**Interview 4**

**Interviewer:**

And we'll record this interview as well as I need to change the name here. As well as we need to mention that you have been interviewed and you, these are your opinions, and the shall agreed and agreed. Let's see what X says. But important is that since you are an author, of course you can say, Oh, this was the configuration. I, this is what I said, and this is the configuration I had about this framework validation. So what I took did here was to take the framework as it is and put the, some different dimensions, like here is the conceptual side, here's the practical side prospectus in teaching and design theories. I've been using for the course and design, practical design of the course and tools. And I have a set of questions for each, each of these parts.

**Interviewer:**

And one here you see with the question mark, because here I would like you to add or propose things that you feel are missing, whatever in this case, theory or tools or design or yeah, whatever teaching perspective and so on. So, just to get started, and this is the first example, like when it comes to skills if I say what student skills can lean startup experience based learning, innovation, bootcamp impact when working with software projects in some kind of course. So in this case, what this question is trying to say is we have this setting of skills like soft skills, technical skills, and project management skills, for instance. And you have three options here that are displayed in this case, experience based learning, innovation, boot camp, and growth based startup. So when it comes to soft skills, where do you see it fits, like in experience, experiential learning, innovation, boot camps, or growth based startups?

**Interviewee 1:**

Can I put it in both of the boxes? Yeah,

**Interviewer:**

Yeah. That's why I hear the example here is that you can put this like this, like this, like this. I didn't replicate all of them, but of course you understand. I can copy past

**Interviewee 1:**

And yeah. Okay. So yeah, so you ask me, I I put the sub skill in this. All, all of these boxes. Yeah.

**Interviewer:**

Yeah. Okay.

**Interviewee 1:**

Yeah. And I have to highlight it, it, it's extremely important in any project based context.

**Interviewer:**

Okay.

**Interviewee 1:**

At least from the the courses I teaching now is the first year for first year students, and they doing project based and they work some project with real customer and some project with their own ideas. It's kind of startup ideas. And it's very important that the student, they firstly get well with each others in team. So it's maybe in some other more mature setting. The student, they, they know how to work with each other, but I mean from my experience, the sub skills should, should be emphasized.

**Interviewer:**

How about the technical skills and project management? Where do you say?

**Interviewee 1:**

I think first and foremost it's the, the sub skills and the technical skills. Cause from my course, I, we don't teach the student new technology. So the student utilize what they learn. They learn about web developments, they learn about backend programming. They learn about c sharp or patents. That's what they will apply in the projects. And if they don't know much, then they don't I mean they, they do what they know of course. So yeah, they, they also learn themself. But yeah, but, but I mean, like when they focus on the solution, that's their own way. I mean, more than one way to get to the solution that the customer want.

**Interviewer:**

So

**Interviewee 1:**

Yeah, at least for, for the student, I, I think the technical skill I input it in, let me see yeah. In all of these boxes.

**Interviewer:**

Yeah. So you perceive they are learning new technical skills

**Interviewee 1:**

Focus on startup formations. Maybe less appear in the innovation bootcamp. Cause I think there may, I don't think they learn much there. Yeah, that

**Interviewer:**

Is, Okay, good. When it comes to project management here, project management is like entering also project processes. Like if they do a job or if they do something like that to develop their project, do you feel they're learning about something about this software processes and project management in general? Yeah,

**Interviewee 1:**

Absolutely. It depends on, on, on how the student participate in the project, but if they, they participate in the proper way that they, they like follow the instruction and they want to learn. So the project management is there. Yeah. In I guess the experience learning in startup practice and probably in innovation bootcamp as well. So just to clarify that the boot camp, that would happen in a short time, right?

**Interviewer:**

Yeah. Yeah. Usually at the beginning of the course or something like that.

**Interviewee 1:**

Okay. And it's like three, four intensive day or,

**Interviewer:**

Yeah. But this doesn't stop students to continue collaboration. I mean, if they are developing a project with somebody

**Interviewee 1:**

And it also takeover. Yeah. It's also very like learning by doing, right? They, they, they were about something very practical. Yeah. So PM is here. I mean, in the way they do things, they learn, but I say it, it less on there, but yeah. I didn't want to keep the PM there. Yeah, just keep, ok. Yeah.

**Interviewer:**

When it comes to the project setting, like which of these three-experience based learning, lean startup innovation can offer more project setting for a software engineering course or more?

**Interviewee 1:**

Yeah. Okay.

**Interviewer:**

Hold them or whatever you choose. Okay.

**Interviewee 1:**

I guess maybe yeah, innovation boot camp seems to be from what I understand, it might give a better, more realistic setting.

**Interviewer:**

Yes

**Interviewee 1:**

And not lean set practice that maybe the second thing is the, to me is the experiment based learning. Cause they Okay. They, they come to, I mean, yeah, the multidisciplinary setting that's only new things to students. It might not coming from the customers, but it might come from the problem they're dealing with. I mean, it's a monthly aspect, so the student always need to look into something new that they beyond yeah. Knowledge area. Of course, I think if we can put in all of this maybe lean startup. Yeah. Well, when we teaching startup, it should also Yeah. Be practice as practical as possible if you want to, to make it in the order. So, so yeah.

**Interviewer:**

No, no. I already arrange after the interview, because this is relatively small, I will expand the, the different sizes here. Okay. And I'll reiterate everything, so don't worry. I have to clean the data. Yeah. When it comes to how can innovation boot camp improve software engineer students innovation mindset, For instance, when I say here, it's innovation bootcamp, but you can pick either the others like experience based or growth based startups. How do this impact the innovation mindset of the students? So it doesn't have to be only the innovation boot camp

**Interviewee 1:**

How, Right?

**Interviewer:**

Yeah.

**Interviewee 1:**

So I think it's quite straightforward when, when the student go to an innovation boot camp and they, they want to yeah. See new things. They, they want to be innovative and they want to, Yeah. So the things that they, they prepare themselves to, to be participating in this kind of setting. What, what they should be expected, what they should expect, and what they, Yeah. So I think the proposal of the event itself is already motivated for preparing and promoting innovation mindsets. It should be there. I still see the mindset in all of these three yeah. Okay. Can be, Yeah. In part of this, because of the natural of the lean startups and also the, the natural of the disciplinary team.

**Interviewer:**

Yeah. That's nice. Just to clarify one minor thing here. There is a definition of this startup driven software engineering course that this framework revolves upon. I, I cut it brief, but it's experienced based learning, growth based with lean startup, hopefully. And innovation intersect here. That's why you see the three of them. So,

**Interviewee 1:**

So the lead startup practice here, is that kind of course or that kind of

**Interviewer:**

No, no. It's just lean startup

**Interviewee 1:**

Is a setting.

**Interviewer:**

Yeah. It's a setting. So lean startup and grow phase startup practices. Yeah. Go phase four. The reason that normally you have more practices at this phase of startups, rather that the early phases where, or startup date where there is lack of practices in general. So, ok. Or that's the, the understandable part. So that's why you have it here. So yeah, I, I understand you see lean startup, but just not to overlook the growth phase part.

**Interviewee 1:**

So I think you, you need to calibrate in the end. Cause I mean yes. This, this element is, doesn't appear equally. Some, I mean, very obvious, but some it's marginal. And maybe you can remove some of the, the elements. I mean, in the end, when, when we see,

**Interviewer:**

I mean, of course, when it comes to multidisciplinary teams what are the benefits what benefits do you see of teaching software engineering skills when designing the course with multidisciplinary and interdisciplinary teams? Apart from the benefits, where do you see this multidisciplinary? So does it end innovation bootcamp, the experience based learning, the growth phase startup practices, or Yeah,

**Interviewee 1:**

It should, it should be, Yeah. Of course, in innovation bootcamp, right? Yeah. The teams, I'm not very sure it can be observed all time in links startup practice. So main, I would not put it there, No.

**Interviewer:**

Okay.

**Interviewee 1:**

But yeah, but moon team in experiment based learning, right? That

**Interviewer:**

Yeah.

**Interviewee 1:**

Definitions. Yeah.

**Interviewer:**

Yeah, that's true. Quick observation here. When you see this multidisciplinary teams in because we are in software engineering politic, Yeah. Do you see any benefits of having multidisciplinary teams in the course? Like for instance, you say it fits in the innovation boot camp, it fits in the experience based learning. What are the benefits that you perceive?

**Interviewee 1:**

I, I think it is, it's very important well, cause I all of this, we aim to provide some solution for the existing needs and to achieve the solution nowadays. I mean it or software engineering is always and is more and more become a supporting aspect of the things. Yeah. The, we need to understand the, the, the knowledge domain. We need to understand the application area of the problem. So we might need to have an expertise in education in healthcare, in industry. I mean, whatever, where the problem look ats. So yeah, of course, this disciplinary teams, and even in software engineering, if you want to address like different knowledge areas. If someone wants to have security, for example, someone wants to have high quality, it should be a person with I mean, expertise on, on board.

**Interviewee 1:**

So I see nowadays this is is the very good to, it's the right direction to focus on that. Of course, it's, I mean, it depends what we, in to which level, the multidisciplinary within software engineering, it can also be like, I mean multi aspects of the, the engineering or the system level. It can be connect between software engineering and other engineering disciplines, or, I mean, in even more larger scope like engineering and healthcare engineering and I don't know marketing and yeah. So it should be, yeah.

**Interviewer:**

Yeah. I see. When it comes to funding opportunities what do you perceive, like if students have funding opportunities, how would this impact their ability to embark in any startup formation approach or something like that? So funding opportunities, it can also be considered, Does it enter like innovation boot camps?

**Interviewee 1:**

I don't think this funding won't be in the, but it's learning. Maybe not.

**Interviewer:**

No,

**Interviewee 1:**

I think it should. If it's should be, maybe it would be innovation would come.

**Interviewer:**

Yeah.

**Interviewee 1:**

Yeah. Is that because here it's about focus on the startup formation, So it yeah. In some way to mention here I don't think it should be in in startup context that we focus more on the methodologies and Yeah, Yeah. And

**Interviewer:**

Nice and external stakeholders. How would this impact the skills and resilience attributes? But in general, if students expose to are exposed to external industry governance stakeholders during the innovation bootcamp or during the course, how do you feel these external stakeholders will have an impact, but also how do they enter the different settings?

**Interviewee 1:**

I think that it, it should be either in innovation would come, but I don't think they will have a, a high impact there. Due to the short period of the, the event. I mean the, if you have the external people like mentor or I don't know sensors, they can even fit. But they don't have enough time to understand and, and maybe to give further impact, further influence into the boot camp things expert based learning, if we have like external stakeholder like customers or mental, like following from the beginning, what the, I mean prototype of the solution that, and then I think they have better chance to, to, to give impact here. And in a startup context yeah, if we say about customers I mean then second, it won't be integral part of the lean startup practice. Yeah, I'm, I'm, because I with the lean startup, maybe you focus on the internal ideas, right? But you need someone to value data. But I mean, many times you, you, I mean, take it from external customers, then the customers is very, very important here. So, yeah. So I can say it's very important to be in lean startup than in experience based learning and less in innovation would come.

**Interviewer:**

Yeah. Okay. When it comes to the last part of this here, if we ask students and stakeholders to address sustain development goals, how do you feel this will impact the relevance of the being and also the startup formation opportunities here?

**Interviewee 1:**

Yeah, so with the UN goal, yeah, probably very much in the would come and then in the square and base learning, I don't think that,

**Interviewer:**

So You did, Yeah. You think they're important?

**Interviewee 1:**

No, no, not, no. In the experiment-based learning.

**Interviewer:**

Yeah. Sorry.

**Interviewee 1:**

Yeah. I don't think that that wouldn't be much into the,

**Interviewer:**

No, my mistake. But just to this year, goals, the way you perceive, will this impact the students opportunities to create a startup or their learning or their project relevance cetera?

**Interviewee 1:**

Yeah, I think that it, it will, Yeah. Inspiring cause the UN goals give a lot of, I mean missions, so prep can be formed to address one of these missions. So yeah, absolutely.

**Interviewer:**

That's true. Now, let's continue with the theoretical side of the, of the framework, which is still connected to what we have discussed so far. When it comes to expanding the skills, you said something about this early on, you mentioned that students can learn new things, technical things, but they come with existing skills as well. Like they know Python, C Sharp and some technologies, but they improve themselves. So how do you perceive, can we expand the skills of the software engineering students when we combine the core group dynamics, the, this experiential learning with lean startup in the multidisciplinary software engineering course? So the idea here is are the, I know you told this, but can you elaborate a bit more like expansion on the skills on the students?

**Interviewee 1:**

Yeah. yeah. Cause the students when, when they come to the let's say the setting they engineering student, they, they supposed to, to have some, they know how to program and then they, they know how to implement the prototypes. But beyond that, they, they need to know how to listen to other people who have, who know, who have the understanding about the problem, who have the understanding about the, the issues and how important are these issues. So the engineering student, they tend to, to, to be too much into the technical details and, and losing, I mean, the, the, the, the seeing things from the different aspects. So they, they should learn to listen to other and collaborate with other people in achieve some, in many cases. It is not about having an advanced technology. It's not like finding the best algorithms that is to, to get the solution is yeah, they, they, they should learn to, to like how to onboard in this journey and, and work with other people.

**Interviewer:**

So, yeah. So would, would the expansion of skills occur if I say in this course setting? Like if I go with startup driven software engineer course?

**Interviewee 1:**

Yeah, yeah. No, I'm, Yeah.

**Interviewer:**

Does it enter this kind of course, the expansion of the skills?

**Interviewee 1:**

I, I'm confident that it should be, Yeah. As intended outcome of such a course.

**Interviewer:**

Okay. Next one. How can we, software startup formation motivations when we combine all these theories, like go startup, startup group dynamics, innovation.

**Interviewee 1:**

Yeah.

**Interviewer:**

Does this come up?

**Interviewee 1:**

Yeah. How we can impact to, to make this maybe cause now I'm thinking from the teacher's perspective, maybe we should have also a multidisciplinary team, teachers of lecturer.

**Interviewer:**

Okay.

**Interviewee 1:**

Cause if the, in this class it's only software engineering lecturer we cannot say so much about startup formation. That's not our expertise. But maybe people read the business or economic background they're on books and, and they, they can highlight the importance of, of the forming and, and I mean, developing the companies out of the ideas. Yeah. So, yeah, I think it should be there as a I would not say the word edit is instead of formations, but it, Yeah. How to say entrepreneur mindset or something like that, or, or mindset or something. Yeah. Cause when the start mindset, that mean they, they want to start something. They, they want to, Yeah. They, they want to be innovative and they want to Yeah. Have a scalable solution for things. And they mindful think about financial, they mindful, think about, I mean administrative aspect of startups.

**Interviewer:**

Yeah. So, yeah, I understand. But let's focus on the fact that this kind of course is startup driven software engineering course. It's not like they have to forget, even they, if the students are coming from different backgrounds, the should be the, they're focused or they're learning how to build,

**Interviewee 1:**

Then it should be there. Yeah. So it might be one lecture or one module on startup immersions and Yeah. With the, I mean, people with relevant background to teach this one. Yeah.

**Interviewer:**

And I took note of this startup mindset. I put it here because it might enter as a new one and entity here. So I would just be back as well here just to have it as a rapid, a fourth one. Okay, so the last one here in this section is the learning outcomes. But this is more broad thing. Like if we introduce this innovation bootcamp and if we have the growth based startup practices, how do you feel that they will impact the learning outcomes in general? So you, you don't have to say specifically, but some of the learning outcomes will be changed or improved or whatever.

**Interviewee 1:**

Yeah, I, I think it, it can like yeah, of course, course, it's when extend the, the, the current set of learning outcome in like project by cost, like customer driven, for example. It, it surely when we extend it and yeah I mean, we, we need a bit more context to say concretely how, how extent, but yeah. I'm positive that we're yeah, extend things.

**Interviewer:**

Yeah. The, the shifting of the learning outcomes should be, at least should be part of the course, I'd say.

**Interviewee 1:**

Yeah. Extending not, not shifting. Yeah,

**Interviewer:**

Yeah, yeah. Extending the learning outcomes. Yeah. Okay. So here for the practical side, because this is all theory, what we perceive, this is good to happen, but the practical side, it's more about interactions and tools. So here, basically we have different kind of interactions that I have identified. You might have other ones that you have in mind and you can propose, but when it comes to the interaction practices is like, which of these three, like, experience based learning, lean, startup, innovation becomes affect learner, learner interaction. And then it goes the same question. Learner, learner, learner, content learning, external stakeholder, learner, instructor. So let's take the first one. Which of these three do you feel it's impacting the learner student, student interaction, right?

**Interviewee 1:**

That's, So you only choose one of these, or

**Interviewer:**

No, you can choose all the four of them, but let's take it them one by one, I mean, learn learner. Where do you feel it's being impacted from which kind of setting, like from the experience-based learning, from innovation, from growth based startup practices?

**Interviewee 1:**

This Question, I could say from all, Yeah. All of these settings, but can focus on maybe the experience-based learning would be the most I Why you see it the most? Yeah. And the other two maybe. Yeah, I'm not very confident. Yeah. I mean, of course in, in any, I mean, modern better up weakness set up is that learning, you're not learning from the teacher, but mainly you learn from per,

**Interviewer:**

Yeah. Yeah. Even this is project based learning

**Interviewee 1:**

Or less.

**Interviewer:**

Yeah. Yeah. So it's project based learning. So I understand that this might go everywhere, but like you say, somewhere it's stronger, somewhere, it's weaker, so I understand. Yeah. When it comes to the,

**Interviewee 1:**

If you want to focus. Okay. No, no. Probably first will be the lean startup practice that we were focused more into the, I mean, content. Yeah. And less I'm not very sure with the experience-based learning cause experience is different from content. Content, Yeah. So, yeah. And innovation bootcamp maybe is too short for content to be learned. So,

**Interviewer:**

Ok. A learner, external stakeholder, where do you perceive it?

**Interviewee 1:**

First one, be in expert, expert based learning? First of all, yeah. Then maybe in the other two, I mean, in the vision bootcamp and growth face, Yeah. We would be both. Yeah.

**Interviewer:**

Yeah. And the last one is learning instructor. How do you perceive this? It's quite interesting. You got the,

**Interviewee 1:**

Yeah. Maybe, first of all, if innovation would come, Yeah, I think that might be, yeah, the instructions a shot. I mean, short term events will be very important. And yeah. Yeah. But I think the, the instructor should always be there in the lead startup, and then, Yeah. Yeah. I don't think it's big enough in the experiment based learning. So you can skip that. Yeah. That's my opinion.

**Interviewer:**

Okay. Yeah, that's fine.

**Interviewer:**

There is a fifth question here, but it's not very stringent in the sense that, yeah, it might enter, it might not. How can the innovation book term activities added to a course impact listed interactions, like all these interactions, But I mean, you mentioned this and you picked the one, so it's not very critical to answer that. Then the final one is tools and practices. Here I have identified some tools and practices I've been using for the course from before, but of course, you are open to propose anything you feel's important that has been, been missing, or you feel it should be there. And question is more one, practices, goals based. Do you suggest using in the innovation setting and in the experience based learning course? Of course. So

**Interviewer:**

First one is,

**Interviewee 1:**

Yeah, mvp, maybe retrospective meeting, that that could be something easy to adopt. Yeah. And it's a good, good, I mean good things to do for the whole team to learn from themselves.

**Interviewer:**

Yeah.

**Interviewee 1:**

Yeah. And

**Interviewer:**

But do you feel this six here, that the ones that mention, do they enter the, the whole, all these tools, are they relevant for this core setting, like startup driven? I know now it's become a bit more overlapped figure, but like, experience based learning, innovation bootcamp. Yeah. Go face startup, startup driven course software engineering course. So do you feel this six are good to have them first and then I I totally agree. You can spective meetings as part of Scrum, or you can have them as something else,

**Interviewee 1:**

I think. Yeah. Another thing you can add on, so is the team development Yeah. That the set of practice for that like games and yeah. Things, but yeah, that also as important. Now I see the six points you have, Yeah. It's all relevant and yeah. Yeah, we should have it. Yes.

**Interviewer:**

Yeah. So I'm not trying to distribute them because I understand they enter the course. And what, what else do you feel it's missing or would you like to suggest for this framework? Because these are the parts that have been next door, these are the things that have been done. But I mean you have your own ideas here in a certain way. So what, what do you feel would you like to suggest different dimension, different settings?

**Interviewee 1:**

Yeah, so like team the team dynamics, that's the, I mean, wow, it's a bit too general to say, but yeah, when because, you know, in startup most important thing is a human is a re human resource. So if the team is motivated enough, then they go together, and if they're not motivated enough and they, they break apart. So I think it's it's more important than in a usual project by cost about the team development and yeah. Team dynamics and yeah, align the, the, the same goals. And and it can also be related to your startup formations about like share, I mean startup share, I mean like co-founder, co-founding and okay, this all motivate people to be on board, so it is also practical. So they how they evaluate and access contribution from different follows and yeah.

**Interviewer:**

Yeah,

**Interviewee 1:**

That all can be part of the, the soft skill part of the team dynamics can be part of the team development. So, and I think it should be, yeah, part of this as well.

**Interviewer:**

Yeah. Totally agree. Yeah. But for me, from my side, this is the end of the discussion here. I'd like to thank you for this and we'll recap another matters like have a quick, brief five minutes view of what the other people said. But thanks a lot for this insight. I think I can stop recording now. I take a nice screenshot of this. So you know, if anything happens and mirror crashes, I still have my computer rear arrangements. And besides that, I will just expand this a bit before everything is wrapped up. And so you can see the configuration you have proposed afterwards and compare it to the other interviewers. And so I'll just stop recording. I think this goes to.