"So I remember saying to my colleagues that, you know, 20 years from now we know whether we made the right decision. And it does affect the entire field in Finland, because we are the kind of master's program in water and environmental engineering in Finland and whatever kind of restructuring we do, it has a major impact to the field. And we if we get it, right, it's really important. But of course, if we get it wrong, then then we are in trouble. And then kind of thinking back that, you know, we made some wrong decisions, that would be hard as well."

Hi, I'm Riikka Evans. And this is Future-led Learning podcast.

The old world questionnaire studies the well being of our students on a yearly basis. The results of the questionnaire help us to identify many things, among them good practices in teaching. One of the programs that has achieved very well is run by Marko Keskinen, associate professor at the Department of Built Environment in the School of Engineering. Monica is also the director of the master's program in Water and Environmental Engineering, and a successful and very well liked teacher. This episode was actually recorded as the pilot for this series. The interview was done by our producer Sakari Heiskanen. And as it is very interesting, we decided to publish it. So welcome and enjoy.

You're a professor, but you're also a leader of the organization, the leader of education in a master's program in Water and Environmental Engineering. Since when, by the way, when did you start?

Well, as an Associate Professor, I actually started 2020, my return to Aalto university to start in this associate professorship. Before that I was also university lecturer here earlier. So I started in the university lecturer position already back in 2013. And then one of my first tasks actually, I was coordinating the preparation for this new master's program. And it then started in 2016. And ever since I've been either coordinator, or then, past two years now the director of the program.

If you look back to 2015, when you were starting, what kind of background did you receive? And what kind of grounds did you have for your work?

The decision to do start a new master's program obviously was kind of coming from outside. You know, our university leadership decided we will establish new master's program that will be English language, and that will men in many situations be quite new. And at the universities, it's sometimes difficult to start some something really... kind of transformation, if it comes from the top, if it's somehow initiated, not by yourself, but by someone else. But so so then there was, I know that there were of a lot of people who didn't necessarily see the need for it, because we did have quite well functioning

master's programs already earlier. Then I think the main point, then was really that we made the decision, the cautious decision that Okay, now we take a chance here, that we really want to rethink our entire program from the scratch, we don't want to do it kind of superficially new, but we really want to do it, like properly knew, and take the chance that we have ordered, and make the use of the task we have been given really to rethink our our education.

How long time did you have for that rethinking?

Well, we were lucky, we had basically three years actually, because the there had been the renewal of our bachelor program before that, that was done in within a year. And everybody understood that that was kind of far too quick. And it was more stressful. And so now we had more time. And that was that was one of the important issues here actually, that you have enough time because then you are able to engage your own team here at the university, but you also are actually able to engage your stakeholders also in the discussions on what the education would be.

How did you make people believe in the stuff?

Well, the entire process I tried to make as participative as possible. And of course, I mean, everybody was very committed from the beginning, people really understood the task, but we had workshops where everybody was kind of raising their concerns and views and ideas. And then we had some structured discussion, and really taking our time at the beginning really talking about the fundaments you know, what is it? What are the competencies, what kind of graduates we should have? In a way it's nice that you are able to make a major change, but of course, somehow it always, there is always a risk in that change, because if you get it wrong, then then it would be easier just to continue as things are often because then then you don't at least get blamed. But if you if you change something like we changed quite a bit, so there is always a risk, you get it wrong. So I remember saying to my colleagues that, you know, 20 years from now we know whether we made the right decision. And it does affect the entire field in Finland, because we are the kind of master's program in water and environmental engineering here in Finland, and whatever kind of restructuring we do, it has a major impact to the field. And we if we get it wrong, right, it's really important. But of course, if you get it wrong, then then we are in trouble. And then kind of thinking back that we made some wrong decisions, that would be hard as well. So I think, you know, balancing off the kind of the freedom and the flexibility of, for people to think new, but at the same time to give a bit of that pressure that it is important that we also get it right.

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One thing about management and leadership is about the pressures that come from inside. How did it feel for yourself when when you have these pressures?

I enjoy pressure, you know, I see it as an opportunity really, and I, I feel that I'm quite strong in terms of strategic thinking, that's my strength. So I enjoy that kind of situations where I can really think big. I mean, it wasn't always easy. And still, of course, sometimes we are feeling that, did we do this or that right... But generally, I feel that we have succeeded quite well.

Now, it's five years… no, four years. Did you make any mistakes that you regret?

Not major ones, but perhaps trying to do through big changes at once? You know, after the first year, I must say that, when we had our teaching team meeting, we were all just watching each other like, "Okay, this was pretty hard here, but we made it". So. So in the hinside, of course, we could have somehow made it easier. But on the other hand, when you make such a big change, you just have to make it then of course, there has been fine tuning in terms of actual actual course contents, and also the core structures. And now I've now I feel that, you know, the first batch that ran the master's program... so poor people, I mean, they did manage well, and they were wonderful students. But I mean, there were so much kind of uncertainty and kind of still issues not fully in place.

How do you think that Aalto University has changed during this four years, especially in regard to the program developing sphere?

Yeah, well, I think overall, the, of course, education goes hand in hand with the general spirit of the university. And that has definitely improved. I mean, the fact that we are now everybody in the same campus is a major thing. And it's really, really important. And of course, it is the students that first understand and initiate the change, because they... it's not always easy for all personnel to be here and see how it was before... but especially the new students, of course, they come to the new university and new master's programs, they don't know what it was like before. So they are actually driving the change also. And I very much like the Aalto spirit. And I think what has happened increasingly here is the increased feeling of coherence between the the six schools we have, and especially kind of more collaboration between the ARTS and BIZ and then the kind of engineering schools the four kind of technically oriented schools. So that's definitely something that should have and should strengthen further. In terms of program leadership, I think there is also much more coherence now. And of course, it was a major change to drive this new master's program in so everybody was quite busy in that there now we have had more time to reflect, kind of look back, how we did, how are the programs functioning, learn from each other exchange expertise on that then we are nice phase I would say in terms of program leadership.

Future led learning.

The AllWell? study, which studies the well being of Aalto students, or portrays your program as one of the best performers in 2020. What is the role of student wellbeing in your work?

It is super important because our students are really ambitious. They are really passionate about what they do, they want to learn. Of course, learning always is a bit painful. And it requires kind of learning new things. So it is a cognitively challenging process. But I would say that at least as much of that pressure comes internally from the students themselves because they are so ambitious. And then kind of somehow balancing off that that we are providing them the means for learning but that the same and time reminding not to overdo it. Because then obviously it's of no one's benefit,

Reminding them of not overdoing it. Is that a tradition? Or is that something that you've implemented here?

I think we are learning it, I don't think we still are perfectly in that not in our programming, not definitely not in the university either. But I think it's increasingly understood that something that we... it's kind of the way of working really and way of thinking about it. We have, for example, this concept of level of enoughness, or level of enough, that we discuss: that students and likewise, actually us as researchers, we really need to realize when it is when we have reached the level of enough. Because you can always fine-tune and you can be a lot of things further. But sometimes it is required that you stop somewhere and accept that that's now the level you reached.

They've been learning all the way from school that they have to achieve. And now you're saying that there's enough, you don't have to achieve anymore? Which is kind of contradictory, isn't it?

Yeah, maybe it is. But the entire thing in this program, what we want to emphasize and we have this personal learning portfolio process - and related mentoring process for that for students - is to is to make them realize... because easily how we how we are guided with our learning is that we just do the assignments that we are given. And then we kind of somehow trust that, okay, now I learned the things that the teacher thinks we should learn. And then I'm kind of, then I'm happy. Hpwever, we try to remind the students that they are individuals with their own aspirations and whatever existing expertise and skills they might have. And then there is something that we can add to that kind of expertise to our master's program. And we try to make them reflect that what we provide in a course., A) for one student is one thing that he or she is after from that course, and another student is after for something else. And we try to emphasize that they would kind of actively think about that: what is it, what kind of competence they want to build, and what kind of experts, they want to be in our field. And we put quite much emphasis on that.

So there's a element of self assessment.

Yes, very much, ask any of my student, what is my favorite word, and that would be "reflection". Because I really think that it's important that we don't just do and, you know, especially in terms of learning, that you don't just kind of do the assignments and all that. But what once you've completed something you actually... you sit back, think, How did it go, you know, what did I actually learn and why and you know, what I didn't learn necessarily, what I wanted to learn and so forth. And how I did generally. And the reflection goes both for the individual students, but we also emphasize it very much in terms of the group work, because large part of our... all our teaching includes some elements of pair work or group work. And there also I think it is important not just to get the thing done, you know, you have the deadline and you the finish the job by most likely you are a bit angry and anxious about the whole thing. And then you just leave and do the next thing we try to encourage our students always after that, also to adjourn the group work so that they actually think and look back and and think how they did individually and also give feedback to the other students in the group

....mutual feedback upon the peer to peer...

...we make a careful and kind of well structured way to do that, depending on a lot of from the course. But for example, our common course that is running in the first period 1/3 of the entire course crate comes actually from self and peer evaluation. So the idea is to give the responsibility for students themselves to assess how they did to give a grade for themselves. And then also give a grade for their peers in the group. And they give the grade and they also give a short kind of explanation for that grade. And, and the idea is that, in a way, some of the students might find it somehow confusing that, you know, I would always grade myself five, of course, and if my students. But I've done it in my bachelor courses or masters courses. And at the beginning, because of my colleagues were always a bit doubtful about it. So I did, I did do some statistics about it. So it was very often that 80% of students gave themselves let lower grade than the average grade from their peers, which I think is in a waynice and fine that they are quite self critical also in their reflection when they're thinking in terms of learning. And that's anonymous, of course, when you give the grading and give the reason and feedback... so every student getas the written feedback from from themselves and from their peers and can read them and get diverse grade but those are anonymous. So then I feel that that has to be coupled with the kind of face to face feedback as well. For that there is this "I like I wish", a kind of facilitated, group feedback mechanism developed by Satu Rekonen and from Design Factory here at Aalto that we have been using using several years, and it works like a charm for that. So it's a kind of structured way to discuss among the group what do you like about the person and also about the group and also things you wish a person would do differently... So kind of constructive feedback on things to

improve for the for the individuals, and also for the group. We use it in a self facilitated mode. So there is no facilitation there. But the groups make it themselves only. And I think that is important, because then they get more personal in that process. And it is, you know, after, especially during this common course, where we use it: So there has been not one time that the students come with tears in their eyes, but smiling, from that exercise. Because it is hard to actually hear face to face that you have worked very well. But on the other hand, you hear from your peers, things that they wish you would do differently. And we tried to prepare the students for that also, by saying that, you know, it's really, really important that you are honest, but constructive, but also that you are open to that kind of feedback - you get that so that you don't immediately start to kind of defend yourself... but see, you know, what is the ways for learning. Because very rarely in the actual working life you hear anything like that you always hear it behind your back, perhaps, but never face to face. And we try to then show that, you know, this is this is the thing: this is we are learning here, and now we are learning about giving feedback to your groupmates and also receiving feedback and learning from that. So that's important.

Maybe they will change the way we work.

Yes, well, that's one of the biggest hopes I have that we are not only educating competent experts for our field to get employed, but really to change our field this way, and the ways we work.

Does it happen that people get distressed by the feedback they get?

No, I haven't heard... I mean, it, there are different ways to approach it, let's put it that way. So some take it very lightly, and you know, talking about it... But I tried because I do think would be really valuable for all of us. And especially if you're working for example, several weeks really intensively in a group so they get to know you and see your good sides and bad sides. And related to that, I think it's important that at the very beginning, we are talking about the five typical forms of group work where it's like from, from forming, to storming and then norming and performing and adjourning. And we say that there are storms in the group work and there are kind of It's very typical, so don't be afraid of of it. And then we also talk about the team roles, the kind of different roles that the people taking the group we use this well, there is a guy called Belbin who has developed these three categories for different team roles. Because he's, I believe American, so he has a very positive approach for team roles. So then I've added these purely harmful roles also like freeriders and these moaners, these "vastarannankiiskit" types of persons and others who don't really want to perform for the group. And we openly discussed that we know these kinds of people exist, I asked him the students, have you been ever doing group work? Yes, have you ever seen this kind of person as part of your group? Yes. And then we discuss and the group form

the rule for the back group work, and we specifically asked them to address the storms which includes the entire group in some form, and then specifically ask them to address how they how they address the negative role that someone takes in the group that is not beneficial for the group. And the idea is to kind of outsource the whole thing so that it doesn't get personal because then if there is a conflict within the group, if we only then start to discuss that this is normal or that, then it doesn't feel like that but if before the conflict arises you already have a say that you will get a storm there will be negative roles that people take. How do you actually react to that? I think that preparing them for that is important.

How about any other skill sets for the teachers? Is there something else that you would like to add?

I... well "rautalankaa ja reflektiota" was one of my whatever is raitalanka in Englsih... clear structure and then reflection. That's something that I think in terms of teaching both at the program level, but also at the course level, and even at the lecture level is required. So so if I trust that the students do well when you just give them clear enough structure, so that they understand what we expect from them, what they should be doing, but then after that we give them freedom to define that process learning process for themselves. And then again, as I said, reflection is something that I feel that we easily forget, we just focus on those assignments and, and do that. And then actually, I've even said that by kind of using just 1%, max 5% of your time for reflection, you actually, you enhance your learning by 50%, or something - purely nonscientific ratio there. But but it does help a lot. So that's something also I would recommend. But here in our research group, we have just wonderful students, wonderful teachers, I mean, really skillful, really cautious, really wanting to develop themselves and their courses. And I think that's actually one of the most important things. No-one will ever be perfect. But I think it's important that we are ourselves also reflecting how our teaching went and how we can develop it further and how we change it to correspond to the whatever new situations there are.

There's also other people and teachers working with the students, and how do you see the role of the altar staff and all the crew and also maybe doctoral students as part of the community that you're working with?

They are very important part, of course, I mean, we have here we have a flume, and we have a laboratory facilities, and we use them in our teaching, and our Aalto staff are very important to provide our students that expertise, and students enjoy those kind of practical hands on kind of exercises very much. Doctoral students, and also postdocs are very actively participating in our teaching. And then it's also important because they often then provide a very kind of research founded view on some particular issue. And and also, I think it's important that they are some kind of a role models for the, for the

students because they are quite close to their own age. And many of them might be our own alumni from the program and so forth. So they see what it would be if you take the kind of scientific path after the master's program.

We're going towards the question about pedagogical development and program development, which is implemented to leadership and management and the way teachers and the staff works with students. How do you do it?

You tell me! Some kind of show off the leadership, I guess important. It's like my colleague Olli often says that, in the university leadership is about herding the cats. So trying to make the very individually self minded cats to go to the same direction. So obviously, it doesn't work if you if you use the stick, if you try to use it kind of top down. So it's about inspiration, and trying to motivate people to do good things. So as a program director, I see that my role is to try to make other roles enjoyable, so that the teachers, our actual teachers, enjoy the courses they give, enjoy the the community we have as teachers, and then, you know, that sometimes requires just having a nice workshop or nice discussion and kind of reminding us about the importance of our things. Sometimes it does require practical advice or support for someone who is struggling with his or her course for example, or something. But it is really much about the kind of just finding that kind of inspiration and motivation to do good things and our team does have that but as a leader I think that's for the leader the most important thing. And that, of course, now deals with about getting the team to work together and because it never is the leader or the director that really makes the program but the teachers.

What kinds of ways do you have of knowing how you're performing? AllWell? is one of the questionnaires that we use, or other uses, but there's there must be many ways of evaluating the success of the program. What kinds of tools do you have?

Yeah, this is a nice and important question. I do feel that we have a quite nice examples that other programs also are most free to copy and use in the ways they feel best. We do have the course feedback, which is the standard feedback that every student should fill at least at the end of each course. And it provides important information about the course generally. But of course, we are not interested in just about the courses but about the entire program. And for this, the aforementioned personal learning portfolio is something that helps us. The main point for personal learning portfolios is that the students make them during their studies building on the existing expertise, building on what they envision their career would be, and the kind of tasks they would like to have in their life. And then they think how those different courses come together to help them to build certain competencies that they want to have. And the main thing there, of course, is that the students make it for themselves. But we do reveal that we use the portfolios also, for us as a way to assess what we actually provide the students with, because obviously, when

students are then trying to make that learning portfolio, they are trying to build their competence profile through that. So it is interesting to compare and see what kind of competence profile different students have with these different variation of the, of the courses they pick. And so that's... one tip is the personal learning portfolio. And I do recommend it. It's not always easy, and like in many things, there are 20% who hate it, 60% who do it and find it pretty useful, and 20% will love it. So there are always students who don't really enjoy it, and that's, that's fine as well. But we do require all students to make it, whether it's kind of superficial and shallow, or whether it's really well thought and majority of students do make really good portfolios. So that's one thing. Other thing we've done is that we have this habit at the end of first year, which is the major when the students complete the around 60 credits of our so called major. So our common and advanced courses. So we do send a specific tailor made program specific questionnaire for the students that everybody has to answer about the you know, many things. We ask whether they work during their studies, and, what kind of courses they took, but also very much about the competences, identity skills, working life skills and contents that they have learned, giving feedback on that. And then also, of course, giving feedback on how the program works, what we should keep... the three most important things we will keep and the three things to improve. And that questionnaire survey is a really nice way to collect anonymous feedback on that. And then after that, we couple that with the workshop, where the students come together with the teachers, and we synthesize their feedback for them. And then we discuss further and reflect together, you know, how did it go... if from the feedback there is some issue that obviously needs to be addressed, then we discuss that together so that there are other students in groups and our teachers, as part of that group, we discuss further, you know, what we could do?

There are many things why we do it this way. One is, of course, that the students can voice their concerns directly for the teachers, but also the commit teachers to understand. As a program leader, as a program director, I read the feedback carefully, but all our teachers may not necessarily have the time for that. But then when they are they're talking with the students, and they hear from the students themselves, about some issues, you know, about too strict deadlines or unclear instructions or, you know, overlapping assignments, or whatnot. So then I hope that that again inspires themselves to initiate the change in their courses. And so that is important, it's just a two hour session. And normally, after that student association organize this beer and barbecue, or at least barbecue outside and kind of mingle together after that, then it's kind the end of the first year. So it's also important for that, so we kind of want to complete the first year in style after that reflective process. And then as a teaching team, we then have in June, based on that we have then our own meeting where we decide what are the steps we need to take for the next academic year to develop the program further. So whether we need to

change something or... and now we have run this is it now the fourth or fifth time we've run it. I think doesn't require much once you get it done, and once you get it in place, but it's really nice. And of course, it also allows you to then start to compare between the years and whether there are differences between the years and obviously now with the remote teaching and the corona situation it will be really interesting to see at the end of this academic year, you know how the how the students feel, how what they learned and how the entire program went.

It's a way of getting to know what needs to be changed. Do you have any examples for about of changes that you have made, that have derived from this questionnaire?