Respondent 1 Interview

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**SPEAKERS**

Megan Roberts, Angelique, Respondent 1

**Respondent 1 00:00**

But this morning was a bit hectic. So

**Megan Roberts 00:03**

Yeah, that's okay. Don’t stress.

**Respondent 1 00:05**

If you don't get it Monday, please remind me, just send me an email.

**Megan Roberts 00:09**

Okay, I will. Okay, so, um, I am recording just so that you are aware of that. So basically, what we're going to do is I'm going to ask you a couple of questions, I just want your opinion on the structure of the first-year plant science module, so BOT 161. So, I'll ask you a couple of questions. And I might ask you to elaborate depending on what you say. And then we can go from there.

**Respondent 1 00:47**

Okay.

**Megan Roberts 00:49**

Okay, so the first question that I have for you is, is plant blindness or a lack of interest in plants a problem in your institution?

**Respondent 1 01:05**

So, you're speaking globally, including everyone, so staff, students, you name it?

**Megan Roberts 01:12**

Yeah. So, I think more specifically, students, but let's go with everyone.

**Respondent 1 01:19**

Um, well, at the academic level? No, I don't think so. Well, certainly not in my department. For obvious reasons. I think there's definitely less of an interest than there is in animals, let's put it that way. So, if students are keen on nature, they're typically going to be keener on animals. Which I suppose one could consider to be a form of plant blindness. But it is not a problem in isolation. And I think it's a problem more globally, in society. It's not necessarily confined to the institution, it’s a general human thing, we're more interested in the cute and fluffies than the green guys that sit around doing nothing. So yeah, is that good enough? As an answer?

**Megan Roberts 02:09**

Yeah, that's good. So, do you think do you have a specific reason in mind as to why people would prefer plants? Ag animals over plants? Or is it just...

**Respondent 1 02:21**

I think it's an inherent bias, at least partially, I do think that culture influences it, but I'm, I think that there's an inherent bias in human beings, we just naturally appreciate cute and fluffy things more than the green plants that grow around us the things that move the things that interact with us directly. You know, that directly, immediately respond to what we're doing. I just think that we have a natural tendency towards interest in animals. And things that can show signs of intelligence that shows signs of reaction to what we're doing, in sort of real time, instead of, you know, waiting for weeks or months for it to grow to some kind of responses or stimulus. But I do think there are cultural aspects. So, you know, if it is a bias, it definitely doesn't explain all of that plant blindness, let’s put it that way. But I do think it definitely contributes.

**Megan Roberts 03:28**

And my next question to you is, do you have issues getting students to enroll for your plant science degrees?

**Respondent 1 03:41**

Megan it's a difficult question for me to answer because I've only been involved in plant sciences for two years now. So, I don't really have much in the way of a base sort of baseline to be able to draw on. I'm fairly happy with the number of students certainly in my plant, sort of devoted courses. So, I like the third-year class, in terms of its number about, 30 to 35 students, I think, is a pretty good number. It's not like I've seen any signs that has decreased over the years, again, only two years of experience. But I don't think that there's been trouble getting hold of students there always are enough for them to justify doing the course. The two honours courses that I started this year, one as one student, the other as three. There is scope for more, but not much more. I think we would then move outside the capacity of what we are capable of handling for honours students. Um, so I haven't had trouble it's not like I've actively been going out trying to recruit these students from undergraduate to honours. They've come of their own accord. And I don't think that the numbers are, you know, terribly, terribly bad. Obviously, it would be nice if they were more. But I think that that might start running up against the limits of what the staff can handle, basically, certainly, in my course, it would take a radical rethink of how I approach the course, if you had a larger class.

**Megan Roberts 05:28**

Thank you for that answer. My next couple of questions have to do with the structure of the first-year plant science course. So, the next question is, do you think a first-year plant science module should have a narrow approach covering a few concepts in detail or a broad approach touching on multiple concepts within the field?

**Respondent 1 05:57**

Broad approach, definitely. Um, do you need a reason why?

**Megan Roberts 06:03**

Yes, please.

**Respondent 1 06:05**

So, specifically, because there is this idea of plant sciences. And because with regards to the department as a whole, this is sometimes the only exposure that some of these students get to some of the things that they can do later on in both their undergraduate and postgraduate degrees. from a purely sort of exposure point of view, you need to touch base on this on as broad an aspect of plant sciences as possible. It's unfair otherwise on staff who might, for example, have very, very niche but very, very cool interests, or very, very, sort of active fields, but they're not going to be able to interest students in pursuing those fields if students are not exposed to them. And secondly, it's supposed to be a foundational kind of thing. It's supposed to be there to give you a broad basis in, in knowledge about science, it mustn't be deep at first level, that's the entire point of pursuing your more focused undergraduate courses in second and third year, or eventually, hopefully, honours or further on. I very passionately believe that your first-year courses should be aimed at as broad an audience as possible, so that the students get exposure to as many aspects of on that particular topic as possible.

**Megan Roberts 07:32**

Wonderful, thank you. My next question for you is okay, did you have a look at the interview guideline that I emailed?

**Respondent 1 07:48**

Megan, I did not. I'm very sorry. But I sort of briefly scanned through the questions. And that's literally as far as I got. I didn't go into any great detail. Sorry.

**Megan Roberts 08:00**

That's fine. So, I'm going to then read the next question to you. Would you prefer that I posted in the chat box?

**Respondent 1 08:14**

Nope, you can read it if you want to.

**Megan Roberts 08:17**

So, which of the following concepts do you think should be incorporated into a first-year plant science module, evolution, pathways and transformations of energy and matter, information flow, exchange and storage, structure and function systems? Or if there's any other thing that you think should be incorporated?

**Respondent 1 08:42**

So, most of those, definitely, where I would maybe consider taking something out, for example, maybe information flow, it's something that I know is handled in first semester, first year courses. So, things such as the central dogma, and you know, DNA replication and expression of genes, all that kind of stuff, that to my knowledge is handled in first semester. So, I do feel that there, it could maybe be touched on if there were unique plant specific aspects thereof, but if it is something that's already handled, then it's repeating and that time and space could be used more productively with one of the other components. I would definitely not remove anything that you mentioned, except possibly the one about the information flow simply because if it is the way I understand it, which is basically genetics, it is handled in first semester. All the other components must absolutely, definitely stay in.

**Megan Roberts 09:53**

Okay, and if you had to pick two that you thought were more important?

**Respondent 1 10:01**

We can I suspect you're going to get very biased answers from everyone you asked for that. So, evolution definitely, um, but that, quite frankly, is a biased answer, because that's what I study. So that's my field of interest. Secondly, the thing is, I cannot quite frankly, sort of choose them because they're all important, I cannot see a student understanding the evolution component without doing the systems and the ecology component or the, the plant structure and function components, I can't see someone who's working on sort of energy flow through the system, and being able to understand that without many of the components from the other sort of major themes, I suppose if I really forced to choose, but again, probably biased, it would either be the system's approach or the ecology, interaction with other organisms approach, or the form and function. But again, I'm biased that because those are my interests, those are areas that I am actively involved in. So, I'm pretty sure that if you asked any of the other scientists, they would probably give you a different answer. I would not, if possible, remove any of those. I'm also not entirely sort of happy with that idea of elevating one above the other. They're all important. Um, yeah, sorry, I can't give you a clear answer.

**Megan Roberts 11:41**

That's fine. And is there anything that you would add to those?

**Respondent 1 11:48**

No, from what I remember when we were looking at the courses a whole that covers in some or other way pretty much everything. I don't see any huge sort of gaps. Certainly not at first year level. Apologies, Megan. Sorry, I just want to put my cell phone on silent.

**Megan Roberts 12:11**

No problem.

**Respondent 1 12:11**

Sorry about that.

**Megan Roberts 12:14**

Okay, that leads me to my next question. So, which of the following threshold competencies Do you think should be incorporated in the first-year plant science module, the process of science, the interdisciplinary nature of science, integration of science with society, communication, collaboration, being able to understand and interpret data and quantitative competency?

**Respondent 1 12:47**

The nature of science is also done in first semester, to my knowledge. I mean, if you want to devote a quick 10-minute refresher course at the beginning of the first lecture, then I have no trouble with that. But I do feel that if something is already covered in another part of the first-year syllabus, then repeating it unless it's reinterpreting it for a specific subfield, I feel that that is wasting valuable time, that could be spent, you know, on other areas of the syllabus. I definitely feel that interpreting data, so you know, things such as graphing skills, understanding figures, that to me is quite important. And so even collecting or gathering data, so what I'm very fond of and very passionate about is experimentally driven science. So, I'm going into the, to the lab, whether it be the microscopy lab, or you know, whatever labs you've got and actually generating data to test some kind of a hypothesis. Because, in a way, I feel that that strongly binds to this idea about what the nature of science is. But that's also what practicing scientists do, so I feel very strongly about that. And I think collaboration, to me is a little less important simply because I think the students are basically forced to work in groups so often, that's going to come if not naturally, they'll eventually be forced to learn it. So, I can't think of a single course I'm involved in where the students do not work in pairs at some point or in groups. What are the other potential aspects?

**Megan Roberts 14:40**

The process of science, integration of science with society, communication, and quantitative competency?

**Respondent 1 14:52**

So definitely, competencies are good, handling a microscope, handling a pipette. Poor ecologists can't get 600 students into the field, but I would have suggested, you know, basic sampling design. And these are all things that I think are valuable. And then communication I mean, these are skills that are that I think, come through all of the courses. And there was a final one, which again, I forgotten, sorry, what was that, again,

**Megan Roberts 15:21**

The process of science.

**Respondent 1 15:24**

My feeling is that the process of science is handled in the first semester and the simple fact is, if you design hypothesis driven aspects to your course, where students gather data to test hypotheses, you are teaching them the process of science. So, that means almost, literally tripling this by having a section in saying, science works with hypotheses, yada, yada, yada, they will have learnt that in first year, and now they'll be getting full exposure to it in second semester.

**Megan Roberts 16:01**

Are there two that you think are more important that you would choose, if you had to choose two that you would like to specifically integrate into a first-year module?

**Respondent 1 16:20**

Um, I think the competency thing. So, and process driven science. So actually, putting together hypothesis, gathering data, testing it and interpreting it, to me is fairly important. I forgotten the others again, sorry, what are they maybe there's someone something in there that I should probably include

**Megan Roberts 16:48**

The process of science, interdisciplinary nature of science, the integration of science with society, communication, collaboration, understanding and interpreting data.

**Respondent 1 17:05**

So, understanding interpretation of data, competencies or skills, probably those two science and societies, to me is something that's interesting, because I think it's showing increased focus. Certainly, in the last couple of years, this idea that scientists are these kinds of robots that just churn out data, instead of being, you know, embedded in a society that has cultural values. I just don't want the course to focus on that. If it were ways in which it could be shown that the study of plants has enriched, which obviously it does, you know, general life, so increasing the quality of life, for the average human being, or it could be showing how it's decreased, for example, so you know, the illegal trade or, you know, various ways in which plant products have been misused or abused, that I think would be incredibly interesting. And it certainly should grab first year’s attention and should be known to them. But I don't think it is, to me at least a major component. It's something that I think would come up organically if you if you had your course designed properly. You know, you could tell people, things like, well, this is an opium poppy, incredibly useful for medicinal purposes, but also responsible for a gigantic drug trade. So, I can understand why it would be relevant in a plant course, but I'm not sure it should be emphasized to the detriment of the others. I could put it that way.

**Megan Roberts 18:56**

Do you think specifically that the integration of science and society, do you think that would maybe if you had to integrate that into a first-year module, do you think it would play a role in sparking people's interest and maybe getting them to enroll for the second and third year on science courses?

**Respondent 1 19:19**

It could, especially ways in which I would address plant science. So, in other words, ways in which you don't realize unconsciously you are massively impacted and affected by plants and plant products or plant processes every single minute of your life? Absolutely it can be used, but I think to me, at least, it comes up in my courses at least organically. So, I'll be teaching something else and then I will happen to mention something that will be a hook on to science and society. So, for example, in a recent lecture, I was mentioning that the malaria parasite Plasmodium is has a modified chloroplast in it. So, it's non photosynthetic, it's still used for other major components of, of cells metabolism. But because it has the chloroplast, some of the most promising ways to deal with malaria, and the parasite that causes malaria, is to treat it with herbicides, to treat it with things that target the chloroplast. And suddenly, that is, to me, at least, the way to grab someone's attention is to say, you know, what, you thought malaria was an animal, or whatever you thought it was, before you learned a bit about microbiology, but it is in some way related to plants, it has something that is a crucial critical plant characteristic. And that might suggest a way to cure this massive sort of human disease. So there to me, there are many ways in which you can hook interest in a specific field of plant sciences by exposing how it interacts with human beings or with other components of the biosphere. I just find to me that that arises organically, I don't see myself devoting an entire section of my course to it for example, others might feel differently. It's not like I don't feature that at all, I very often try and bring it in. But it tends to arise spontaneously. It sort of emerges out of the way I structure my courses. Um, yeah, I don't think I have anything more to contribute on it. Sorry.

**Megan Roberts 21:45**

Thank you. Okay, um, do you think, oh, any of those? Is there anything specifically that you would not want to put into the course?

**Respondent 1 22:00**

No, I think they should all be in. I would just, unlike the major themes that you dealt with two or three questions ago, which I think are equally important, I would just weight them, to me at least, there are things here that are more important than others. So, I would, I would like all of them to feature somewhere, but some of them to me are more important than others. So, things such as teaching based on competencies, you know, the practice and process of the scientific method. Whereas for example, science and society science and communication, stuff like that, I would tend to weigh less, I wouldn't mean that I would discard them from the course. They're just not as important to me at least as other aspects.

**Megan Roberts 22:54**

My next question is dealing with vision and change. So, I sent in the one email, there was a little link to like an information document on Vision and Change. I'm not sure if you looked at that.

**Respondent 1 23:12**

No, but I can have a quick look at it.

**Megan Roberts 23:15**

You can if you want to, the question is, have you ever heard about vision change before that?

**Respondent 1 23:24**

No.

**Megan Roberts 23:25**

Okay. Do you want to look at it quickly?

**Respondent 1 23:34**

I can do so. Let me just quickly get your email. Is it in one of the PDFs?

**Megan Roberts 24:14**

Yes, it's in the information booklet, I think that’s what I called it.

**Respondent 1 24:32**

Okay. Vision and change. Okay, so this is essentially where those major themes etc. etc. came from?

**Megan Roberts 25:01**

Yes.

**Respondent 1 25:02**

Right. Okay. Would you like to ask a question?

**Megan Roberts 25:06**

Okay, so, um, have before you read information booklet have you ever heard about vision and change?

**Respondent 1 25:20**

No. Well, no, it's possible that I've read about it. So, I typically, um, no, let's stick with no, if I have read about it before I instantaneously forgot about it.

**Megan Roberts 25:38**

All right. My next question for you is, what do you think the barriers to changing a first-year curriculum will be?

**Respondent 1 25:57**

So, I think there'll be a little bit of headway from staff members who have been involved in the course, and think that it's working perfectly adequately. They'll also maybe be sort of kickback from staff members who want it to change because they think it isn't adequate, but they dislike the direction of change. So there, at least there will be other things that they would want to emphasize in the course. What else, I think my major worry would be with this is something that you wouldn't know until you've actually implemented it is that it is you go to all this time and trouble to end up with a course, that gives you effectively the same outcomes. So, you invest huge amounts of time and effort in this, and, you know, huge amounts of passion and research and, and ways to try and get the course as productive and cool as possible, only to find that there's this typical sort of student apathy where you don't really engage them. So as a result, you don't get higher throughput rates, you don't get higher pass rates, etc. etc. But that is that is hypothetical, you won't know that until you actually do it. So, I think that the major sort of opposition to that will be probably twofold staff members that don't want to change, and staff members that do want to change, but not in the way that will eventually be implemented. Students wouldn't know better, I don't think that faculty, certainly at faculty level, there'll be any problems.

**Megan Roberts 27:44**

Do you...

**Respondent 1 27:44**

Sorry, I interrupted you.

**Megan Roberts 27:46**

It's okay. And do you have any suggestions of how we might be able to overcome these challenges or barriers?

**Respondent 1 27:54**

I think listening to the well, they're both going to require, I think, different approaches. So, for example, staff members that think things are working perfectly fine. Maybe hear from their side, what they think is working about the course. You know, what do they think are the aspects that that the students really engage in that get them interested, you know, that that encourages them to learn, and to dig deeper? Because there probably are very nice aspects to this course that can be maintained. I know for my section, for example, I took one look at it and threw up my hands in horror because it is not what a diversity or evolution section for a first year plant science module, should be. I mean, there are definitely aspects to it that do work. And it might be interesting to hear from, from those who are involved in the course. What are the aspects that they think do work? And what would they like to retain? For those who wanted to change and then just basically balk at any one of the changes proposed. Um, I mean, it's certainly worthwhile listening to them as well. But a decision has to be made. It appears to me that that the general feeling is the course has to change. So as a result, someone then has to have final say on change into what, but again, sometimes the ideas that people have are valid. So, I think listening to what others have to say, and then providing them with a detailed enough feedback to say, I don't think this idea is workable, and these are my reasons why. Instead of just making it you can obviously you made them decision, but then at least make it transparent. Um, those would be my answers.

**Megan Roberts 30:09**

Right. So, my next question we have sort of touched on already, I don't know if you want to add anything extra. But my next question is, what kind of resistance do you foresee will lectures specifically have if this change is being introduced.

**Respondent 1 30:30**

Yeah, I'm struggling to think of, of anyone who would have resistance to change in the course, except lecturers that will be involved in the course. Um, I don't see a change or a problem from faculty side, the students won’t know better, because, well, except for the rather large chunk of them that are repeating. Um, you know, they're experiencing it new, they've never had the previous course to compare it to. So, I struggled to see any other sort of force that would want to prevent change, except amongst the, the academic staff. I don't know, what were you thinking of any other examples? Am I missing a major sort of, of group that has an interest in this?

**Megan Roberts 31:22**

No, you were pretty much on track with what we were thinking.

**Angelique 31:28**

I said, I wasn't going to interrupt. Can I just quickly ask something while we're on that topic? And do you think that the students, because we never talked about this, that the students would resist changing the way we do things, you know, not just the lecture, and they have to work more? Sorry,

**Respondent 1 31:53**

They are first year students and I don't think they'll know better? You know, you can say, oh, you're making them work more, but they're not because it's the first time they're experiencing the course. At least that's the way I interpret that question. Um, so what I was thinking maybe there is a way to judge that. And that is at the end of next year, okay. Granted, this is the worst possible set of years to do this in given COVID. But it might be an idea to actually query the set of students that are repeating to say, you know, which version of the course do you like, what aspects of the old course did you like? What aspects of the new course do you like? There are obviously going to be biases in this because this is the set of students that are doing badly in the course. So, you're not you're getting a neutral perspective, that's representative of the entire class. But it's worthwhile asking, that might be something to look into.

**Megan Roberts 32:54**

Yeah, I think that would be very interesting.

**Respondent 1 32:57**

Yeah. Again, you're just you'll have to be aware that these are exactly the students that didn't pass the first version of the course. So, you know, you do get a sudden improvement. The reason might be just because, you know, it's the lowest quartile of the people that are allowed to repeat or whatever the case might be. But if I mean, if you're interested in that, then my immediate response is why not ask them, and unfortunately, those are your only students that are going to be exposed to both versions of the course.

**Megan Roberts 33:33**

And so, my next question...

**Respondent 1 33:37**

Sorry, no, now that I think about. Okay, that's also maybe not the best idea because your sample size is small. But if there are any demonstrators or tutors that teach both years, you can also then ask them as well. So, your sample size is smaller, so your variance is going to be higher, but you're going to at least get a rather more neutral overview of the course from the tutors’ perspective.

**Megan Roberts 34:07**

I agree, thank you for this suggestion. I think that's actually something we should really look at. Um, okay, so my next question, like I said, we've already sort of touched on what could potentially be a good selling angle for us to motivate people to be willing to take part change?

**Respondent 1 34:31**

Sorry, repeat that last section.

**Megan Roberts 34:35**

What could potentially be a good selling angle for us to motivate people to be willing to take part in the change process?

**Respondent 1 34:56**

I really struggled to find an answer. I think being open, willing to listen to people's complaints, willing to listen to people's suggestions. And then being honest with your answers. You know, saying why, okay, fine. We are now involved with recalculating this course, your idea, you have a very valid point. But we simply cannot implement this within the structure we've currently got. Do you have other suggestions for how we could do this? You know, just try and keep the processes open, and sort of a two-way street as possible. And I think you will always get sort of kickback from some staff members, because it's just the nature of humankind, there will always be people who prefer the old to the new. So, you're never going to get everyone on board. But I do think that to make things as frictionless as possible, it's a case of making sure it's a dialogue that everyone gets heard, and that if their suggestions are sort of naysaid, that they get to understand what the reasons are. And then maybe even offered a chance to come up with an alternative. So that way, it is a case of everyone is on board with what's going on, everyone understands the issues involved. But everyone feels that their opinion is being heard. And they're actively being engaged in the redesign of the course.

**Megan Roberts 36:41**

All right, thank you. My final question to you is with regards to the pracs. So how important do you think hands on practical sessions are for a first year on science course,

**Respondent 1 36:58**

They are absolutely 100% important, you cannot get rid of them. There are no ways that you could do a virtual online prac. Um, well, maybe one or two in a semester. But there are simply no ways you can get people to experience plants, if they don't experience plants, you need them to be hands on, to do sections to look at the slides under the microscope to feel and look at in detail the structure of a flower. These are things that just to my mind, at least are the most surefire ways of inviting interest of inspiring passion. So, to get rid of them turns your course into something that is just orders of magnitude poorer. Certainly, with regards to things such as maybe attracting more students into the sort of the stuff that you're doing lectures, you can do backflips in class with regards to the amount of effort in preparation you get in, but it's something that grabs the student and very often, it's something tactile, something that they see under the microscope with their eyes or a reaction that takes place or a color change or something like that, that that that bites them. And that's how you basically hook them into maybe changing away from another course direction they were going in or deciding them if they were still undecided. So, I if there were any, if they were any suggestion of removing any kind of direct, practical in this course, I would be absolutely against it. That is one thing I do feel very strongly about.

**Megan Roberts 38:47**

Do you have any suggestions as to or ideas as to things that you would definitely say should be in a prac? So are there specific practice or skills that you think they should learn, for example, microscopy, or...

**Respondent 1 39:04**

So, I would be very much for microscopy, things such as basic dissection skills. So being able to, you know, dissect a plant to realize what a petal is to pull apart is stamen, stuff like that. But if I think of all of that microscopy is the most important, they don't get enough exposure to that. I'm just trying to think from the perspective of other sort of major fields of plant sciences. So, for example, I don't know if they do chromatography or stuff like that at first level, but that is also cool. It's interesting. You see these funky pigments separating on a slide. It's really cool. So yeah, basically, things that cover some of the competency competencies that we talked about. Earlier that could be done in a practical should be emphasized. I just don't have enough experience of the other major segments, the department what they do in first year modules to say when they're important or not. But yeah, that's the kind of stuff I would have a sort of a strong feeling towards.

**Megan Roberts 40:25**

Um, okay, so that's it for me for questions. Do you have any questions for me or anything that you would like to add? With regards to any of the questions or anything else?

**Respondent 1 40:38**

I don't think so. I mean, you're the sort of the reasoning behind your question seems to me to be fairly sort of clear. I can't think of anything offhand. If I do, I'll probably just mail you or run into the corridor or whatever the case might be and say, hey, Megan, I don't quite get this or whatever the case. Um, Nope, sorry, nothing more to add.

**Megan Roberts 41:07**

Okay. Thank you so much for your time.

**Respondent 1 41:10**

It's a pleasure.