P2P Journal: My year as a physics tutor

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Summary

1 Physics 1 Workshop

October 30th

As this was my first tutoring session, I was very excited, but I also did not know what to expect, and whether I will enjoy it or not. Luckily, I overall did enjoy it. Being a workshop, It was a 30-minute session, which is good for a first session. The biggest inconvenience from the session was that I did not have a print-out of the solutions to the questions, which was not a problem for a *how do I do this?* sort of question, but was a problem for the *what's the final answer?* questions - which were actually more common than the former. I, thus, did my best to scan the student's questions for errors rather than check the final answer to infer whether they've made any mistakes or not, and answer them based on that. At one point, I was not able to answer one such question because of the lack of the answer sheet, but I looked it up on my phone afterwards while the students were answering the assessed workshop questions in the second half, and told the student the answer after then.

2 Physics 2 Tutorial

November 3rd

Today was my first *second year* physics tutorial. I was more prepared as I printed out the solutions. I was also quite familiar with the topics today. There were a lot of tutors present; probably too many, as at any moment, half of us were doing nothing. Halfway through I decided to go around and ask people specifically if they have questions - it turned out that most of them actually do have questions, but perhaps they were too shy to ask.

There were some mistakes that we pointed out at the start of the tutorial. There was also a mistake in the solutions, almost everyone was confused so we worked together to figure it out.

All in all it was a successful tutorial and I am at the same level of enthusiasm as I was last week. Next week I have 4 sessions, I also have an exam, but I hope that this wouldn't affect my performance and that I will be able to prepare well for all of them.

3 Physics 1 Tutorial x2

November 10th

Since I have attended both morning and noon sessions of the P1 Tutorial on this day, I will write up a single entry for both, as this will allow me to compare and contrast them in a better way.

I noticed today that a lot more people asked questions in the noon session rather than the morning session. Either because students are much more awake in the afternoon rather than 9 in the morning (I can vouch for that from personal experience as a student), or because us, the tutors, were more awake, and therefore, more inviting in regards to questions. Perhaps even because the students usually go through the questions directly before the tutorial, so having a tutorial in the afternoon gives them more time to prepare their questions. I also noticed that students were more involved in going through the questions in the morning session, which comes in support of the latter.

4 Physics 1 DropIn

November 12th

Being a 2nd year direct entrant to the University of Glasgow, I have not had experienced this type of tutorials before as a student, so this was my first exposure to this type of tutorials. The student:tutor ratio was very close to one so every tutor was mostly helping one of the students, and therefore there were longer and more meaningful questions. The longer interaction also helped with actually leading the students to the answer to discover it on their own, which proved more difficult than first expected in the other tutorials.

5 Physics 1 Workshop

November 13th

Nothing much happened today. Since students take about 15 minutes to read and try out the questions, this only leaves them another 15 more minutes to ask us questions since the second half is dedicated for the assessed workshop questions. However, a few interesting things that happened were that one of the other tutors and I engaged in a discussion about one of the questions to try and better explain it to the students; and that one tutor asked me to try and give an alternative explanation to one of the students' questions - it was, however, algebra that the student did not fully understand the first time around, so after breaking it up into smaller steps they were able to understand it.

This led me to think whether having more than one teacher in a regular class would have a positive impact; and reminded me of a class last year where we had a guest co-lecture for some of the classes. I think that helped a lot to see things from two different perspectives.

6 Physics 2 Tutorial

November 19th

This was the second P2 tutorial, and I still stand by the statement I made earlier that I enjoyed P2 tutorials over P1 ones; I believe because both the curriculum is still sort of relevant, and the academic maturity of the students is also closer to ours.

I don't know personally any physics 1 students but have some friends in physics 2 whom I sensed that they were more comfortable asking me questions, although I tried to give equal attention to both students whom I already know and students whom I don't

I was also asked a question that was not in the tutorial questions, which I think I handled fine, as the Physics 2 material still seems relevant to my studies in fourth year – at least a lot more so than Physics 1 material.

7 Physics 1 Tutorial

February 8th

This was the first 2nd-semester tutorial for me. Questions from students seem to be on the decline. I am not sure if the reason for this was whether this is the time of the year when students study much more as exams are approaching, or because this is the time when the students' enthusiasm and attendance decline. I will assume the former, though, mainly because when checking with students' they usually seem to have done the right things.

Most students asked about, or have gone through, only the first question, but to be fair it was the longest and most time-consuming. I noticed that usually those type of questions are always put at the start – I am not sure if this is the best way to arrange them, as I believe diversity in questions makes up for a better understanding than spending too long on a single question.

8 Physics 2 Tutorial

February 24th

Today's questions were on Optics and Classical and Quantum Waves. Trying these questions out before the tutorial I found out that there is a big gap in difficulty between Optics (very hard) and CQW (very easy). Interestingly, I was only asked questions about the CQW, although I tried to encourage the students to attempt the Optics questions, but they seemed to be very put off by the difficulty. I strongly think that a solution should be thought of in regards to this. Either by only including a smaller number of more difficult questions, so that it is not very frustrating for the students if they are not able to solve them, or by only including a large number of easier questions that are more varied and cover a larger part of the material. I think the latter would be more fun and helpful for the students.

9 Physics 1 Tutorial

March 7th

This was an observed session. Surprisingly, I do not think that added any pressure. (I believe this is because I was observed by a peer rather than a senior - I wonder how it would change if it was otherwise.)

I was asked about a mechanics question first, in which I was successful after some effort to lead the students to the answer on their own. I was then asked a quantum mechanics question, which I found very hard to explain without getting deep into 3rd year concepts and complicated mathematics. After some time trying to lead the student to the answer, they seemed completely clueless about what I was saying, I ended up reminding them of the relevant equations, which is probably how they are taught quantum mechanics in first year. This makes me unsure whether quantum mechanics should enter the 1st year curriculum at all. Looking back at this point from my own perspective at my university education, I would perhaps argue that it should not. Lastly, I was asked about a past paper question, which caught me by surprise. Luckily, the student had already had a good starting point so thinking my way through up from that I was able to explain the question and leading them to the answer.

10 Physics 1 Workshop

March 24th

Today, the students spirits were not very high, with a number of them sitting in the back, watching videos on their computers, and waiting for the assessed part of the workshop. Some were paying a lot of attention, however. Most of the questions were about the particle physics part, on topics such as baryon number conservation, which the students seem to find very confusing. I do remember that I found it confusing in my first year as well, so it is not very surprising. This indeed falls in the same sort of topics as the quantum mechanics that I talked about in the last journal entry, that is hard to explain other than to say *an electron has a baryon number of zero, and there's nothing more I can say at this point.* So perhaps, there might be a need to find a new way to reintroduce sophisticated topics to first year students in a novel way.