**Peter:** Yeah sure. So my area of research effectively is looking at interactions between life science, students, and their curriculum, and how the, both the interaction directly with the curriculum, and with individuals or actors, effectively influences their career intentions and professional identity. And in terms of the research methods, I'm using um, so initial demographic, demographic surveys to collect foundations of the individuals invited, then interviews - followed by one-to-one and group interview sessions, then looking at the split with different cohorts based on area of study. So that is the variable, the variation that effectively separates the groups off. Other than that, there's no exclusion criteria for the students.

**Peter:** And outside of that, there's also, during the interview the results are written artefacts or drawings, which is also produced to evidence their visualisation of their career.

**Peter:** Ah sure. So in terms of the analysis side, I'm using Otter AI to transcribe, which is an AI transcription tool that effectively does limited thematic analysis. Then, followed by that, I use a programme called Tableau which is about - T-a-b-l-e-a--u which then effectively creates a rough visualisation, which, then is the output from that is [undecipherable] which is just Python code.

**Peter:** So for me personally, it's very, it's more, I don't think, off the top of my head now that, so, in terms of the analytical framework, it's, in terms of the research rationality - and is that more to the underpinning theories, the prompted, the analysis per se, it really starts around the roadmap - which is very much based on Quinlan and Renningar [2022] approach of how to analyse visual drawings and visual imagery in terms of data analysis. That is, that particular element of my research is the only way - there's not a program to effectively analyse visualisation. So that's one bit that is effectively with that, using that, and then in terms of the thematic analysis that's being conducted, on more of the spoken word and so on, and just making sure I am at mid-data collection sort of stage, so I, there, [it’s] been a while since I've looked back at the actual data analysis. So, I just wanted, I just want to make sure I got it right there.

**Peter:** The right elements were there, and so, to give me one second.

**Peter:** They have, effect, so, effectively using more of a reflector - to reflective from ethic analysis. So then, effectively, what I'm doing is drawing from central things that merge from, through, the Tableau desktop. So that highlights the keywords from, which are effectively the overarching themes, then once the keywords are then grouped into those themes effectively. And then, looking at which areas refer to the career trajectory, as well as looking at their more positive or negative association of those languages. It's so, largely started, it's starting from an open and more of an open coded position. And then effectively, then it's been developed and built upon by, so, in terms of the more theory that underpins that it's worked by Kiger and Vapio [2022]. and it that lots effectively, the coding framework, that is being

**Peter:** Being built upon for the thematic analysis. So it's their work, largely. That is, on, depending on the coding framework.

**Peter:** Sure. So first of all, I would say the greatest challenge that I've had so far is participants - getting participants to actually take part! And I would also say, getting the range of participants to take part, because, so first of all, in terms of, again students sign up to, students, they effectively - the group [indecipherable] done and looking [but] effectively getting them to sign up, um, even with an incentive is a challenge. And as a result, therefore it then leads to only a certain spare subgroup within that particular cohort who's interested in taking part. And those are the, generally the students that will also sign up for other qualitative research. So, effectively, they are over-representing themselves in, it's part of their cohort, and that is a limiting element of the breadth of the qualitative study, because it's, um, effectively, the students are in the position where it's not necessarily, as representative representative of the, why, the cohorts they're in, because it's very much more of a active, an active subgroup. The other thing I would say, in terms of, so I've done quite a lot of quantitative research previously, and generally speaking the approach to being more subjective and looking for my own perception of what some of those barriers could be - in terms of in influencing the question design and the general structure of the design has been quite interesting. And very thought- provoking to have those discussions. And these discussions on, also summarising their transcripts just to get myself some notes, then prompting, the further understanding of the area I want to investigate.   
 However, I would say one of the things having done quantitative research before is The using basing, your the foundation of your work on other people's studies and not being able to find the role resources that they effectively have used is limiting because your interpreting what they're saying that results their methodology, their discussion, which might not necessarily be what they've actually used in terms of their direct questions, or the…and as a result, would bearing that in mind, that could be quite a limiting element [on] the research approach, or you could have understood that theory, understood what they were trying to get from it, but because you've taken a completely different methodological approach in terms of the questions you've used, even if you use the same format, you could potentially go in a completely different direction than what the theory is effectively trying to give you. That understanding of, and I do think that is a limiting thing, a limiting factor of qualitative. Whereas quantitative, finding the methodology to base your experimental design - often effectively for, use both stats programmes, or to understand what, where what direction they've particularly gone in, far easier to investigate, understand and, replicate.

**Peter:** I certainly would continue to work with it. It’s one of the areas that I've, I found the whole process very interesting. The recruitment element is the main stage that I think I want to try to investigate, just as a research - not as in a research topic - more as a skill, trying to understand how to get more participants. To generally take part in a study, because, but I do find, I find the method very interesting. I find the types of analysis very interesting, and the approach is not necessarily more thought-provoking, but because of it, because it's very subjective to you, it's, it feels more personable with your research. Whereas quantitative, you feel very much like you investigate your, and nobody branched to a tree so to speak. Whereas, where, where it's qualitative you feel like you're - it's your tree that is branching off in various different ways. And you can take that research therefore, wherever you want to take it, because it's very much, the onus is on you as a researcher. Whereas quantitative, you've hit it. You feel very much a part of the why, that's the why, the subject, or feel that you're working with. So I definitely like it. Do I think I'll implement more quantitative research into my studies? Yes, because I think as a base I think having more more quantitative research in the survey design, especially the base, some foundational information or particular elements in. I do think quantitative research, I would probably use more in future studies. Well, I think qualitative was definitely, be where I would still, so maybe say 70/30. There's a split rather than, currently it's more than 90 and 10.

**Peter:** Okay. So, I have not been able to do it so far, because I haven't had anything that's particularly been published to be able to say, my own research is out there and open to a general public, or to other researchers. So I haven't personally been able to get that. I am aware of it, and I have seen it. And I've also used part of it. And I do find open research more accessible as a result, and therefore, more inclusive, and also because it's more accessible, I find that and I've spoken to colleagues, who are therefore more likely to use open research, because you've got, you get more of that. You get more of the, like, another visualisation. You get more of the pie with open research, whereas, you feel with more traditional research, there is elements that you can't necessarily access, and therefore you're a bit limited. I would also say there's a few researchers that I met at conferences who do quite a bit of more open media rather than just journal articles, and via things like Substack, and so on, and newsletters, effectively. And I do find that method of communicating your research to more of a layperson is quite an interesting way of putting it, especially in qualitative. But I will say, I haven’t also seen anything quantitative as well, but effectively making it more open, and I do find potentially that is more - general engagement in the research - because it's more open and that doesn't distract in my view, from the quality of the record, the research, because [it] still goes for a peer review. The newsletter effectively, just offshoots a more simplified version of the peer review paper.

**Peter:** Yeah, so it's more papers. If I'm completely frank, it's definitely more papers that are in open access. And so on generally speaking, I found it quite limiting and frustrating when going through library searches looking for what is, so first of all, it's normally what is online? What is, what type of article I'm looking for? Which is normally articles as an example, and when I didn't click open access, it used to be okay, that would be a very good methodology, or a couple of pages that were interesting, but I can't then expand on their methods. I can't investigate what [indecipherable] as a result. Now, when I do a library library search, I don't, yeah, I click open access from the start, and as a result, I only - therefore the foundation on my work only looks out more and open approach because it's the only way for understanding of, don't get me wrong, there are some elements where the library has access to more closed research, which is more conducted from our in-house. And because it's my research is focused on my institution, some of that is preferential, but as a result, that will be that closed research, but effectively, it will it's available within the institution. So it's open within the institution, book-closed external.

**Peter:** And so, and so because it's more, so effectively, the school is looking, so it has smaller student projects which are effectively then, [they] stay on the internal servers because they don't go for publishing necessarily. And they haven't gone for a peer review process. They've gone through an ethics review process and, but not be really, and so on, but they don't go for the peer review - and as a result they don't get published. So it's not necessarily that they would not be openly available. It's more they haven't been publicly advertised to the degree that they're open, but my research which will draw from said data, would then be open because when the PhD is published, and potentially then peer reviewed, then broken into journals and articles, the data sets that will be drawn from will effectively be incorporated into that publication and be open, but it's just at the moment because of how the system our system works, some of the data sets are just happened to be limited…

**Peter:** …limited because they just haven't been put on an open, a completely open access server.

**Peter:** For me, I only think, I personally love the view that, I think, it makes it better for the field as a whole, because if more people can access and read effectively, then collaborate on various projects, or [get] greater support [in] the[ir] field of study, and then you're going to get further. Further achievement, further drives, further than their steps taken in a particular direction, which it can only be better for your research, and feed the study. The only ones who I would say from a stakeholder point of view who lose out will be the journals who are more the gatekeepers of the research, more traditionally, and it will be the lack of cost to them. But I can't see, personally, how from a university's perspectivem or from the individual perspective, most researchers who I would, who I've spoken to - although they want to get into the more exclusive journals, because they want the, um, recognition of those journals. If you ask them what they want [in] their journals, that they're general articles to be read by as many people as possible, they would say “yes” of course. But it's the difference over, the only thing that I can see from benefit, from the closed, close, more close research is purely there, it's an exclusive, more exclusive, and therefore more the perception, and more achievement of getting into certain journals and so on. But in terms of functionality, most researchers I've, certainly, say, could have, don't have - No they cannot, they can't. They don't rationalise and benefit from close researchers, or they wanted the X exclusivity being able to say they've been published in [indecipherable journal/platform name] as an example.

**Peter:** So first of all, the first barrier - going back slightly to my last point - which is the journals themselves. Because, and other public publishers. Because, whether you are trying to sell a book, whether they are trying to tell you someone else's journal article, um, the payroll is a barrier to making it open access, and it's a business model for publishers to effectively be able to retain control of that resource. and so, in terms of the institutional level barrier, the institution wants the prestige of you getting into these…[indecipherable]. These particular journals or publishers, they want you to sign these, to have peer review papers, they want you to sign the potential book deals, which builds prestige to the institution and therefore equally and being able to bring the university more more funding in that respect. But as a result, that in itself encourages researchers to focus on more exclusive journals and open access and so on, because once something it wants research open access, it will then, is not as encouraging potentially for a journal to pay to take that information on. Because if someone can get an exclusive journal on a free platform, then, or a platform which is more accessible, then that limits what the incentive is for the journal publishers. Other than that I think early stage research level, there will be some perception of anxiety. I know personally, the first time I will go to publish my own research, and going to conferences, generally you feel a bit of anxiety because you feel like it's very small fish in a big pond, but that is, that would be the only personable level - and so, and it's not because you, so long as you're happy with criticism and critique then it's absolutely fine, but there are will be some people who want the safety net of feeling like they are, and they're they aren't going to get critique on their work potentially. And as a result, having a more exclusive version, even if it's not a high publication, will give them an element of like a comfort blanket.

**Peter:** And it certainly, there, where possible, the certain elements that will have to be there for both the participant’s part of participation, well the participants who take part, making sure that after the check's [have] been done, to make sure that there's no risk to them. Then yeah, after it's gone through that process definitely, and the same with the core elements of their interview questions, and so on, and the responses to set interviews as well as potentially some of the notes. I've also taken outside of the transcript - the only bits that I would leave out all the elements…

**Peter:** …where the, which will form part of the research, but will not form, will not potentially go into any publication, because where the participant has explicitly said they were, they do not want a piece of information featured, but they have the client declarative part of the discussion, and therefore, there will be potentially research that touches on that area as a result, they won't be explicitly linked to because of their participants, which is

**Peter:** Sure. So an enabling factor would be if you, if there was more encouragement within institutions. So for me, personally, if I don't at this point in my PhD, I have - the encouragement has not been to go for publicly open publication. Yeah, I'm not at that particular stage, so I'm only being able to effectively use the second hand information. But from what I've heard, if an enabling factor will be to, if the encouragement was to show more sharing of your data - and more sharing of your resources - and you're incentivised for that, in terms of your, your professional progression, then that will be an enabling factor that you could be seen within the within the research community and within the institution. If however, it's perceived as your publications [get] grant funding, that more exclusive element. Is the incentive to get you on to a more long-term career path, that would, that's the antithesis - to enable - and that is one of the barriers in terms of working, when I've worked with subgroups. So it's like a society of experimental biology, and I work on all the elements with them. Generally they I would say the societies have been more encouraging of expectations. Admittedly they are, more, what generally quantitative based societies, but they have qualitative elements that [are] being encouraged. They are far more open to open access and open sharing for it's more of a simplified, I would say, part of recent research - where rather than a full length study, and it's more collaborative. Where the researchers…

**Peter:** Sure. So in terms of, in my ethics application, I included making their data sets open and so on. So it's been included, it's been included in that, it will be published that, their transcript may be published, and that the only thing that would not be published is any identifiable factors, and they will be pseudonymised. Outside of that, the participants are fully aware that when signing up, they have, it is going to be more and more open. Is that a potential reason why the students have? And been a barrier to getting students’ participation to sign up? That could be a potential factor, but equally, having not trialled it, and doing a more closed approach, I reckon that would be effective, I guess, in itself. It wouldn't be, wouldn't be coming from any form of foundation of knowing. It would just be a simple guess, but it could be a possibility for a barrier. The other thing I would say in terms of the ethics is, to my type of study there isn't anything particularly explicitly sensitive that is being discussed. And as a result, it's more, easier, for the ethics committees to grant that more open access. If I was doing a more psychology-based approach, and looking at more of a [indecipherable] and maybe a trauma or something like that, then I could understand potentially why. And that organisation will be a bit more reserved in giving the full data set access, even if the paper could be open access, I can understand the data set being more guarded. But for my particular study, that won't be the case. It's just from elements, I've seen [and] in conversations I've had with the ethics committees, and it's on that, that is some of the justifications that's used with the data with data sets.

**Peter:** Mmm. Yeah, I, so for me, I would say both, like, say the foundation and having to, having gone through protesters of where I'm now, used predominantly, over open access data to base a lot of the foundations of my theories. And I definitely think it will have had an influence, because if I've benefited from open open access resources, I don't I want to also enable other people to benefit from my in my data and my theories as effectively, as a open source, open source, open access, and I do think the other thing - and one thing that has been a bit more, reserved, especially when they mention it is, coded frameworks are not particularly…so it was, most papers - even the open access papers - will list the data sets. They may list the thematic analysis methods that they're using, but they will not necessarily include the code that they've used, and having worked with code on that point, I cannot, I can see that - that in itself - if you use a slightly, there, it's like [a] variation of that. For example, even if the code is highlighting positive negatives, slightly different, that in itself completely then skews how you use that. And I do think the very few papers that, well, I'm, if I'm on this, I haven't seen one yet where the coding framework has been included. Unless I haven't explicitly searched for coding frameworks in research, but I I haven't seen outside of the computing field. I'm not doing, what, explicitly qualitative and educational research, public coding framework as part of that, as part of their open access, and that's something that, if, once it gets to a point where I have the data, and I have the code, publishing the code would - I can't see why that would be a barrier. And even if that is a highlighting, a github repository for that information to go to, and that's because, rather than point, however, [at] many pages of lines of code in the, but I, I can certainly see the argument of making that more accessible, because I can certainly say for myself, finding a coding foundation space.

**Peter:** Based off, outside the books, where you have to take various pages. It's not, there's not enough in there.

**Peter:** Okay, so yeah. Outside of like, I say, I think the important thing from my perspective is the not necessarily the raw transcript. Yes, and encouraged in my learning - will be more to include the coding method that I am using - the open transcript, so they can see what the raw data input has been. And therefore, from that would be the foundation that I would, in terms of raw elements, in other than the, that would be the core data I would be putting into the open access, rather than the processed versions of it…

**Peter:** which would be in the paper itself. Those would be the two elements that I think will be the effectively needed elements of, the, to give researchers the open approach to it, because methods, everything like that should list everything else, but by pointing the code and the raw data in, they, any other researcher who's doing in a similar area of discussion should be able to based off that.

**Peter:** But I think with, if I just put the raw data in without the code, I think you effectively be, you'd have a lock without the key, or something similar to that.

**Peter:** Oh yeah. Effectively it's one of my greatest frustrations with the early research I've done, with all my PhD, was the limitation of it. A lot of it would state the methodological approach. A lot of it would include data outputs, but not data inputs. And as a result of that, if you, if you can't see potentially, the questions that have been asked in the interview, or you can't see the raw response to that, you don't know what you're seeing it after it's been analysed, and if you can't, it's raw for the analysis maybe therefore missed elements out that will be broadly beneficial to the field, even if it's not beneficial to the study, and to me, pointing the raw,…

**Peter:** …yes, I will certainly present the ideas that I think are useful in my paper. But I do think in terms of if someone really wanted to analyse my thought-process and my developmental process of my research, they need the raw input, and they need the coding framework to base [that] off. Otherwise, without those two, they're effectively seeing my interpretation of the data, not my data.

**Peter:** Hmm. Certainly, why, relevant I would, I will say in my field, there has been a lot of secondary data that would be, well, whilst interesting, would not be able to be used, because there's elements that make it, um, not applicable to the actual analysis side of it, but are interested into a foundational side - just purely because there is more research in my field being done in the states. And as a result, their approach to the education system is functionally different than the UK system, and as a result that's subjects, participants and their responses, other results will be different - because of their educational effect. Their educational direction is completely different than what the foundation has been in the UK Higher Education system. So there will be some, but it will be only if it's very explicitly on [the] UK. HEI systems, and outside of that, it'll be, I won't be using secondary data from further appeal, because just because it's highly subjected.

**Peter:** …not outside my supervisors, and there's not been particularly anything that's overly encouraged. And my supervisors, when they both instructed me through the ethics application, and [at] previous universities where they've encouraged how to search databases, and how to search for literature outside of that, I wouldn't say I've had any clear direction of how to make my actual research open access. I know how to search for it. I know how to find it, but I'm the other side of that - being shown how to make it open access. But I do think one of the things, having worked with - worked in the more teaching side of it - I do think and from BSc in MSc level, I think the approach to how patients and ethics forms are designed, and basically for the lack of a better term, it's a slap-dash process of trying to get them through to their dissertations, and get them onto data collection. It's not really explained till you get to a PhD level how to even make your data more open and accessible. Tell you that's about a PhD level, ethics applications, and even with that, it's still limited in terms of, you know, you're writing your ethics application can make it open, but you aren't being you aren't necessarily showing how to make your data open. So functionally, you've got something that can be open, but you’re never shown the direction of how to make that. And I can only assume that potentially, the closer I get to the end of my PhD, that those types of questions will be brought up from, certainly from the position, I know currently, I wouldn't say there, I could confidently say that I've gone for that process, or…that I can see that process happening.

**Peter:** For me, I would say first of all, as a guidance of how to make your data open access. How to present certain things in a research publication, more open access. So when quantitative research, you're showing how to make your methodology and your experimental design very open and very explicitly clear. Whereas in qualitative, and as I was saying about the coding framework being, is, there's no reference point to observe how coding frameworks have been put into other publications. I wouldn't know how to present that work in a way that is not going to therefore either distract from the paper’s likelihood of getting published, or presenting it in a way that users can effectively find that code on say Github, or so on. And because of that, if I'm honest, I imagine what will happen is although I'm certainly open to put in the code and framework out there, because that will probably be something that someone doesn't necessarily know how to do, or wouldn't know how to guide me, it will probably get left out - purely based on the fact that the guidance is not there. To make that data more accessible, someone will know, but the problem is that I wouldn't necessarily, say, be able to say, if the people - you don't necessarily know the person guiding the individual. My supervisors may well know, but I'd imagine there will be a variation in terms of, there will be some who don't know, and as a result of not knowing - rather than finding out there will be the argument of parking that idea. And they're not coming back to it because it's more complicated to find the answer than it is to actually. It'd be probably more complicated to find the answer than it would be actually doing it. But that's more optimal, I can say that it's certainly more from an observation or the feel of research field as a whole, not necessarily personal experience.

**Peter:** So at this point, I would say the plan is personal. It's been, I would, say more raw planning in terms of experimental design of the survey and interview questions. And then it has been - create a general code to do a basic search from an initial quantitative study - to see if the basic code can interpret the raw. Some very raw or basic qualitative answers and format, that in a way, there is drawing out the elements that I'm interested in. And then it's a review of that code, and the review of the questions designed before it goes on [to] the second stage of actual, the actual main body of the data collection, which is where I'm at now.

**Peter:** once the main body of the data collection is done, then it will be, um, coded iteratively to effectively review that - thematic analysis - and making sure the coding framework is more explicit. And once that's done, then it will go through, there are other programme tools which will effectively… One is more, because while being more confident with the thematic analysis, the other programme, it happens to visualize a lot better. So as a result, that will be the, just the format that I use for that, then it will be an initial presentation of results to [a] close group, followed by responses to their questions. Then encouraging me to go back and do an expanded from thematic analysis or, and following that, will be a more point, that into the review process and working towards the public publication process.

**Peter:** …and now it's, I know how to, it certainly, know how to interpret it, but I've never been directed to a particular method of using it. I haven't actually come across any particular secondary data that are using it. Isn't that I haven't produced from a previous study of my own design, but I [have] not been made aware of a workflow.

**Peter:** Yeah, but I think that's all of it. I would say, the only thing I would potentially add is that towards the last point, in terms of the guidance side, is just something more - as far as I'm aware, because I may want them in over, I'm in a smaller team within my organization, and as a result, it might - there may be more guidance available to the larger team to be fair. My team is the primary one that deals with qualitative research. so…