

Kungfu Physics

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HCI PHYSICS UNIT PROUDLY PRESENTS
ANOTHER BLOCKBUSTER FOR 2010


功夫 KUNG FU PHYSICS



SHOWING ON 26TH FEB
IN A WIKI-SPACE NEAR YOU

Task:

Create a **Home Based Learning** assignment that can **engage** students and let them **learn physics.**



Limitations of conventional e-learning methods

- ▶ Integrity of assessment
- ▶ Lack of interaction
- ▶ Convergence of answers
- ▶ Lack of room for expression



What do students do?

- ▶ **Watch** video clips from movie
- ▶ **Group work**, 4-5 per group.
- ▶ **Answer** 10 questions on their group wikis.
- ▶ **Graded** by tutors.



练武奇才



武功平平



身手不凡

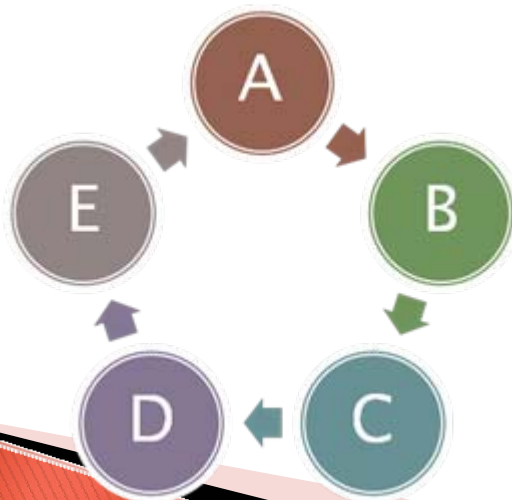


走火入魔

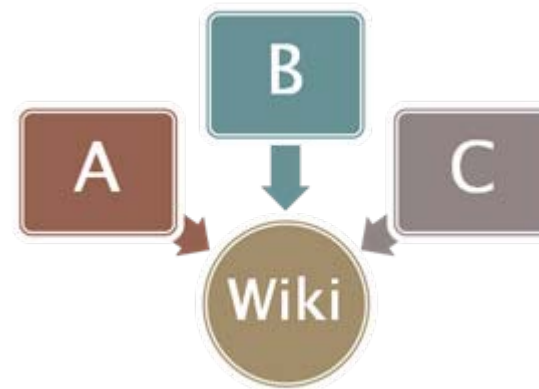
Why wikispace

- ▶ Similar to wikipedia, wikispace is an web application which allows anyone to view and contribute a piece of document
- ▶ Allows for collaboration, collaborative learning, and parallel input
- ▶ Advantage for group project:

Conventional way



Using wikispaces



Walk through...

Kung Fu Physics 2010 - home - Windows Internet Explorer

http://www.1.kungfuphysics2010.wikispaces.net/

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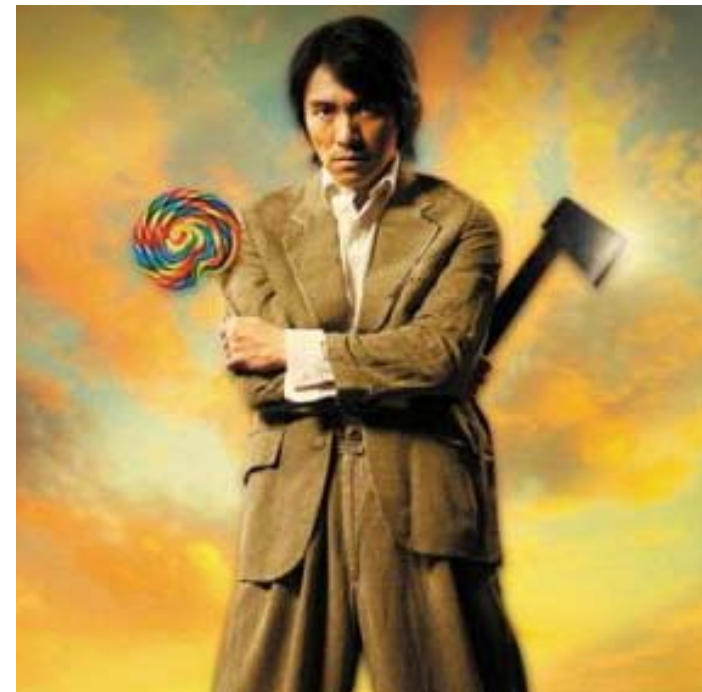
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start Kungfu Physics.ppt Physics Home Based ... Microsoft Excel - Book1 Kung Fu Physics 2010... Hwa Chong Institute... EN 1:39 PM

Motivation...

- ▶ Tickle students' natural curiosity
- ▶ No absolute right or wrong answer
- ▶ Positive and encouraging learning environment
 - Humour and laughter
- ▶ Prizes
 - 3 Axe Prizes for best 3 groups (\$40 Island Creamary vouchers).
 - 5 Candy Prizes (\$20 Island Creamary vouchers).



Teachers' role

- ▶ During
 - Teachers will use the master account to track progress
 - Remind students who are not active to contribute
- ▶ After
 - Export students' work into PDF format
 - Mark based on a rubric style rather than point form marking with marking scheme
 - Looking out for good sense of estimate, correct application of concepts, ability to question assumptions, clarity of explanations

What our students say...

- ▶ **97%** agreed that Kungfu Physics is engaging.
- ▶ **91%** enjoyed doing Kungfu Physics.
- ▶ **96%** thought that the questions posed were novel and thought-provoking.
- ▶ **88%** enjoyed sparring Kungfu with their groupmates.
- ▶ **83%** agreed that Wikispaces is a good platform for collaboration.
- ▶ **100%** said they did additional research in the process.

What our students say...

- ▶ The procedure to do this task is a bit confusing as there are many steps other than that, it really **shows how physics applies in real life**, quite interesting.
- ▶ It's very amazing that there are **many hidden aspects of physics** in such movies, and we can actually find out which scenes are actually possible and which are not, from investigating the laws of physics governing the action.
- ▶ This was a very well done HBL as its **easy to use and rather hassle-free** too.
- ▶ Using wikispace as a platform for discussion and using excerpts of 'bad physics' from famous movies is **effective in inspiring students to learn physics**. However, some of the question posed, which were meant to ascertain our understanding of the physics concepts we have learnt so far, required us to make assumptions and comment on the physics displayed in each of the clips. **This can be quite a difficult task for most students who have a weak foundation in physics.**

What our students say...

- ▶ Innovative and interesting (and amusing? d:). Kudos to physics department for making such creative projects for HBL (:
- ▶ Should have extended over a **longer period of time**.
- ▶ Enjoyable experience.
- ▶ **interesting application questions**. should have more of these rather than just plain tutorials and lectures though i feel assigning us tutorials to do would in the end, with a lvls in mind, be more beneficial in capturing physics concepts and give slower learners some much needed time to catch up. But was interesting and thought provoking and **gives a better outlook of physics than most of the a lvl curriculum**.
- ▶ Well thought out with clear effort shown. Thanks! :D
- ▶ Terrific kungfu physics!!!

Thank you.

Questions?

▶ kungfuphysics2010.wiki.hci.edu.sg/