

Kungfu Physics

(C2 H2 Physics HBL)



Lesson Description

Teachers find that there are too much wrong physics being propagated in movies, especially action films, where there is an abundance of situations which involves mechanics, which is the core of college physics. Hence we were thinking of how we can employ an action movie into a learning task. We thought that the most effective way would be for the students to identify wrong physics in movies and employ correct concepts to explain them, in the process, reinforcing their correct concepts.

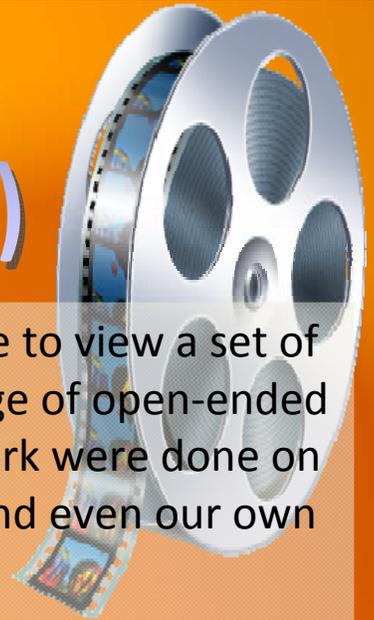
1. Choice of movie: Kungfu Hustle. Firstly, it has a good variety of action scenes which involves a wide range physics concepts which students have learnt. There are many good physics as well as bad physics. So the questions can be set both ways. Secondly, this movie should work pretty well to engage the students and interest them long enough to complete the learning task.

2. Choice of application: Wiki is a perfect application which suits our needs of

- WYSIWYG: editing is easy
 - allow for collaboration
 - open ended style of work
 - concurrent editing, less time wasted
 - allow for real-time monitoring of progress by teachers
 - allow for easy export of work into PDF form
- able to embed various media forms which allows for the use of it being a one-stop portal
- customisable authorship and viewership of individual wikispace, hence protecting the privacy of students' work from other students.

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3. Students are working in groups of 3-4. They were to view a set of video clips from the movie, and then answer a range of open-ended questions. All materials were hosted and all the work were done on Web 2.0 applications such as wikispace, youtube and even our own ISP.

Main page:

<http://www1.kungfuphysics2010.wikispaces.net> (explore the pages to the right, such as Kungfu Manual, Chamber of Secret Skills etc)

Sample of students' wikispace: <http://09s6d-d.kungfuphysics2010.wikispaces.net>

Outcomes

- Most students managed to apply correct physics matching to the situations and make good estimates in certain problems.
- 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. (This was certainly beyond the teachers' expectations.)