

# International Mentoring – a new opportunity for physics undergraduates

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## The basic idea:

- Physics undergraduates in the UK mentor groups of high school students overseas
- Typically 6×1 hour sessions delivered via Skype or alternative

## The level:

- 3<sup>rd</sup> year BSc or Msci in Bristol
- 1st or 2<sup>nd</sup> year A-level (or equivalent) overseas

## Our partners:

- English-language Schools in Pakistan
- Schools recruited either via personal contacts or with help of University representative

## Our partners:

- Currently 7 schools in 4 cities
- More partners keen to join



## Our partners:

- Schools are a mixture of for-profit and independent
- Students take A-levels or  
Aga Khan University Examination Board  
Higher Secondary School Certificate

## The motivation for our students:

- To gain teaching experience
- To improve their communication skills
- To make a difference

## The motivation for our students:

“I remember thinking teaching was a simple task when I was an A-level student but it is quite the opposite.”



## The benefits for overseas students:

- Deeper insight into curriculum
- Discussion beyond curriculum
- Exposure to a different society

## The benefits for overseas students:

“The fact that we were being mentored by a university student ... helped us overcome any hesitation that a student usually feels to discuss ...with a teacher.”

## The benefits for overseas students:

“It was an enlightening experience overall ...

## The benefits for overseas students:

“It was an enlightening experience overall ...

Extra points for showing us snowfall :P We don't get that here.”

## A typical session:

- Organized via WhatsApp (time, topic)
- Delivered via Skype
- Examples etc. prepared in advance



## A typical session:

- Mentoring  $\neq$  tutoring
- The best mentors show imagination



## A typical session:

“My final example allowed them to find how fast a car would need to travel for a passenger’s head to break their window when it swung around a corner (with many simplifications).”

## Assessment:

- Students keep journal describing mentoring sessions
- Unit mark derives from journal and final interview

Brief Assessment Criteria		A	B	C	D	E
<b>Mentoring performance (on basis of report and interview)</b>						
• Advance preparation <i>Was sufficient effort put into this?</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Physics content <i>Was an appropriate range of topics covered?</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Response to student questions <i>Was an honest attempt made to answer these?</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Development <i>Was experience from earlier tutorials used effectively?</i>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Creativity and originality		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Mentoring report</b>						
• Clarity		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Fluency		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Conciseness		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Interview performance</b>						
• Ability to describe mentoring experience clearly and fluently		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Ability to convey enthusiasm		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Ability to explain physics at an appropriate level		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Individual mark (21pt scale)</b>						
• Use above assessment criteria to determine a mark.						
• <b>Warning:</b> The 21pt scale is <b>non-linear</b> and uses <b>integers only</b> .						

A = Excellent, B = Good, C = Satisfactory, D = Poor, E = Unacceptable



## Staff input:

- Initial interview
- Present at first meeting between mentor and mentees
- Formative feedback after 2-3 sessions
- Final assessment

## Conclusion:

“I think this program has been extremely beneficial to me. Before embarking on this project, I did not realize how much impact I would have on the students or the impact they would have on me. The role of a mentor is not only to guide the students academic life but also take interest in other parts of their lives. On New Year’s Eve, I was very touched that some of the students messaged me to wish me a Happy New Year although we had not had a session for a while.

I was also very grateful to be able to teach physics to a group of female students as I wanted help inspire them and be an example of a woman studying physics. I hope that I showed them that there are many high achieving women in physics through my case studies.”