

The Intellectual challenge and attraction of physics to students

Room 17 Presenter: Wilbur

- A question of identifying the right “triggers” that excite the individual.

The intellectual challenges

* Arousing the interest of the student*

1. Abstraction
2. Mathematics
3. Language (e.g. “moments”)
4. Visualizations
5. Experience (-: misconceptions ; +: hands on)
6. Application of principles to new context
7. Relevance of physics to the real world
(*failure to identify*)

Intellectual Attraction

1. Link to science fiction (e.g. time travel; hyperspace travel; teleportation)

[potential negative context – geeky (The Big Bang Broadway play)]

1. Elegance
2. Mathematics
3. “First principles” approach
4. Related to technology
5. Challenge
6. Sense of understanding/Eureka/Fulfilment
7. Ability to see

- *Symmetry* between intellectual challenges and attractions suggest
(reasons are the same)
- Engaging students at a young age is important
- Teacher makes a good deal of difference
- Interesting experiments/differences

3 introductory question posed to capable Sec 3 students from an Integrated Programme

1. One good thing about physics

2. One bad thing about physics

3. Why I am studying physics