

HSCI2025

Cairo Egypt

14-18 December 2025

www.hsci.info/hsci2025



Hands-on Physics: The Pathway to Pleasure in Teaching and Learning process

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Introduction



One of my hopes is to see **teaching Science / Physics** in National and International schools based on Hands-on activities, and to see each student has got both (**Science text book and Science Kit**) altogether!

Hence each student would have the chance to study the concept and access the required tasks by doing experiments/ hands-on activities and acquire skills to record data, to observe changes with variables

Hands-on Physics is a pathway to pleasure!



As a matter of fact, it's well known that *dopamine* is a pathway to pleasure.
I discovered that *hands-on physics* might be a pathway to pleasure as well!
I recorded a lot of notes like that once teaching Science/physics in the schools where I have been teaching, and later in Tesla Academy

The Situ-emotions Monetarization



A small sample size of 18 students (*Gr.10 class A*) was considered and a questionnaire was employed for in situ-emotions monetarization. I noticed a decrease from 30% to 12% in *negative emotions* and an increase from 82% to 91% in *positive emotions* was detected when considering the transition from instructional approach 1 (*classroom approach*), to instructional approach 2 (*Hands-on physics approach*).

A great pleasure in teaching talent students and give them the chance to introduce presentations

Taxonomy of epistemic emotions



The expression of emotions constitutes a human dimension inherent to its own existence. The heritage inherited from Ancient Greece is full of references to the human affective domain. Since then, emotions and reason have been confronted and placed in opposite poles, with the subsequent creation of the “body-soul” duality, with emotions being almost considered like a threat that hinder the human's path to pleasure/ happiness “Eudaimonia”.

Dimension of Hands-on physics teaching-learning process

It is important to make the creative physics teachers aware of their emotions in order to induce changes in their students' attitudes to make them feel responsible of the scientific and human development through the implementation in their future.



Hands-on Science course for kids in Tesla Academy

Conclusions

As a physics teacher, I usually get pleasure in teaching kids /students using Inquiry- based learning, using hands-on activities /experiments, and in attending professional development workshops with multinational colleagues, and in attending hands-on science conferences as well. Furthermore, I get more pleasure when teaching talent and highly interested students in science.

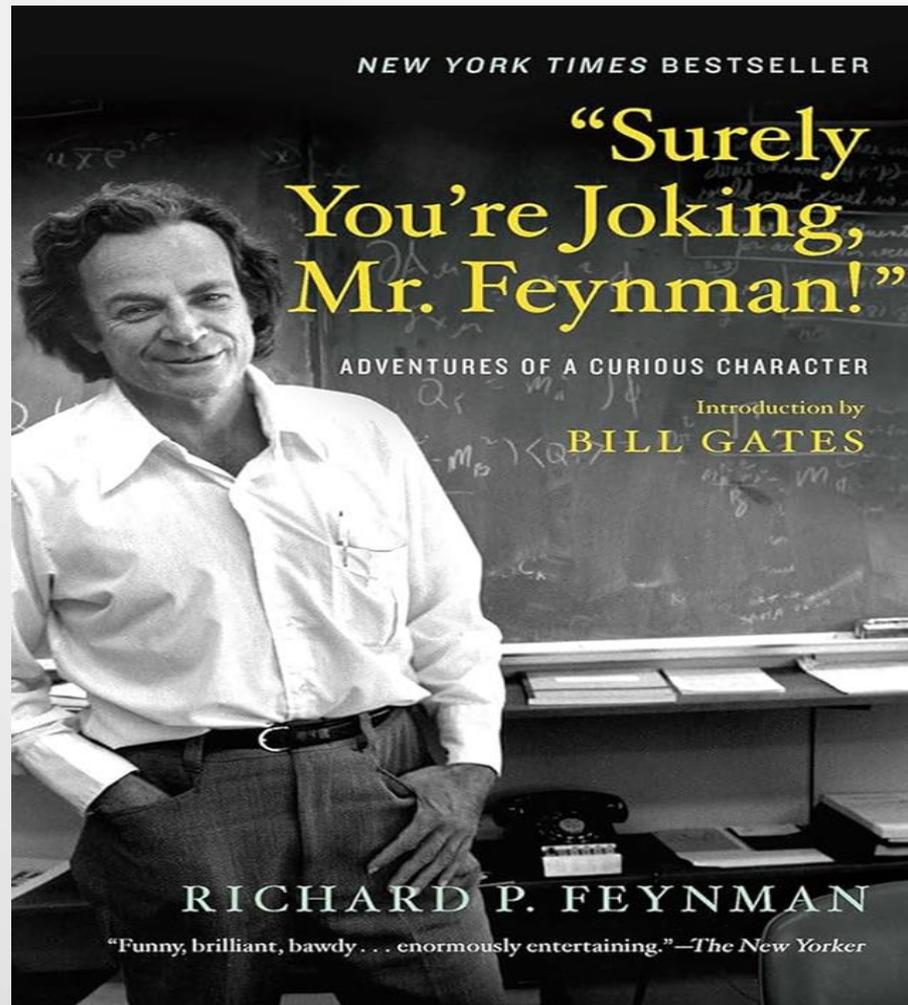


The emotional benefits of the implementation of active methodologies in physics/science education of undergraduates is reported in the literature. Studies are also reported stating emotional improvements in both students and physics teachers, after the implementation of active methodologies, highlighting the employed methodology.



My team before participating in the *National Physics Olympiad* contest

- At last, if I can borrow a quote from [Richard Feynman](#) (The greatest physics teacher and Noble Prize winner in Physics):
- *"I have a friend who's an artist, and he sometimes takes a view which I don't agree with. He'll hold up a flower and say, "Look how beautiful it is," and I'll agree. But then he'll say, "I- as an artist- can see how beautiful a flower is. But you, as a scientist, take it all apart and it becomes dull." I think he's kind of nutty. ... There are all kinds of interesting questions that come from knowledge of science, which only adds to the excitement and mystery and awe of a flower. **It only adds.** I don't understand how it subtracts".*



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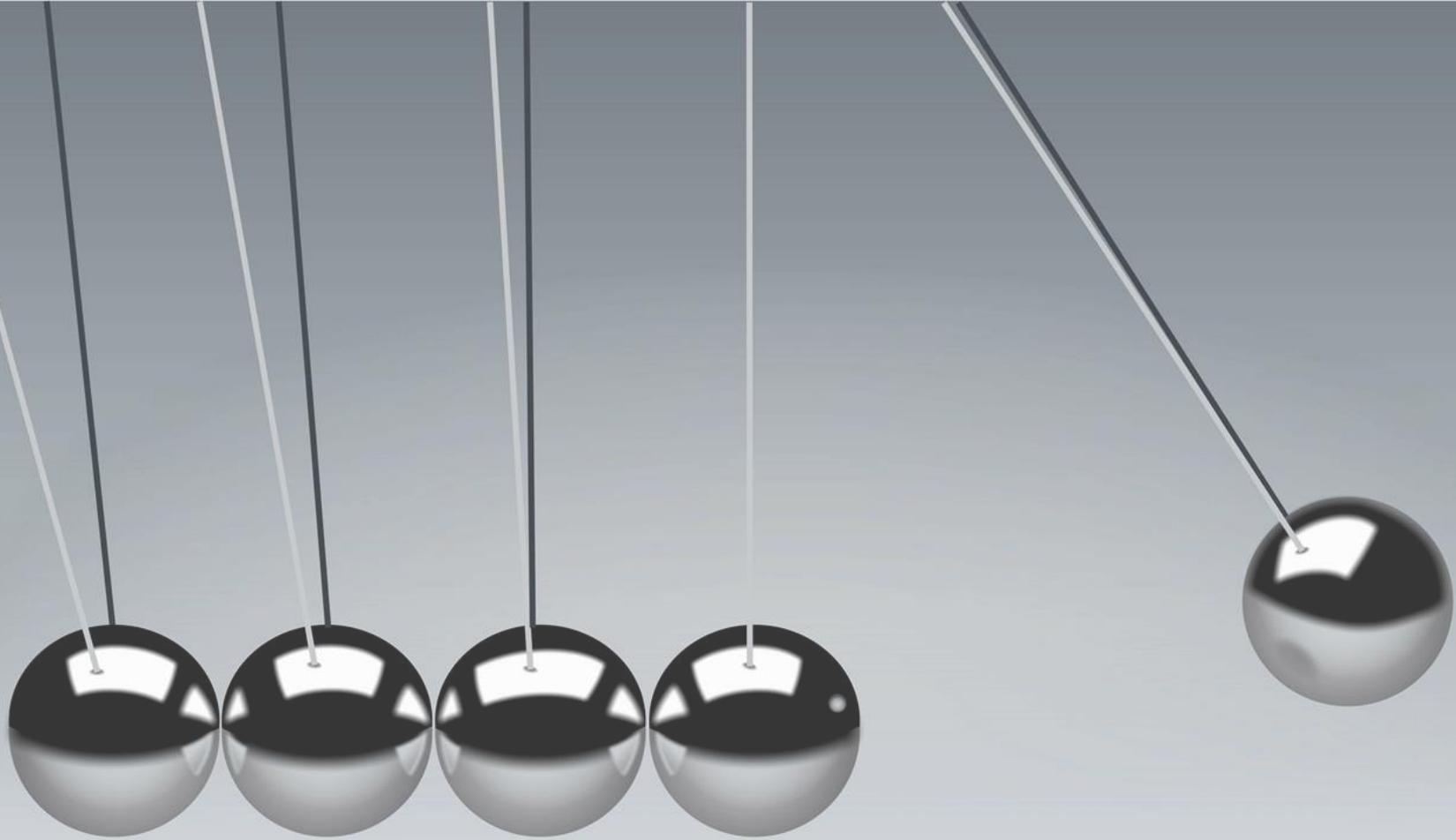
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Thank You

We appreciate your time and attention.
Any Questions or discussion?