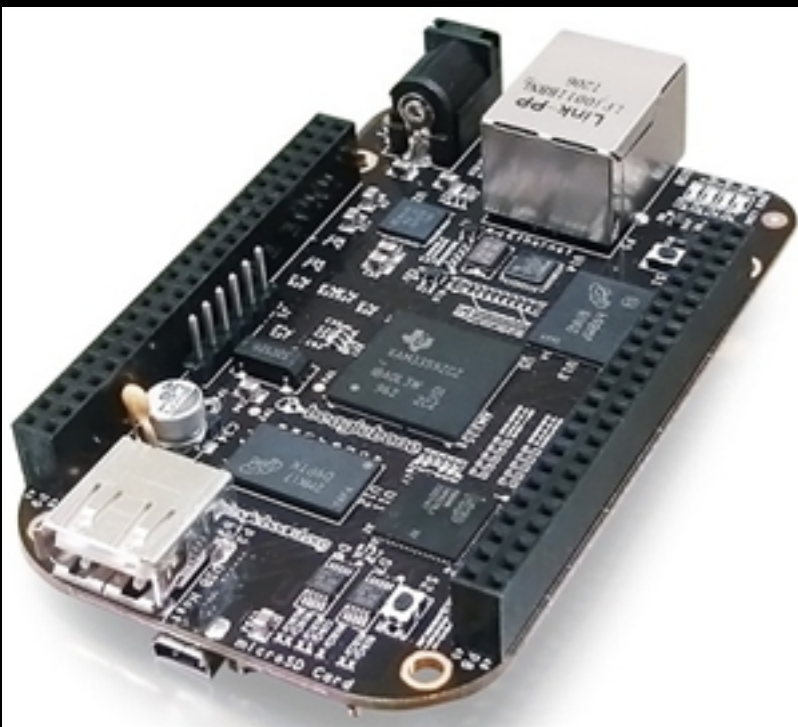
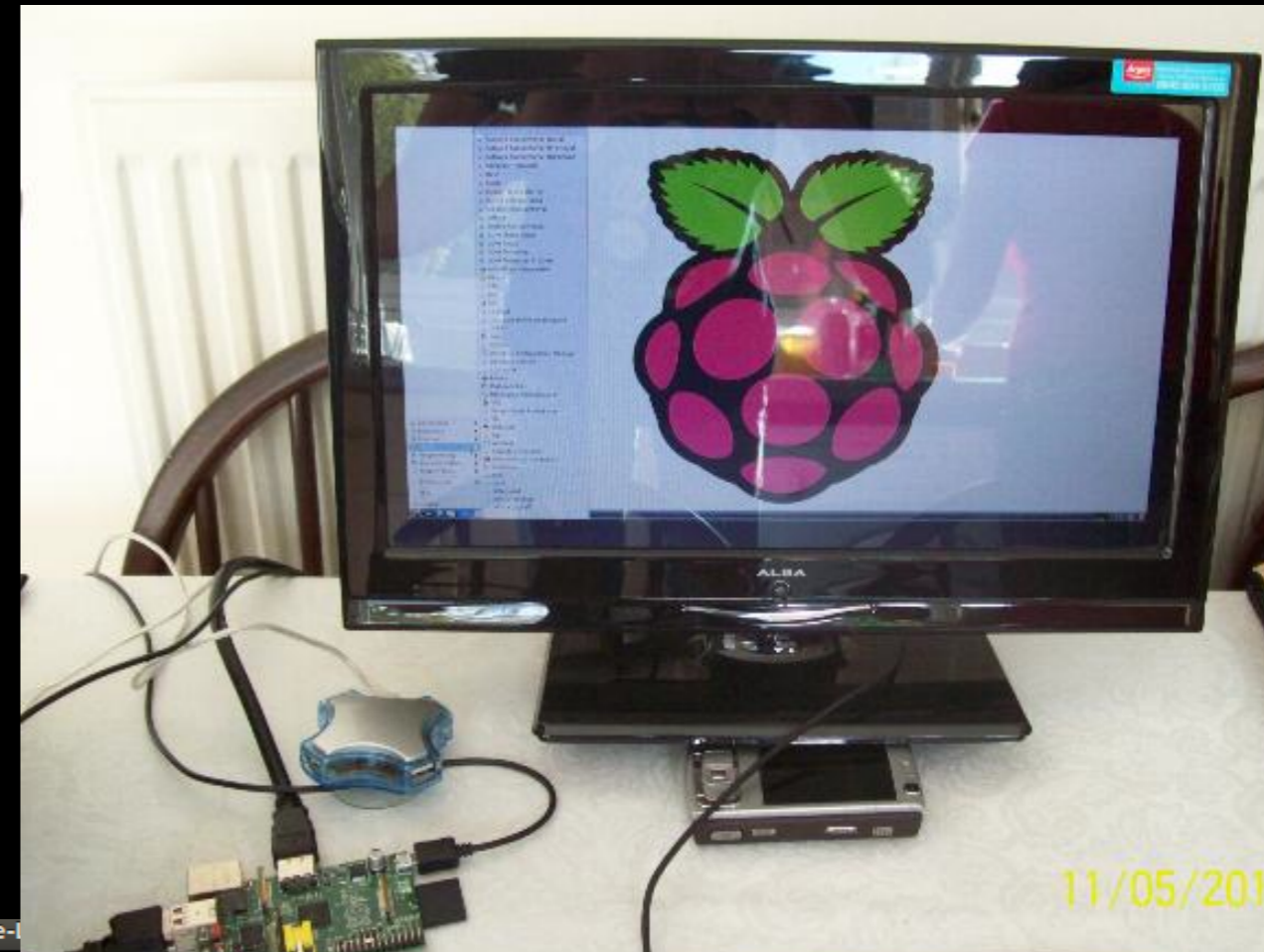
[Link Folha de SP: Tec/2012](#)

[Link Folha de SP: Educação/2014](#)

# Tecnologia nas Escolas

## ★ Oportunidade de Pesquisa

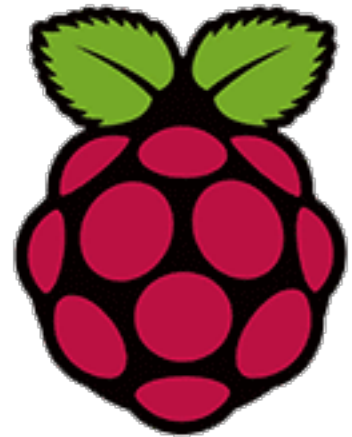
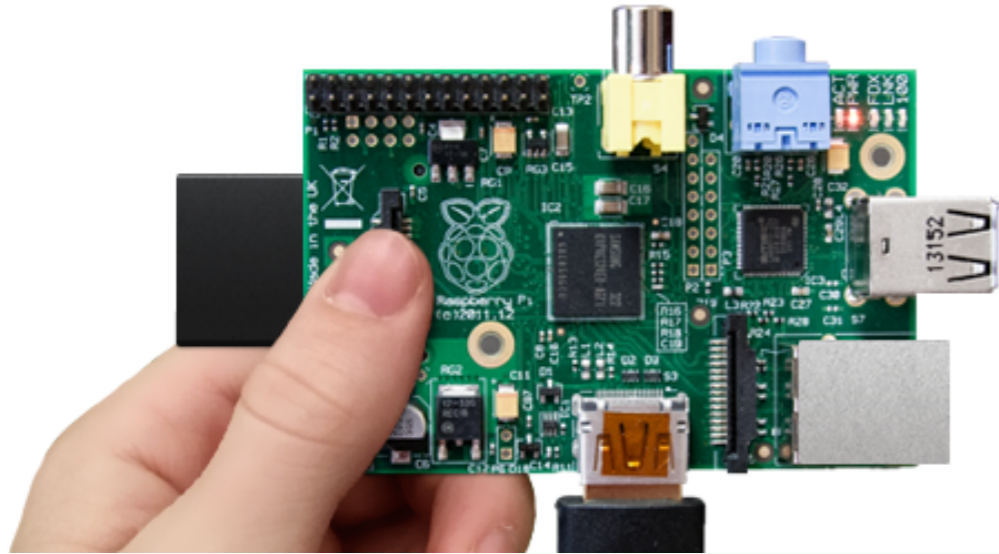
- Uso de computadores de baixo custo nas Escolas Públicas de São Carlos
- Bolsas p/ estagiários USP (bolsa PRCE-USP)



```
iagent@iagent-ThinkStation: ~/workspace/replicape-  
root@beaglebone:~# cat /sys/kernel/debug/gpio  
GPIOs 0-31, gpio:  
gpio-22 (Replc:pru-dir_y ) out lo  
gpio-23 (Replc:pru-step_z ) out lo  
gpio-26 (Replc:pru-dir_z ) out lo  
gpio-27 (Replc:pru-step_x ) out lo  
GPIOs 32-63, gpio:  
gpio-44 (Replc:pru-step_y ) out lo  
gpio-45 (Replc:pru-step_ext_) out lo  
gpio-46 (Replc:pru-dir_ext_2) out lo  
gpio-47 (Replc:pru-dir_ext_1) out lo  
gpio-52 (eMMC_RSTn ) out lo  
gpio-53 (beaglebone:green:usr) out hi  
gpio-54 (beaglebone:green:usr) out lo  
gpio-55 (beaglebone:green:usr) out hi  
gpio-56 (beaglebone:green:usr) out lo  
gpio-59 (McASP Clock Enable P) out hi  
gpio-60 (Replc:pru-step_ext_) out lo  
gpio-61 (Replc:pru-dir_x ) out lo  
GPIOs 64-95, gpio:  
GPIOs 96-127, gpio:  
root@beaglebone:~#
```



# Wolfram Language & Mathematica free on every Raspberry Pi!



Untitled-5 \* - Wolfram Mathematica

```
File Edit Insert Format Cell Evaluation Palettes Window Help
```

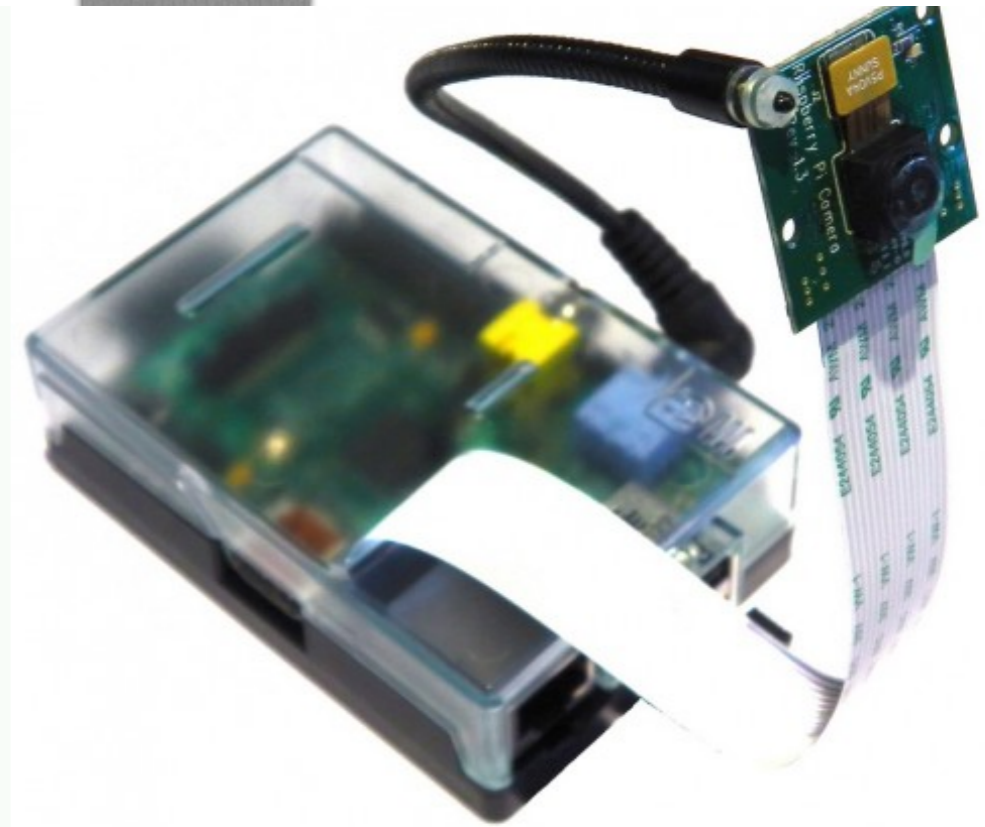
In[8]= ContourPlot3D[x^3 + y^2 - z^2 = 0, {x, -2, 2}, {y, -2, 2}, {z, -2, 2}]

Out[8]=

In[10]= RegionPlot3D[1 ≤ Norm[{x, y, z}, 1] && Norm[{x, y, z}, 1] ≤ 1, {x, -1, 1}, {y, -1, 1}, {z, -1, 1}, Mesh → None, PlotStyle → Directive[Opacity[0.5], Pink, Specularity[White, 20]], PlotPoints → 60, NormalsFunction → "Average"]

Out[10]=

The screenshot shows the Wolfram Mathematica interface. It features a menu bar at the top with options like File, Edit, Insert, Format, Cell, Evaluation, Palettes, Window, and Help. Below the menu bar is a text input area where code is entered. The output area shows two 3D plots. The first plot is a hyperboloid of two sheets, colored with a gradient from blue to red. The second plot is a pink cube with a purple polyhedron inside, also with a gradient. The interface includes a sidebar on the left with various application icons like IDLE 3, Debian Reference, WiFi Config, LXTerminal, OCR Resources, Midori, IDLE, Python Games, Scratch, PI Store, and Wolfram.



Wolfram Mathematica  
PILOT RELEASE FOR RASPBERRY PI

Wolfram Language Documentation Center

Wolfram + Raspberry Pi Website

Visit Wolfram Community for questions, sample projects and more

The splash screen features the Wolfram Mathematica logo at the top. Below it, there are three logos: the Wolfram Language Documentation Center logo (a white wolf head on a red circle), the Wolfram + Raspberry Pi Website logo (a red starburst and a Raspberry Pi logo), and the Wolfram Community logo (a blue speech bubble). Below these logos are three lines of text: 'Wolfram Language Documentation Center', 'Wolfram + Raspberry Pi Website', and 'Visit Wolfram Community for questions, sample projects and more'.



# "*Flipped Classrooms*"

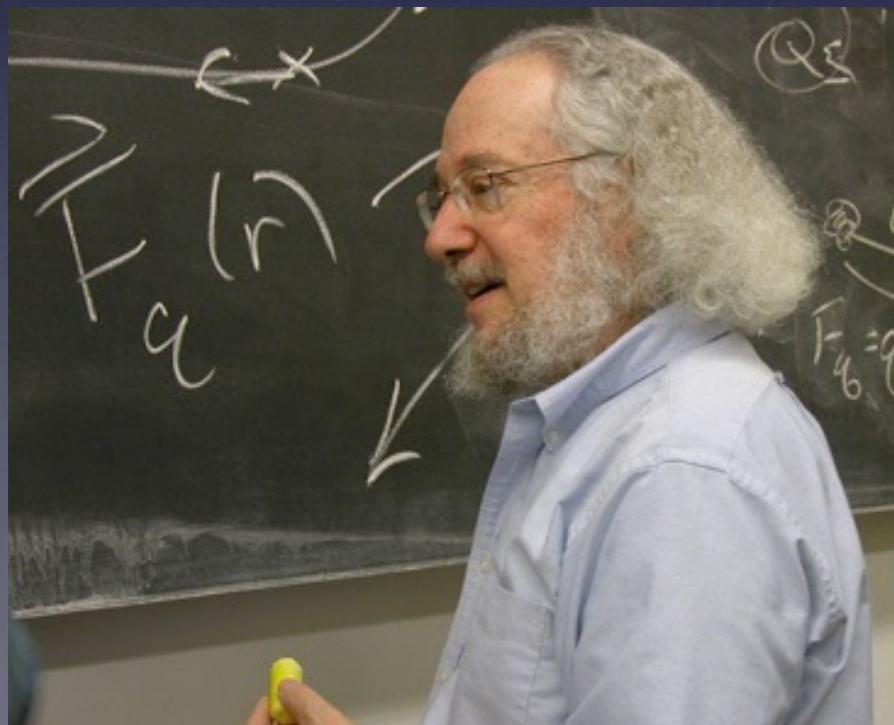
Classes mais interativas e participativas



**Eric Mazur**  
Harvard University



**Carl Wieman**  
Univ. Colorado, Boulder



**Joe Redish**  
University of Maryland



**Robert Beichner**  
North Carolina State Univ.



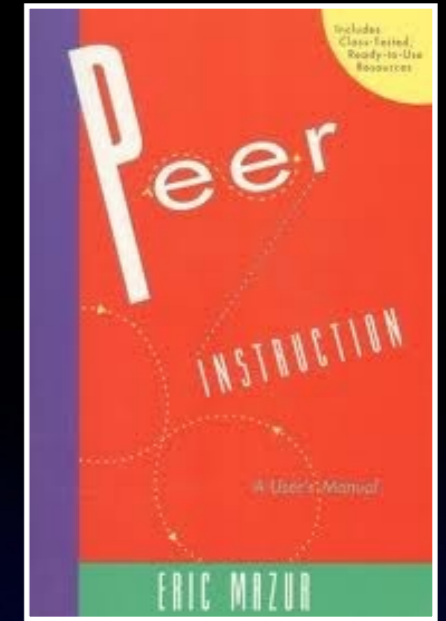




Eric Mazur  
(Harvard)



"JiTT"



"Peer Instruction"



"Studio (workshop)  
Classrooms"





Carl Wieman  
(Univ. Colorado)

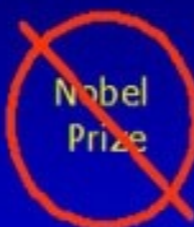


## Science Education for the 21st Century

Using the tools of science to teach  
science

and many other  
subjects

Carl Wieman UBC & CU



Nobel  
Prize



★ Data!! ★

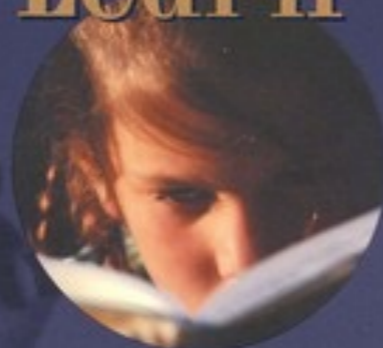


Colorado physics & chem education research group:  
W. Adams, K. Perkins, K. Gray, L. Koch, J. Babera, S. McKagan, N. Finkelstein, S.  
Pollock, R. Lemaster, S. Reid, C. Malley, M. Dubson... \$\$ NSF, Kavli, Hewlett)

(2000)

*Expanded Edition*

# How People Learn



**Brain,  
Mind,  
Experience,  
and  
School**



NATIONAL RESEARCH COUNCIL

(2005)

# How Students Learn



**HISTORY,  
MATHEMATICS,  
AND SCIENCE  
IN THE  
CLASSROOM**

NATIONAL RESEARCH COUNCIL  
OF THE NATIONAL ACADEMIES

# Escapando do Death Valley da educação...



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