**Interview Transcription: EFY Module Instructors**

**ID\_MI03\_M\_WS**

I Would you like to introduce yourself?

MI03 Well, I’ve been involved in the foundation year since it was started, and it’s a 20 years ago

I wow!

MI03 it used to be taught at the Southampton technical college, City College that’s where I worked

I okay

MI03 and then when I retired, I used to do John Mill’s job, you know that Course Coordinator

I okay

MI03 when I retired, Anna asked me if I could come back and do support sessions

I uhm

MI03 and I’ve been doing that since 2006. So, that’s my background in it. So, I say I’ve been involved in it for a long time, but now it part time and I’m quite enjoy doing that

I so, what is different so far? The students, the course, do you find anything changed?

MI03 initially there’re only 16 students and most of them were matured students and students from the UK

I umm

MI03 so, the numbers have grown, the students population tends to get younger overall and of course lot more international students than they used to be. So, it is a different job now because initially most of the students had some industrial experience. They hadn’t got formal qualifications, they just want to get a degree and so, they got a lot of practical knowledge, where else, and they were more of a homogeneous group. But, now it’s very varied people with different languages, different background and I say lot of them are lot younger. So, their practical knowledge of Electrics or Physics is not as good as it was, but that just because of their age really

I so, initially it was more of an extended programme, is it?

MI03 yes. It was small intended for students who would perhaps may have done the wrong A- Levels or got industrial experience and few formal qualifications but they want to get on to do a degree. So, did have a number of service men as well, people from the arm forces that got navy or army or air force qualifications and they wanted to up-date. But, it’s nice to have the variety and the younger people got a lot of enthusiasm as well, so very pleasant

I so what modules are you teaching in the foundation year?

MI03 the Electric and Electronics and the Engineering Principles, and that’s the two that I do

I so, not Maths?

MI03 no, Maria does that and David Britain does the Mechanics. I also do some works for the Malaysian campus programme with Pat Mayer. Pat retired from here some years ago. I’ve done some works with her for the Malaysian foundation year

I what, the existing one now? They just started isn’t it?

MI03 yeah

I so, you’re the pioneer of…

MI03 well, they wanted a half a semester for, to get them up to speed, so like the a semester zero and so, I did the Maths, Electronics, Mechanics and Physics units for that

I so, you sort of design the curriculum?

MI03 yes, based on what they would be doing when they start their foundation year proper. Some students would be coming in that were a bit younger and perhaps not with lots of high qualifications and it was to get them use to a different style of learning

I right, so this is the specifications at the moment?

MI03 yes

I so, how frequently the university change the specifications?

MI03 not that often. The Engineering Principles content is been reduced for this year

I okay

MI03 originally the Engineering Principles was a half unit, so it got added to year on year to make it into full unit and really it got over crowded, and so last year they decided to simplify it a little bit. The Electrics unit John has added things over the last 4 or 5 years. I think it reflects his interest as well, so

I right. Now, you’ve lots of experience and has been teaching for the past twenty years, so, from your observations because students come with different profiles every year what type of students struggle with critical skills?

MI03 Some of the UK students come from the BTEC background they lack mathematical skills and they do lack little bit of critical thinking they just used to accepting what they are told. Similarly, students from probably, perhaps Chinese background tend not to question but are very good mathematically and you got students where English is not their first language so you have to think of different ways of explaining the same thing, really

I so, coming back to students from BTEC, what’s their requirement to enrol in BTEC?

MI03 the requirement for BTEC I think the GCSE is at grade Cs

I Okay

MI03 but the BTEC units is so much narrower. So, for example they did Electrical BTEC they would not do any Mechanics or Physics

I so, they specialise?

MI03 they specialise, it’s much narrower curriculum, so when they come here they got to broaden their knowledge base which is some find it difficult

I so, you mentioned about the overseas students for example Chinese students they don’t question but they’re good at Maths is it only them, or is there any other students from other parts of the world as well?

MI03 I think predominantly I think students from Asian background

I what do you think might be the contributing factors?

MI03 contributing factors, perhaps teachers are more status there and so they’re not, they don’t question their professors I suppose, or teachers. In here, they call you by first name, so it’s more informal relationship and you know, they probably not use to that but in general they’re very good students. I mean BTEC students on the other hand, think, ‘well, I’ve done this’, you know, ‘I’ve done this on my BTEC, so I know it’, but they haven’t covered it to the depth we do it here. So tend to be over confident, and, you get, we had quite a few eastern European students and they tend to be very conscientious, and their language skills are generally very good and I suppose their education system is more align with the UK

I or, maybe they’ve been studying in international schools?

MI03 yes, they could be, yeah. Of course, there’re more female students on the course now than it used to be

I what the EU students or in general?

MI03 in the foundation year, yes

I what do you think attracted them?

MI03 what attracted them to engineering? I hope it’s the challenge of engineering. The other advantage of the foundation year is they cannot, they may come along thinking I want to do Aeronautics or Ship Science or Mechanical Engineering but during the foundation year where they touch on a lot of wide range and they get used to the university some of them will change their mind will change their mind I think. ‘I really like Electrics for example. I want to do that’, or I don’t like the Electrics I’ll do something else’. So, I think in that sense the foundation year gives them more opportunities.

I yeah

MI03 the students are here already, by the time they enter their first year they know the way around. They found the subjects they like and so hopefully even though it’s an extra year it’s not one that a wasted year I think there lots of positive

I so, coming back to the matured students do you think maturity is important to learn and apply critical thinking skills?

MI03 I think it’s useful. Life experiences are always useful aren’t they?

I yeah

MI03 but, some of them for example think that Routes to Success is not for them because they got life skills, ‘I don’t need to be helped with my revision or, you know, my learning, how to be critical of my learning’. They think they possess those skills already. But, I think the mature students have got, they tend to have responsibilities, and we had a number of students who’ve got you know single parents, they got a family and they got all those, all the consideration to take into account. They can’t just come here and study. They got home to run, children to look after and in some ways it is very difficult for them in that regard. They got the life experiences but they also got life responsibilities. So, some of them do well and some don’t in the mature students. I think the good ones, yes, they enjoy the challenges, but for some others the challenges outside are much more worse. But, I think they over all they probably prepared to be critical of their progress and their learning skills than some of the younger students, yes

I so, do you think age is important or it’s just matter of experience?

MI03 I don’t think age is important, perhaps the level of maturity is important

I umm

MI03 and the two don’t often go together do they? So, I think is having that, is attitude to your learning that’s more important than your age

I right. So, about the class, how do you run the class, do you allocate time for questions and answer session, do you have in class practice?

MI03 well, I only do the support classes

I yeah

MI03 so, none of it is really a formal lecture. So, it is driven largely in fact entirely by what you want to do. So, I don’t do any of the practicals with them. They bring the problems that they got and I try to help with them

I so it depends entirely on the students’ needs?

MI03 yes it is

I so, now the question is about language and critical skills because my research is about the development of critical thinking skills of the foundation year students?

MI03 yes

I so, how important it is in learning and applying critical thinking skills?

MI03 well, I think in terms of language there’s the language of engineering and science which they got to master. They also got to master their communication skills with other people and so engineering is not just about the doing but it’s about transmitting that knowledge and information. Unless you can be critical about what you’re actually, the about the way you learn and the subject that you’re taken in the wider sense questioning results and questioning the ways you’re doing things then I don’t think in the end you’re not going to be good in communicating to other people. So, I think the critical skills part, an essential part of being an engineer because other people will ask you the questions. So, if you try to ask yourself the same question first (laughs), so hope fully you got the answers. So, I think it’s an essential part in the learning process and in the transmission of that learning into practical activities and into communicating with other people. Perhaps engineers are not often best at communicating or scientists

I just now you mentioned about transmitting to other people, whom do you refer to as other people? Is it a specific group or…

MI03 well, eventually of course if they work in industry they have to work for companies that have customers that, and a lot of engineering and sciences is into interdisciplinary now. So, this team work, so you got to able to communicate with people of other disciplines, people in the same team, customers, people perhaps are at higher level in the company that want to know what’s happening so, you got all those sort of levels of communication to take into account

I so, language is important in both practical and also in transmitting whatever they’ve acquired?

MI03 yes, and also in the written language as well. In written reports, this is one of the reasons why they do laboratory work and produce reports so they can present information in a written form to other people can take and understand (22:00.1), so the spoken and the written, yeah

I so, how much do they read? Do they really read in the foundation year? Or, is just based on lab work, and …

MI03 they’re given notes, but in theory they’re all ought to give them all the information that they need to pass the course. But, they’re also encouraged to use text books and the internet, you know to find out information that they need to find to enhance their learning

I so, this is more on their research skills, yes?

MI03 yes

I so, do they read research journals, published findings of any …

MI03 no, they used to do a poster

I umm

MI03 but, they’ve not done that for a few years that, and I thought that was quite a good thing. They would do a week, a practical week on (photonics? 23.26.0) and then, they will take one aspect of what they’ve done and produce a poster, and that was working as a team present information again and in visual form and in a poster, answering questions when they presented it and so on. So, that was in the course, unfortunately it’s dropped out, I think. Not sure why, I think the person that managed it left and …

I okay. So, this was a separate course by itself or was it incorporated …

MI03 it was incorporated into the foundation year. I mean the science foundation year students still do

I still do it?

MI03 still do it, yes

I so do you think, yeah, you mentioned it was quite useful for them?

MI03 yes, I think it was

I if it’s re-introduce do you think students will benefit?

MI03 oh yes, I think they would

I so basically, it’s a group work?

MI03 group work, yes. I mean they do, do group work in a, the computer ( \_ )

I computer application

MI03 applications, yes. It used to be a group work, just one week of preparation and a poster at the end of it. I’m not sure if Sue was involved in that

I this question will be about the way the course is run. As I mentioned earlier every year students come with a different profile, so knowing that is there any skills that you think students already have those skills therefore I’m gonna exclude that and then you think the students need this so I’m gonna include this. Have you done this in your sessions?

MI03 No, I don’t really. I think trying to learn the critical skills is part of this Routes to Success and perhaps John Mills would be the person to talk to about that because he does part of it. So, I mean the main lectures of course they go in as 120, people just lecture. The support sessions they come along with the problems and you need to treat them individually or as a small group, and the critical skills are all done in the Routes to Success and they’re meant to apply them in the other areas of the course. So, perhaps John will be able to help

I okay. So, when you run the support classes do you find students really outshine the others or really good in the skills and sometimes you find students who need help

MI03 yes, there are students who are really very good and yes, there are. The other end of the spectrum you got the students who aren’t, academically very weak and some them don’t come along, whether it’s a defence mechanism I don’t know. But, every year you get number of students, small number of students who are trying extremely hard and not making a lot of progress and they are the hardest students to deal with. Because, they are trying very hard and you know that unlikely that at the end of the year they would pass, some of them would surprise you but, or they need another year at it

I so how do you identify them? What are the criteria you used to identify whether they’ve acquired or they have not?

MI03 lot of what I do in the support is on one to one basis. So, you can, you can say by the approach answering the questions whether they’ve done any work beforehand. You can see where their weaknesses are in some cases maybe mathematical in other cases they may have more difficulty in understanding the wording of the questions. So you, because they limit them on their own you tend to pick up for individual students which way’s the best way approach and give them advice on, you know if try doing this, you know it’s a very mature sort of feel sort of things when you’re with them. But some habit and they just get stuck on little bit and you help them, it’s like, ‘oh! That’s it, yeah, I’m fine now’, and they’re on their way, but others it’s a very long process

I umm

MI03 trying to get them to, when they look into a problem to analyse the information that they got to relate that information to the theory that they’ve done and they got notes on, and if they don’t understand the theory, what is it about the theory that they don’t understand and try and get that in place. And, in lot of cases they do make it more complicated than it actually is, but ( \_ )

I they make more complicated because they lack the skills, would you say

MI03 yes, probably, yes

I or may be they didn’t have much exposure about this kind of learning?

MI03 yes. So, I like sometimes I get students to explain to me what they understand by a particular theory and you can sort of ( \_ ) see they haven’t actually picked up the bit at the very beginning that is crucial, and they’ve gone on further down the page and so, often is that basic, is that picture in the mind of what’s happening that they haven’t gotten

I so, how about attention to details, identifying details? Do you think attention to details is important at foundation level?

MI03 I think at the end of it the details are important in the beginning I think having that general picture in your mind of, ‘ what’s happening here, what, can you visualise it? Can you, could you explain it in sentence or two?’ Later on as you dealt more and more into a particular subject and of course the details are important, and so, I think you need to, this is where the critical things come in. You try to identify the accuracies that you got. What assumptions that I’ve made that might not really be quite true, but that come with a more detail approach to a particular problem. I think they get in the later years as they progress through their degree

I do you think because it’s important once they moved on and they’re gonna deal with details anyways, so, do you think it’s important to stress the importance of attention to details at beginning rather than leave it till the end?

MI03 well, for example some details is it a detailed, probably units of what your answers in, you know, I got an answer of so many volts, so, or this is travelling so many metres per second rather than the number, now, that is a detail I think it’s important. Whether something that you’ve learnt is totally accurate is something else I think. Where else the accuracy the level of accuracy is comes in later on. You know, I’m not sure totally what you mean by details I suppose?

I yeah, because I’ve looked at some of the existing syllabus for engineering undergraduate programme and it is mentioned that attention to details as one of the basic skills students are expected to acquire by the end of the programme?

MI03 yes

I So, because it’s there, so I’m just wondering whether it will be important to stress the importance of attention to details at the beginning of their foundation year?

MI03 yes

I than ignore it and then when they moved on they realised they should have acquired it at the basic level, in their foundation year?

MI03 yes. I personally I would say try and develop an understanding, a general understanding of what’s happening in a particular area of physics, maths or so and so. Maths is a bit different isn’t it?

I umm

MI03 because, maths is about the details or else it doesn’t work, but I think you can approach overly here by the end of the year you can be insisting on more detail if you like than you would do in the beginning. But, I think that is a process that is a long term one, if you not careful you can hooked up on details, cant’ you?

I umm

MI03 and you got to, sometimes you have to move on without that complete knowledge, ‘this is how I understand it, I have accepted as it is I’ll move on’, and perhaps in maths they’ll do something that enables them to tease out the details earlier on. In electrical engineering there’re some problems that can only be solved by higher mathematics but it doesn’t stop you having a, getting a general feel of it without that. It’s just, is a bit of icing on the cake, you know

I umm

MI03 if you can add that little bit later on than that’s great. I mean I don’t know, I suppose you could take something like classical mechanics, ‘Newtonian’, theory and so on, forces and movements. Well, we know now that the, ‘atomic’, scale now it doesn’t work and with, ‘relativity’ is the same, but we can design space probes that can get to where they’re going based on, ‘Newton’ theory, we know aren’t complete, but under the circumstances they work. So, I wouldn’t want the foundation year to over burden students with detail, let them have an interest in knowledge, the broader knowledge of the topic area and bring in the detail later on, I think

I yeah, because some students even don’t like to read the instructions

MI03 no

I so, may be that comes under details as well because sometimes they missed out some key words, and they, because of that they couldn’t answer the question the way it’s required?

MI03 yes, that’s a man thing as well isn’t it (laughs) never look at the instructions (laughs)

I laughs

MI03 and I think that actually is a difference, female students tend to be, they will look at the detail, there’s a definite difference there

I gender difference

MI03 gender difference, yes

I interesting. So, this the last question, so having been involved in the programme for so long and with your experience for you what are critical skills, especially for engineering? What students should have acquired, ideally?

MI03 right. They should have acquired the certain level of understanding of engineering and physical principles and they should be able to re-applying those to solving problems. Also, they should be able to analyse the way that they approach this, and identify their strength and their weaknesses and try and overcome the weaknesses. So, I think you want the students to be thinking that they got this broad approach to the problems. How they tackle them but and also to go back and become constructive in the way that, be critically constructive in the way they approach it and see, ‘is there a way that I can do this better’, ‘I’m spending awful lot of time on this particular thing and I don’t think I’ve done that, I’ve not done it productively’. So, analysing their working methods and being able to apply sort of some positive remedies to it I think is important. So, you cannot do that without being critical of what you’re doing. I suppose, you know, you walk into a, every time you walk into a classroom, you walked out thinking, ‘umm could I’ve done that better, what was the problem there, was I not prepared enough?’, you know. Whatever reasons, you know, ‘should have gone to bed at 10 o’clock last night instead of, whatever’, (laughs), so, I think it’s a, is that, I think everybody is self-critical aren’t they?

I umm

MI03 you try to analyse what you’ve done and ( \_ )

I being reflective?

MI03 being reflective, yes

I just now you mentioned about going back to whatever they’ve done, is that suspending their judgements? That is they’ve done something, they realised something is…

MI03 yes

I is that what you’re trying to say or something else?

MI03 yes, well, I think, well any certain point in time you only got certain amount of knowledge haven’t you?

I umm

MI03 and hopefully as they go on their knowledge will increase. Sometimes you have to accept that this is it, you can’t do anymore of them. You only got certain amount of knowledge and you can’t dealt with it anymore without that extra in-put. So, sometimes you got to accept that this is the level that you’re at and you deal with it the level at that moment in time

I that means being aware of the limitations?

MI03 yes, being aware of the limitations

I of the resources or of oneself?

MI03 well, both really. Yes, I think, well on gender thing male students tend to be more confident, that they over estimate their ability, female students tend to, and this is generalisation, underestimate their ability, it’s bit of reading the instruction bit isn’t it. So, I do think you have to be aware of your own limitations and whether mathematically or whatever, you know, and some of them do that in a sense of perhaps with the maths. They may have come along and thought I want to do electronics but they realised well this is very mathematical subject, environmental engineering may be more in tune with their abilities, their natural abilities where they’re good at communicating and in language and so on, but not so good on the nitty gritty details of the thing. So, I think, at the end of the foundation year this is why some of them change subjects because they realised the limitations of their, not that they’ve actually reached it but they know their strengths and they know their weaknesses and they can change course to try and make the best of what they’re doing

I so, can I just repeat the last of what you mentioned just now? So, critical skills for you is students must have basic understanding of the content and use it to solve problems

MI03 yes

I to analyse

MI03 yes

I and, they must be aware of the approach they take to solve problems, and then

MI03 yes

I they must be aware of their limitations, their strengths and weaknesses

MI03 yeah

I be reflective as well

MI03 yes, I think so

I that’s all I think

MI03 alright

I thank you very much