D: I uh, I think I made the slight mistake of getting the timings slightly wrong because there was a survey to do. And I thought the-

M: Like a follow-up survey?

D: There was a survey we were sent by the BBC-

M: Yeah.

D: And I thought it was going to be quite a long one- it was a very short one actually, it only took a few minutes. I think the only problem they had was that most of the class didn’t know what ethnic background meant.

M: Oh, that’s fair enough.

D: It was quite easy because they were all white-british, and they were like “oh what does this mean?” and I just told them to put white British. That’s what it is.

M: (laughs) Oh yeah, uhm, I don’t know how many people have done that survey, they sort of sent it out but it was very quietly, like “hey do this survey”.

D: So I thought it was going to be- I left it to the end because I thought it was going to be- I should have probably looked through it myself- that’s my own fault. I thought it was going to be a survey on how they found the lessons, what could be improved… but it was more like, what coding background have you done? Do you want to go into coding? How do you rate your coding ability? And that was it really.

M: That’s still okay. Like, as long as there’s stuff done.

D: Yeah, there was one child in particular, when we got to start, and I said “this is my last lesson”. One kid goes “Yay”, and I was like… okay.

M: (laughs) Like, yeah, *thanks*. I think I once had one kid, it was the end of the day and it was like a fun session, like “you can do whatever you want…”, and she was like “I want to just *die*” and all I could say was “Kid *no…!”.*

D: So like, we had time at the end, and I was like “yeah, you know, you’ve seen everything, done it all… so I’m here to the end of the lesson, do your own thing if you want to use the micro:bit to work out some things here, ask some questions.” And they all just went and played Flash games. I was like… okay.

M: It’s always the way, don’t worry. So, basically I wanted to chat to you guys about how the process went for you, what was good and what could have gone better- it was a pilot scheme, it was rough around the edges- what could we do to make it better? First thing on my list, is like, motivation. What was the big thing for you, like “yes, I want to do this!”?

D: I won’t lie, the money was a pretty big motivator-

M: Yeah, to be honest *I’m* jealous I don’t get the money!

D: Yeah, I was, uh, I was, it’s not really something I could complain about. But when I saw they put me down on the BBC payslip thing, and I realised I was going to have to pay income tax on it…

M: Oh yeah, I hadn’t thought about that. You get a taxable stipend from the army?

D: Yeah I already get an income, and that’s what I mean, I thought it was prize money. It’s probably about £180 by the time I receive it, after tax and national insurance. What a bugger, it’s only 7-8%.

M: Still, this is definitely something to feed back. Hadn’t thought about the tax thing at all…

D: 250 quid, it’s only 180… When the asked for national insurance numbers I knew it would be taxed.

M: I’ll look into that, I’m not sure of the details. I wasn’t expecting you to have to do that.

D: But… also, I actually really enjoy teaching. It’s an interesting experience, it’s helpful. When you do stuff, stuff you assume everyone knows, and then actually… no they don’t. It even helps me reflect on things that I do myself. Like “Don’t forget, the computer won’t do anything you won’t tell it to, you have to be really precise.” and well actually, I’m not always like that… sometimes when I’m coding I get strange errors, and it boils down to… and oh, I just didn’t tell the computer to stop doing this, I only told it to start and assumed when started doing something else it would stop… That’s not what happens. Uhm, yeah. That was the motivation. It was good, I’m happy I did it.

M: That’s great to hear! Another thing I’m interested in, is like, not only are you supporting schools with your technical knowledge but then you get the opportunity to try out skills that aren’t a part of your undergraduate curriculum – things like teaching and the kind of skills- so what would you feel, from the first lesson to your final lesson, what do you think the main skills are that you’ve picked up.

D: Uh, the main one for me has been just sort of… just, getting to grips with different classroom cultures, because there’s a mic here and drop, the kids don’t necessarily want to be there, they have to be there, so they speak to you in a different way, and not something I found… I won’t say struggle, but it was a bit of a shock first. Like “Can you do this” or “Can you listen in for a second” and sixty percent of the classroom ignore you.

M: Like *guys!*

D: They don’t really understand- I had one child in the first lesson, it kind of threw me, he picked up the box lid and started wafting and I told him to stop. He just ignored me so I said it again, so I asked if he was deaf? He just said “uh, I’m not deaf”, he clearly heard me but he was wafting it around, like what are you doing you mad man.

M: Sounds about right, sometimes they can be a terror (laughs)

D: The teacher actually had some comments about- the teacher said they were very surprised about the criteria the BBC set for the class.

M: Hmm?

D: Apparently the criteria was that the class had to have children with education difficulties or something-

M: No- so it was pupil premium students. It wasn’t actually even the BBC that set that criteria, we wanted a middle class set with approximately *this* amount of pupil premium students. Because if you got to a top set, and you’re delivering to a top set, “Hey good students, let’s make you even better.” In the end what you’re doing is widening that gap. Whereas if you go for middle sets - if you went for lower sets, then it might be too difficult for students work with. We figured the middle would be a good spot to go for – was it too difficult or-?

D: Uhm, it wasn’t the grasp or understanding, it was the motivation. There was some who didn’t want to be there at all. One of the lessons, the middle lesson was good because there was three teachers in there with me. Apparently, normally that class has teaching assistants in there for certain pupils, but we didn’t have those for two of the lessons. There was a couple of children, who were- although I guess this is usually the case- but were rather annoyingly sort of go “what are you doing”, give them a bit of a prod and talk them through it. I’d go away, and do a lap and come back, and they wouldn’t have tried. I’d gone, they turn to their mate and have a conversation, I’d come back and stop the conversation and push them back onto the work-

M: Yeah.

D; -but yeah, That’s worse, that’s the main thing for me, that I didn’t want to deliver three lessons and do “here’s code” and they had to copy it. But in the end that’s almost what I had to do-

M: To be honest, that’s okay. Like, those are issues which you’ll talk to any teacher about having students who’ll not want to do it, how do you get them to do it. And this was kinda like an opportunity, for you to try stuff out, and for the school to try stuff out, and just to see what happens. Other students are saying about they didn’t complete their lessons, and that’s fine-

D: We managed to get through all our lessons, but not everybody managed to get everything working-

M: That;s fine-

D: I’ll tell you, it was quite clearly, you tell them what to do, talk them through the principles, they’d copy it out, they’d hit an error- They wouldn’t-mthey didn’t know what to do-

M: Yeah-

D: The vast majority of errors, which I fixed for them, were just misspellings in variable names-

M: I did a course yesterday evening, from undergraduate to final year PhD students, and we had the exactly the same issue. It was just, a mindset you get from computer science, where you think “oh there’s an error, how do I work around it?” whereas if youg et an error and you’ve got no idea where it’s coming from, what it’s doing, or what it means, then you just go “…I can’t do it.”

D: Threw me, because sometimes the fixes were really- it wasn’t that there was something wrong with the logic, or something underlying, it was just… you’ve just missed a bit. Because I use the block editor, I’m a big fan of the block editor-

M: I love the block editor.

D: I was talking to StudentM, about the touch developer, and I had a look at that, and I was like, what is this? Admittedly, I was on my phone, which probably doesn’t help either, but I was still like “What is going on here, this is mental.” I’m a big fan of the touch- block editor, I like that.

M: Yup

D: Certainly for getting the principles- I said to them, let’s get the principles, even if you type out the code, you need the principles, I mean-

M: Yeah… Awesome-

D: Also something the teacher also said, one thing that would be helpful, which we could certainly do, is to create a workbook and give them out on the first lesson, and work through the workbook so there’s samples to refer back to. She said it would be something- we could have samples to refer back to previous lessons, uhm, lays it out with an explanation, and I’m just sort of teaching what’s in the workbook.

M: Yeah… yeah that would be a really cool way to do it. Cause I think, I would be interested to know what you think, with the beginning with the proposal, knowing how much a Year 8 class can do- can get through-

D: Yes, the lessons that we had, that were delivered to us were really useful, but it was a bit… I think it would be more useful to know- to talk to a teacher and be told- because I didn’t really get much of a chance. My main concern was going into the first lesson, and saying “this is the block editor” and, I know talking to the teacher who came in, that primary school students do stuff on a block editor, a different one, so I was quite worried that I would go in and they would say “oh I know that, it’s fine.” And that-

M: Like knowing the level they’re at…

D: And they, they do python and I’ve never done python, and I thought “This was going to be awkward, I’m teaching you things you already know and I don’t have the background knowledge myself…” I can talk about java, I have- As it turns out, they’d never used the block editor so it was fine-

M: Yeah it can be so different from school to school, it’s crazy… So if there was a way, we could get around that what would you think would be the best way to get undergrad students to get to know the school level, to know what a class was working at, what level-

D: I think it would be good to be able to sit and observe a lesson beforehand, so certainly in the class, by the third one, I got to know- I’m terrible with names, I can’t remember their names- but I remember certain personalities, certain pupils who had to be watched… uhm, there were two groups of girls on opposite sides who you could pretty much leave… I mean, you know, they were fine. There were a few pupils scattered around who would get on with everything, uh, and then there was a bloke here and two guys here, and if you weren’t literally standing over them-

M: Yeah

D: Even then-

M: Just always…

D: Literally if you weren’t standing over them, they’d just chin you off to your face, and I was bit like “what’s going on here.” Like… I actually said, “What you up to” to one of them, and just ignored me and carried on talking, I was sitting right there next to him. I was just like “…really?”

M: Sounds like an interesting class-

D: It was actually, yeah. Another thing as well, was that… I think would help with the workbook, not so much with the first lesson, there were a number of students who were in the second lesson who weren’t there in the first one, because they were off sick or for whatever reasons. So, that was fine because the first lesson was more of an introduction, so I just sat down and whizzed through it with them, and I felt that was something- when you’re trying to progress and there’s two people who are sat there thinking “ what is this man on about? I’ve never heard of this.”

M: I can understand that.

D: But you can’t really pause a lesson because one person is behind…

M: That’s fair, it’s one of the things we’re thinking, like one of the things for the lessons, even getting to know the class and preparing materials and stuff, uhm-

D: Even the background IT knowledge, like keyboard shortcuts, most of them hadn’t even heard of that- those, uhm… yeah

M: I think-

D: -or downloading it, cause there were one or two students who at some point had managed to change their download settings, so… what it was is they clicked download, and the little box down at the bottom, you know the one that pops up…

M: hmm?

D: so I had to show them how to go into Firefox, no, not Firefox, it is quite easy, it’s just Chrome and the downloads thing but they didn’t know to look there, they wouldn’t have thought of that, so they just… “what’s going on?”

M: Oh that’s interesting… Thinking back to that time for preparation, that reason was that’s how it fell, if we’d have pushed in back it would have been over exams and deadlines-

D: I think I’ve got six deadlines this week

M: Niiice.

D: Three down, three to go-

M: What have you got left?

D: I need to submit a 16 bit corrector, which has been built… whether it works or not, I don’t know. It changes bits, but if they’re the right bits I don’t know. Don’t really want to test it right now, I’ll test it tomorrow-

M: Is that for Tully’s?

D: Yes, uhm, I need to get it right because I didn’t do that well in the first few pieces of coursework but I’m bring that back. 38% at the moment, with two more bits to submit.

M: You’ll be fine!

D: Uhm, got a website to build-

M: Still flags or have they changed it?

D: Flags?

M: It used to be a coursework about making a website about flags-

D: No it’s a website about website design.

M: Yup, that was it, that was the second one! It was a website about the course-

D: Oh the first one was about, the first one was- I only got 50% for that one-

M: I got really bad marks that one.

D: Don’t know what’s happened this second term, the first terms I got 70, 70, 70 across the board, all 70s and 80s. And this term, the first pieces of coursework I submitted were not great. The rest… the software professional and java are still looking good, but I kind of need to pull website design back or I’ll be facing an uncomfortable summer.. like… revising for exams.

M: Oh you’ll be fine.

D: Should be alright, but I mean I’ve got to design- make a portfolio. Uhm, so to do software engineering professional?

M: It’s changed a lot since I did it.

D: oh right, like how to be a functioning person.

M: I remember that-

D: We had to a video

M: I remember it being so pointless, but it could be so good right? All that time there set aside for something, right?

D: I think it would be better with smaller classes. There was one lesson, like, most people don’t go to the lectures, I’ll be honest, I don’t go to many of the lectures… like, we had one lecture on how to give a presentation… like, I think I’ll manage, I’ve given upteen presentations. But… there’s some that like… there was one on ethics which I, I kind of… that’s the point of all of this? I like to hear about other people’s opinion, rather than being taught about it, because I have my own opinions on ethics which are pretty deep rooted now. Uhm, or there was one where they were just talking about morals in computer science. It was a genuinely interesting subject, like, to..to- one of questions was like “oh, is it morally corrupt for a government to use surveillance.” And I was like “that’s such an interesting discussion to have.” But in a lecture theatre of 100-120 from a class of 300, it’s just too many, you can’t have that-

M: Yeah, I was thinking- I did that micro:bit thing, the- the- design lessons in one of the practicals. This stuff is here, this is what you can do. I can’t give however many people turn up a micro:bit, I don’t have that may, you can just use the simulator but it can be a bit shit.

D: We did get set like- we did get set the idea of it- we did get set the idea of it, but then the piece of coursework but it wasn’t marked which didn’t help.

M: Do you know who set that?

D: Was it you?

M: It was me!

D: I didn’t do that, I’ll be honest.

M: No that’s fine-

D: It was “come up with a presentation, describing what techniques you’ve researched about giving lessons” and the micro:bit was secondary

M: The point behind that, the thing I’m really interested in, is that a lot of computer scientists can’t really talk to people. Let’s be honest. There’s a lot of smart going on, and not a lot of communication of that smart. So how can you help people explain things in a way that other people can understand. Teaching is a really cool way to do that.

D: Right

M: You’re trying to break stuff down and teach it to people who really have no clue, or some clue at that point. The whole thing is, that it would be really cool if we could do something like that, going into schools, as part of 1023.

D: I thought it was good.

M: but obviously you can’t take 120-300 students into a school, like “enjoy!”. It would be cool to do something in tutor groups, or have students do a bit of a research project.

D: Even with the class I had, if my tutor group did it, there would be 10 of us, and the issues you’d have- you could almost do 1-on-1 tuition people. Or, certainly with small groups and really, really dig into the bones of it and get exciting stuff happening, cause- I really like the micro:bit actually, the more I play with it, the more I think it’s really cool. It’s like, loads of stuff you can do-

M: They are really cool.

D: My lock and key thing is just scratching the surface. All the kids like the idea of sounds, oh, can we put out headphones in?

M: All the kids love sound

D: They’re like magpies

M: Hmmm, I was just teaching a lessons and they were like “can we do sound now?”, “Well we don’t have anything this week… but next week…”, “ohhhh”.

D: That sounds like… I dunno

M: I don’t mind them if they have headphones on, but I once did a lesson where it was all speakers and by the end I was deaf.

D: I was at my parents house at the weekend and there are some robins nesting in the garden next to my window, and I figured out what time they wake up. 5:30 in the morning. That’s when I got up, I can imagine it being something like that..

M: Oh dear, now going back to this last little bit, like redesigning the thing, just skipping over my dreams of what 1023 could be, although it won’t exist soon because they’re planning to change the curriculum. Think it starts from first year in 2021. They’re doing it a lot more project based-

D: I know Chem Eng does that. I have a lot of friend who do that. Pros and cons.

M: I think it’ll be interesting.

D: Depends if it’s group projects. Chem Eng is group projects. Your whole degree depends on your team.

M: I don’t think it’ll be all groups, I think it’ll be research projects and a couple of group projects.

D: That’ll be quite cool. We have a couple of big projects in java, that’s I’ve enjoyed. I’ve got a few on my laptop at home, just little projects, but they’re quite good fun.

M: It’ll be interesting… so, how do you think we could set up this project with timelines? Cause as I said, it was all quite squished, didn’t want to push it back anymore. Uhm, so there’s kind of two sections to this right? There’s preparation and delivery-

D: Hmm

M: I’m trying to think of where this would fit in the academic year. If you could, kind of plan to do this at any point, what- where would you put it?

D: Uhm. I think this is really the only time. Wouldn’t want to do it in first term so much, because the- the start of first term, everybody’s going out and all that. And then, I mean you could certainly do all the planning and all that- November would be good for planning, problem with that you’d have… when you get to December, you’d switch onto revising for exams for January, and you’d also get silly season. January revising, exams, and when you return to it in February that’s a long time. Like I think that I would return to my planning in February and I wouldn’t remember what I would have planned.

M: Hmm.

D: And then I would have to spend time trying to remind myself of my ideas. Uhm, yeah you, I think… yeah. Maybe if they could swuish the timeline for planning up, or even have it so you sort of plan one lesson and have an overall idea, plan for one lesson, deliver that one lesson and then adjust, because there’s elements of that anyway. Because right, this is… maybe… I think I got the pace about right but I think also, we asked at the end, and probably about maybe 5% found the second lesson a bit too hard, and the last lesson about 10% a bit too hard. Uhm, which was okay- it’s not loads-

M: Yeah. I mean, that’s pretty good to be honest.

D: But, uhm, there was a degree of adjustment where you would say stuff and people weren’t getting the concepts, and saying “okay, well I just have to-“

M: Yeah, yeah, have to really- really explain it, yeah.

D: I think doing a project would be good though, rather than… lessons… you start at the beginning of the year “This is the project plan. Here’s my ideas” and you talk about that. From that, then you- you understand “here’s where the gaps in knowledge are.” Do the lessons to teach those- work with- through those with them. And then the teachers could go “well you’re in not in that week, so I can cover that subject matter.” I think a project would be good.

M: Awesome, that would be good, yeah.

D: Yeah, that’s what they enjoyed most. But actually seeing something happen, because there’s the simulator- I said to them, you know, before you download your code, give it a go on the simulator. See if it work, and most of the time they didn’t. They’d rather see lights on the microbit itself. The bit they most enjoyed was in the first lesson, when they sort of, they could display something and get to grips with micro:bits…we’re just gonna.. not really talking about concepts of coding, this is how to use a microbit. They all seemed happy with love hearts and Abby is my best friend-

M: yup, there’s always those… and also I love Fortnite. Did anybody bring that up in the lessons, even if it’s not relevant… like yes, I’m aware!

D: My brother, he’s nine. He loves it.