Advanced Research at Adelaide – A student perspective

Good morning everyone and thank you for coming to listen to our presentation. My name is Natasha and I am currently a 3rd Year in the Bachelor of Science Advanced program and I am going to major in Physics with a particular interest in astrophysics.

Good morning everyone, I am Chantelle and I’m also doing the Bachelor of Science Advanced at Adelaide Uni, I am in my 3rd year and I am majoring in microbiology and physics as well.

So the talk we are going to give today is just going to be a review on what we are doing, our study program cause I don’t think many of you are familiar with how a bachelor of science works at university, then I will just give a bit of an over outline on the Research Project. Can you just put your hand up if you have already started your Research Project? So, only a couple, ok.

And then just, we’ll discuss how we chose our topic and how we apply the skills we learnt in the Research Project to our current research degree.

So a Bachelor of Science at Adelaide Uni is a three year degree and then you can choose a Bachelor of Science that specialises in an area, so Tash and I have specialised in advanced research which is a research intensive degree, so you have three core subjects that you have to do every year, one every one year, so one per year, and you work alongside an academic. You can major in physics, chemistry, geology or biology, so you’re not already set a pathway when you enter into the degree.

Now , I’m not sure if you are familiar, but you have two different types of Research Project, A and B, so A doesn’t go towards an ATAR , whereas the B one does. Your outcome in your B has to be a written report, that’s just an outline of the assessment guidelines and the capabilities that you have to develop along the lines of literacy, numeracy, information and communication technology, personal and social and a couple of others as well.

When I handed up my Research Project and Natasha as well, we had to submit 10 pages of our folio, our research folio, which may have been 50 pages long, so that may have changed, I’m not sure at the moment.

So I started my Research Project at the end of year 11 and I did it over the summer holidays and finished in year 12 so I think I handed it up around maybe term 2 in year 12. So, my original, my topic that I choose and did for my Research Project was mining on the moon and how it could help humanity, if it was economical, ecological, things like that. I’ve always had an interest in space, ever since I can remember, since I was little, I always loved space and really wanted to know all the answers to everything, and it wasn’t until senior school and particularly Research Project that I sorted discovered astrophysics, and I think the Research Project was a really good opportunity for me to see if I enjoyed this area and if I wanted to go into further studies at university and possibly do research in this area.

Another thing that you really had to consider when choosing a topic for Research Project was whether or not primary sources were going to be a problem. Since that is a requirement for Research Project that you have to be able to contact someone in person whether it be through email, telephone, a personal interview, something like that, and I realised that there were researchers at Adelaide University and other universities and other organisations that knew stuff about this and could give me insight to the topic that I’d chose.

Originally actually I had chosen a topic to be why Pluto wasn’t a planet anymore, but after I sort of discussed with my teacher at the time, we decided that I wouldn’t really be able to find enough information to be able to write a full report on it, and I probably also wouldn’t be able to find a great deal of primary resources and it was, didn’t fit also into the capability categories that Research Project supplied. So I ended up changing and it was for the better because the topic I chose ended up being really quiet good.

My topic for the Research Project was stem cells, I chose this by, you brainstorm a couple of ideas that you would like to research, so I had you know physics and biology and then you chose specialised areas that you want to research in. The way I chose to do stem cell was because I found an extensive research article in a medical magazine which explains stem cells to me in its entirety. So I could then, and then there were also authors alongside the article, so I could use them as primary resources, so automatically I had this huge bank of resources that I could start to use.

I chose to do it in biology rather than physics because for university physics and maths, physics is a prerequisite, whereas biology isn’t a prerequisite for university biology. So instead I could focus on biology in my Research Project and do physics as a subject. This stopped me from overloading as well because if I had to do biology as well plus Research Project it would have overloaded.

So one of the most important skills that I learn in Research Project was how to assess the reliability, credibility and bias of a resource. This is really important when you have a huge article and you need to know whether or not it is trustworthy and legitimate so you can use it, and it is true in your research. The other really important thing I learn was how to select key information out of a large body of information that might not all be relevant, because when you are writing a report it needs to be concise and to the point so you don’t lose focus of the reader and at the end of the report they can go yes, I know exactly what they told me and they’re not left sitting there confused and questioning what actually was your point for the whole article. Often of course you also have to follow word limits, so you can’t you know write 50 pages on stuff that doesn’t really matter.

The other thing that I learnt that was really important was how to site my work properly. Before Research Project I had never really used in-text referencing in the Harvard referencing system. So it was really good for me to learn because now at university in the advanced science program I use it all the time, we always have to in-text reference and you really need to make sure that you give credit to those who deserve it, for people whose information you have used.

Another good thing about Research Project that has also helped me in advanced science is being able to approach academics. Cause in advanced science you work closely with academics in first, second and third year, interviewing them and doing research with them, so it is really important to know the sort of language you need to use, and you know, sometimes they’re not always as friendly towards high school students, you might feel like they don’t want to speak to you, but I definitely recommend contacting as many people as you can and you will be surprised how many people might reply to you cause I think they are sometimes quite excited that you care about their research, so that’s really good.

It is really important in the research industry to make sure you can communicate properly because when you’re, if like giving a presentation, or a conference or something like that, you need to be able to get your point across when you speak, not just in a written report cause it’s a lot easier to write report cause it’s not on the spot.

Another really important thing which wasn’t as important for me because I was sort, I sorted of really did it before Research Project but it could be really important for other students was mastering independent study. This is really good because at University you don’t have a teacher over your shoulder, telling you what to do all the time, when things are due, and how you should fix stuff. You really have to do it by yourself, you have to have determination and motivation and initiative and you know, try and do things on your own, so Research Project was really good for that. Especially for me cause I had to do it most of the holidays so I wasn’t at school all the time and didn’t have a teacher there all the time to ask questions to. So that’s really good for developing independence.

You have to go to these academics, sometimes they are a little bit slow to respond, and sometimes they don’t respond at all, so I emailed 30 researchers and I only got emails back from 8 or so, and one of them actually invited me to call her and I could have a phone conversation, and then later on in my Research Project I also called her again just to check up on things, so she was like my adviser throughout the Research Project and that was important for me to find so I could have someone to reference to and make sure that information I was conveying to other people is actually correct.

Again, the self-management is important, so I started my Research Project in my year 11 2011, and over the summer holidays I researched, found some people to contact ,and then when my year 12 year started , I already had a whole heap of resources and someone already guiding me through.

As I said before, we had to choose 10 pages to hand into SACE so they could be marked of our folio. So your folio is all your research that you’ve done so you’ll stick in papers that you’ve read, videos that you have watched and annotate them, and then you just choose 10 pages of those to send into SACE and that for me was very difficult because I thought all my research was valid, why did I only have to choose 10, but it helps you really concentrate on what points are important of your research, and what you really needed to show people that you had found out, and which maybe weren’t as important.

Also that was the first time I had ever been in contact with a scientist and usually the perception, I think high student perception of scientists is that they are always in a laboratory and they don’t communicate very well with other people. But, obviously as soon as I got in touch with my academic that I was talking to she was very friendly and very eager to help and often wasn’t in the lab, she was often teaching university students, so it really de-bugged that stigma I had on scientists.