Respondent 21 Interview

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**SPEAKERS**

Respondent 21 Megan Roberts

**Megan Roberts 00:00**

But I guess that's okay. So, I started recording the session. So, most of your answers that you sent, were pretty much I got the information that I needed out of them. So, there's just a couple of things that I want to clarify on some of them.

**Respondent 2100:23**

Yes.

**Megan Roberts 00:24**

Okay. So, for question one, you said that you didn't think that there was a lack of interest in plant sciences specifically, but rather a sense, a lack of a sense of importance of conservation. Can you explain that a little bit to me, please?

**Respondent 2100:40**

Yes, maybe? And maybe I can ask you a question. First. I just quickly want to hear what's your background? In terms of botany? Are you a botany student? Or are you an education student? How does it work?

**Megan Roberts 00:55**

I so my undergrad was ecology at up. And then my honors was in plant science. But I did an education project with Angelique, but was plant science modules. And now I'm doing my MSc in the department of science education.

**Respondent 2101:17**

Okay, okay, now that's good. I'm talking to a fellow ecologist; it makes life easier. There often the guys from it from education, they don't really understand the content of our courses and, and the difficulties that we sit with, in teaching the content, okay, to begin with, maybe I should explain to you, the campus that I'm working on, I'm working at the University of Zulu land. There are only Zulu students in my class. So, all of them come from a background where plants are really utilized. It's a, it's from a utilitarian perspective, it is not so much from a conservation perspective, at the moment, they realize that some of the plants, especially the muti plants that they are using are becoming threatened and scarce and rare, then all of a sudden conservation becomes an issue. But before you before you have the opportunity to make them aware of this, this does not feature on their radar. So, at the moment, most of them want to study biochemistry, and microbiology, and really try to delve into the medicinal properties of these plants. And of course, the agricultural side where many of our indigenous plants can be used on an economic scale for economic profit. So, it is it's a utilitarian outlook on botany. But it's cultural, because that's the way that Zulus have seen plants in and around the environment. So, conservation is new to them. But we have to start somewhere. So, I hope that explains the first part of what the first answer to your first question.

**Megan Roberts 03:15**

Yeah, it does.

**Respondent 2103:17**

okay.

**Megan Roberts 03:20**

So then, in terms of the second question, you said that the you have a lot of students enrolled for botany, but that they're not necessarily interested in being there that they're just there because they have to be there. Does that not show in some sense, a bit of a lack of interest in the field specifically?

**Respondent 2103:44**

Well, again, you have to look at it from our system, we have a dual major system, where, they have to take two major lines of study, it can be zoology and botany, or botany and biochemistry, or zoology and biochemistry. And, and many of them would like, that come to the science department would like to study in biochemistry and microbiology. That's where they see the big money lies. And that's where they see the status lies. And it's fashionable to wear a lab coat, it's not so fashionable to be bitten by ticks and to be burned by the sun. And so, it's a glamorous sport, and so many of them are lured to us. And so, the best students go to microbiology and biochemistry. If they don't get into that program. They can take biochemistry and something else, or microbiology and something else. And if they perform very well then, they can move from after the first year, then they can move from let's say botany and microbiology. They can drop botany and go to biochemistry and microbiology. And that's what they want to do. But then things don't work out the way they do. They discover the party life and they discover student life. And so, they're really dedicated to these strong students like they stay in those positions, they don't drop out. And so, these positions don't open up to the students in microbiology and Botany. And so very often, many of them have breathed this illusion by the time they get to the third year, because they thought by that time, they would have moved over to microbiology, and biochemistry. And then they pretty much stuck with botany now, we always hope to turn their interest to botany and make them aware that there are lots of job opportunities available out there, but you coming from an ecology background knows how dedicated you have to be to create a life in ecology, it's not glamorous, it's very hard working. But I do try to show the students that at the moment there are lots of job opportunities in government for black students if they perform. And so, we try to, to pull out the strongest students out of that group and to secure positions for them in in government positions in government institutions, like SanParks, KZN wildlife and some other provincial conservation organizations. But those positions are limited, the internships are limited. And we are flooded with higher and higher numbers. To give you a simple example. We should not have more than 20 final year students in botany, that's about what we can handle, if we want to really provide them with good quality education, and really personal attention. But by the end of next year, instead of the 20. I will sit with 180 students in my class now. That is, it's unrealistic, we don't have the resources, we don't have the manpower and we create very false expectations, unrealistic expectations and false promises by letting so many students into a system that cannot handle them. And so that second question of yours it is a matter of economics and state policy that's hampering us in producing good quality products that we can hand over to the state that can really be competent, that can really, really good work and conservation. Okay.

**Megan Roberts 08:17**

Okay, um, my next question was regarding Question four. Okay, so you said the categories were very vague. Why do you think they're vague?

**Respondent 2108:34**

Um, okay. I don't know what your first-year program looked like. But if you go back, and what the first-year program looks like, at the moment at Tukkies. I also come from Tukkies, I went through that mill and if you look at the traditional subsections, it was anatomy and morphology. And, and so some of these categories that you have here do encompass them. Do you take them and swallow them in, but I've often found that because lecturers have specialized so narrowly nowadays, that many of them cannot lecture anatomy and morphology and ecology or whatever the case may be, and they are given free rein? This way often happens in zoology. But I see the trend now in botany as well. They are given free rein to lecture whatever they think they are capable of lecturing and making interesting to the students instead of teaching them a really solid foundation and covering all the bases, it's as if the different botany departments, in our country do not have the ability to lay that foundation anymore as if the lectures handling the first year, or not capable of dealing with those traditional subjects and forming a solid base to work on. So that's why I thought those categories that you that you listed there, if you gave them to me, when I first went to the University, when I started as a lecturer, I would have said, huh, which one can I choose there, and I would bend it until it fit my expertise is of not only ecology, but vegetation science. And then I would start teaching a downgraded version of vegetation science, the first-year students, even before they have the basics, the basic building blocks of understanding the bigger picture. So yeah, there's a danger in these loose categories. If you fix them, and say, anatomy, then it can only be anatomy, and morphology, it can only be morphology. So, I think it's a loophole, all that many universities are using at the moment in order to help the lecturers to cope with teaching first year subjects in a manner that they're comfortable with, and it's not necessarily the best route for the students. Okay.

**Megan Roberts 11:50**

So, of all of those that you listed then cell biology, genetics, morphology. Okay, so they do have a general biology module in first semester, which does encompass cell biology and genetics,

**Respondent 2112:05**

Yes, most universities do, yes.

**Megan Roberts 12:09**

So, of that morphology, anatomy, ecology, taxonomy, which do you think are the most important if I had to ask you to pick your top two? Which of those would you pick as being most important to include in a first-year plant science module?

**Respondent 2112:30**

Hmm, yeah, that's a really difficult one, because you asked, asking an ecologist. So, I would, I would promote my own field ecology, because I feel that students need to be exposed to that as quick as possible as early on as possible, so that they can, can start thinking and digesting these concepts slowly, but surely, and by the final year, the third year, then they can deal with the more difficult concepts of ecology, but, but maybe ecology is not the right one to choose. But if I had to choose one, really to get the students fired up about botany in South Africa, I would start with plant diversity. And really showing them what the fantastic diversity of South African vegetation and plants are just to get them interested. I've spoken to many students, over many, many and scientists after they've left university, spoken to them and ask them, "What is the one thing that really triggered them that really fired them up", whether they're had it first year or second year, and as most of them say, it is my first exposure to the fantastic richness and diversity we have in South Africa. So, I would try to hook them there, it's a tool that can serve I must say conservation, greatly. But at the same time, if we understand what the diversity is in our plant life, then all the phytochemistry fields can also benefit from that. And so, but we need to expose students as early as possible to the uniqueness of our country's vegetation and plants. Otherwise, they like they could be under the illusion that it's just the same as, as any other country and if we if you compare the let's say, Sudan, Sudan is a joke, there's nothing there. You know, in my backyard, there are more plants than in entire Sudan. So, it's important for them to at least be wowed in the first year. So that they can understand that these something special about the place that they are, and maybe then they will be interested but if you start with really hardcore anatomy, then they lose interest or if you whatever the case may be, you can make any subject really boring if you want to. But I think we should start with the more interesting things. show our uniqueness, maybe we can look more then to get more of them interested.

**Megan Roberts 15:25**

Okay, so then my next question is for question five. So, you listed for there, the process of science, interdisciplinary nature of science, understanding and interpreting data and quantitative competency, which are your top two of those?

**Respondent 2115:47**

I would say the process of science, maybe the first step that you labeled as A there, it will either have to be B, which is interdisciplinary nature of science, or understanding and interpreting data. But maybe understanding and interpreting data can come a bit later in second year level. But they really need to grasp the fundamental building blocks of science, not everybody's mind for science, many people like to make a living out of talking out of driving the own agendas, I mean, politicians, are that way the law industries are also be different. But the fact that everything in science has to be founded on data, and that the data has to do the talking. I think those are very, very important things that students need to learn very early on. If they don't like it, they need to get out of it. And if they like that, then they need to build on that. So maybe A and B there, I would say are the most important ones. But then those second two that I saw, G, that quantitative competency and statistics is that what you meant there? statistics and ability to work with data, yeah, I do think that students need to be exposed to that as early as possible. I think most universities offer statistics at a first-year level. So, most universities understand that, that statistics are important, and students need to be aware of it as quick as possible. And most universities realize that first year statistics are not enough. And that at honors level, you need to revise it drastically revisited in order to make students aware of it again, how important it is. But I would say A and B in that section five of yours.

**Megan Roberts 18:12**

Okay. Next thing I want to ask you about is question eight. So, you said that you think the drive to change the classical scientific programs is unnecessary. So, part of what we're trying to do is make it more, I want to say we want to teach them in more of an African context. So, when I was in first year, I did this module. All of our examples in our textbook were an American textbook. So, the examples were American. When we were talking about things like anatomy and stuff like that it wasn't South African at all, except for the small section of ecology that we did, which was very South African. So ultimately, these students that we're teaching, they're going to most likely end up working in South Africa. So, part of the reason why we want to change it is so that we can make it locally applicable so that everything they're learning is something that they can use one day in the working environment, which is here. Do you think that that's worth doing?

**Respondent 2119:35**

I agree with you 100%. The I don't want to step on to toes. I'm not going to name any lecturers names, but it is extremely important for a lecturer to transfer their knowledge that they see in a textbook and make it applicable to not only the country that they work in, but even the area that they are teaching in. If you are primarily in the grassland areas, you're focus needs to be on grassland areas. Here in KZN we spoiled. We have many different vegetation types, right here on our doorstep, you can go from forest, to, to really great grasslands in a matter of 100 meters. And so, it's important for that curriculum to get all the examples out of that specific environment. So, I agree with you 100%. That example must come from a specific country. I think it's, it's really lazy from a lecturer not to do that work not to make that conversion. And I do not see that as change. I do not see it as so you would have seen from an answer here that I'm not very keen on change. But when I, when I say, change, I mean, change, go away from classical stop sections, and starting to focus on highly, technological advancements that we see in botany, and the extraction, let say the extraction of phytochemicals at a first-year level, before they've started to understand the bigger picture. So, in that sense, I'm opposed to changing the curriculum too quickly. But I agree with you 100%, that examples have to come from the South African context. If it does not come from the South African context, you lose the interest of the students immediately. And yeah, I couldn't agree with you. In that sense, if that is the goal, then I'm 100% forward to make it applicable to a country and to a region very, very specifically. And if we take my students, for instance, the Zulu, they, many of them have a pretty good understanding of medicinal use of plants. And to use that as a springboard to make them aware of conservation issues, is a very good way of looking at it. And I'm not changing the curriculum. I'm just, I'm just going at it from another angle but I'm not changing the basic building blocks that they need before they can move to the next level. Yeah, that's the way I see it.

**Megan Roberts 22:34**

Okay. Okay, that's all the questions that I have for you. Everything else that you wrote was pretty much gave me all the information that I need. So, do you have any other questions for me or anything that you'd like to add?

**Respondent 2122:52**

There was something that I didn't understand, 4c and 4e. Just quickly see what that was. Yeah, what were those categories that you that you just explained to me, what is that category 4c? Information flow, exchange and storage? Is that being that information inside the plant? Or is it the way that we distribute information after we've done studies?

**Megan Roberts 23:23**

inside the plant so...

**Respondent 2123:25**

Yes, I, I agree that with those categories, that that's a good category to have in at first year level. They need to understand the way that nutrients and bio chemicals are distributed. What was the other one? He says no, not systems, your systems with ecological systems? Okay, then that makes sense. Now, I was just wondering when it's whether it's Information Systems, because everything is geared so much towards Information Technology nowadays, that I just think that students that they can learn those tricks of the trade a little bit later on, not so much at first, it will look like on the test instruments. Not a first level.

**Megan Roberts 24:21**

Yeah, yes.

**Respondent 2124:23**

Okay, good luck with your study. It's, it sounds really interesting. Um, yeah. And so, this is for a masters.

**Megan Roberts 24:29**

Yes. Yeah. My masters.

**Respondent 2124:32**

Okay. Yeah. So, this your first year?

**Megan Roberts 24:37**

No, it's my second year. So, I'm busy rounding up my okay. The last of my interviews now.