

# DTM Podcast #1: Reflective Practice

## Show Notes

This podcast features an interview with Kees Dorst, Professor of Design, at the University of Technology in Sydney, Australia. The interview is followed by a discussion between Peter and Mieke, who talk about some of the things in the interview that resonated with them. Below are some key references for you to follow up on the ideas that are talked about.

Kees Dorst is one of the best-known current figures in design theory and methodology and a former student at IDE. He has published many highly-cited papers, and one that is mentioned in the podcast is his early study of how expert designers think: [Creativity in the Design Process: Co-evolution of Problem and Solution](#). He has written many books on design and the recent book that he mentions, [Frame Innovation: Create New Thinking by Design](#), is fast becoming a key work for designers. He is also a founding director of the [Centre for Designing out Crime](#) in Sydney and gives some examples of the work that has been done. The Centre produces nice animations showing the methods behind the work that they do in [Frame Creation](#) and [Framing](#).

The major person that is talked about through this podcast is [Donald Schön](#), who was hugely influential in design (and many other fields) with his book [The Reflective Practitioner: How Professionals Think in Action](#). The book is written in a very accessible way and is worth looking at (particularly the study of an architect and their student (Chapter 2) that Mieke mentions in the discussion). You can explore further aspects of Schön's work on reflective practice through the following papers on: [framing](#), [seeing as](#), [design as a reflective conversation](#), and [types of design thinking](#). A [lecture](#) that Schön gave to designers in 1989 explaining his theory in detail with lots of interesting examples is also worth watching.

Another person that Kees mentions is [Herbert Simon](#), a Nobel prize winning economist who was deeply interested in design in the 1960s and 70s. His classic book is [The Sciences of the Artificial](#) which Kees describes as more of a rational approach to thinking about designing and design processes. The book is an essential reference work for design theorists and is packed with ideas about design, human behaviour, complexity, and many other things.



## Podcast Transcript

### INTRODUCTION

**Peter Lloyd:** Hello, everyone. I'm Peter Lloyd.

**Mieke van der Bijl-Brouwer:** Hi, everyone I am Mieke van der Bijl.

**Peter Lloyd:** And this is our first podcast for this year's DTM course, the first of a series of podcasts looking at different aspects of design theory and methodology. This first podcast is about reflective practice, which is one of the ways that we're framing the course.

**Mieke van der Bijl-Brouwer:** When we think about theory and methodology, we often tend to think about specific methods that designers are using, but the way that we think about this subject is more broadly about how are designers actually designing. The theory of reflective practice is a really useful theory to look at how designers are designing and it's been used by both practitioners and researchers in the field of design.

**Peter Lloyd:** Yes, it stays very close to the way that designers think about the way that they work, I think, which is what makes it a useful sort of frame for the course in terms of theory. There are quite a few aspects to reflective practice, too many to explore in this podcast. If you look at the show notes, there are further references to follow up that you'll hear about. But we're going to start with an interview with someone called Kees Dorst.

**Mieke van der Bijl-Brouwer:** Kees Dorst is a professor who works at the University of Technology in Sydney. He's one of the key figures in the design research field when it comes to understanding how designers are designing. And he has also used the theory of reflective practice in his work. In the 90s he did a famous study on how expert designers are actually designing, how they are thinking and how they are working.

**Peter Lloyd:** So Kees is an important person in the subject area. He's done a lot of really good work, I think, especially in the area of design thinking. So Kees is a big person to talk to, I think. And he's also someone that has a history of being at Delft. So I'm really looking forward to what he has to say. Before we begin the interview, we should say that it's also in two parts. The first part is about reflective practice, we'll have an interview and then we'll have a discussion afterwards, Mieke and I. The second part is about something called co-evolution, which is a bit more about the process of design, but that's in the second podcast so we'll talk about that then. Okay over to...

**Mieke van der Bijl-Brouwer:** Sydney!

## INTERVIEW

**Mieke van der Bijl-Brouwer:** So we are in Sydney this morning at the University of Technology, Sydney, which is where I used to work before I moved back to the Netherlands and started my job in Delft. And I'm here this morning with Professor Kees Dorst, first of all welcome Kees.

**Kees Dorst:** Thank you.

**Mieke van der Bijl-Brouwer:** Great to see you again. And thank you for making time for us. Maybe, first of all, can you say something about what you do here at UTS before we start talking about design theory.

**Kees Dorst:** Well, just to introduce myself, so my name is Kees Dorst I studied industrial design engineering and Delft a very long time ago, but I also studied philosophy in Rotterdam and I've been fascinated in sort of doing design work but after having started my design firm, I sort of realized that I kept thinking about it too much. So I also started doing research into how does design actually work? And through sort of many different things I came to be interested in how expert designers think and how they solve their problems and what their strategies are and what their methods are. And particularly interested in looking at how they create new approaches to problems, new frames, actually using design and design thinking across many different fields and looking at design slightly differently by

using design processes as hosts for practices from many other disciplines to come together. So that's what I do.

**Mieke van der Bijl-Brouwer:** Ok. So we're going to talk a little bit about that application of design outside the traditional design field later. But I first want to go back a little bit, because we're talking about how designers design basically in this course and one of the theories we're going to use is the theory of reflective practice developed by Donald Schön. And I know you have used that theory quite a bit in your work. So could you explain what that theory means?

**Kees Dorst:** Yeah. So happy to do that. So I've sort of met Donald Schön and worked with him a little bit early on in my career when I was still doing my PhD. And Donald Schön, his background is in philosophy, he then became a consultant and then he became a professor at M.I.T. in Boston in the Urban Planning Department. So he's got this philosophy and design background. And he was really fascinated on, sort of, how do people think about problems? how do people think about issues? And he realized that a lot of the education at M.I.T. was very much a classic engineering education, so lots and lots and lots of knowledge. And then people would graduate and get into practice and actually have to learn the job more or less from the start up, because they hadn't learned how an engineer thinks, they just learned to make the sums. So he was sort of at M.I.T., quite a controversial figure because he said it should be about professional practice. But then we should learn what a professional practice is. And what do practitioners actually do?

So he studied many different fields. If you look at the book *The Reflective Practitioner*, there's doctors in there, there's engineers in there, there's architects in there, et cetera. So he was looking not particularly at design, although he was close to design fields, but at how does how does professional practice actually work? And he's sort of, looking at that thinking pattern from his philosophical perspective, he said, well, practitioners actually do several things. One of the things they do is what he calls reflection-in-action, which means that when you are doing something and you're a skilled person, you're very quick in adapting what you do to the situation almost without knowing it. So on a very moment-by-moment basis, you're doing the right thing. That's what he calls reflection-in-action, which is almost, it's very intuitive, it's based on experience. And then he said another thing that practitioners do is, these professionals do, is a reflection-on-action, which is more explicit. So you're working on something and at some point you're wondering 'am I

going in the right direction? What do I need do to change? Is this going to be fruitful or am I ending up in a dead end if I pursue this direction?'

So that's what he called reflection-on-action. And there's basically, if you read his books, there's a little bit of a process of four steps. That's sort of what, according to Schön, first thing that a practitioner does is he names the important elements in a situation. So what is actually the matter here? What are the key things that I should worry about, that I should take into account. Then they frame the situation, which means that they look for an approach into the area to sort of move forward. Then they move, so they do those moves. So in design work that is they do design. And then they reflect on those moves and say, is this going in the right direction? So do I need to sort of look at different frames because this frame isn't getting me anywhere? Am I looking at all the important things or do I need to go back and name other things in the situation and prioritize them as important? Or have I just made a wrong move and do I need to loop back and sort of revisit that move? So that's how you steer through a process like that. So what he actually more or less models design as is a learning process because you go through many of these learning loops and you more or less learn your way towards a solution. So that's the core of his theory.

**Mieke van der Bijl-Brouwer:** So when you when you're talking about reflection-in-action and these learning loops, you mention the four steps: name, frame, move, reflect. That still sounds quite abstract. Could you give an example of that?

**Kees Dorst:** He names a couple of examples in his book but let's say, we've done a project here in the Designing Out Crime Center, which was about an entertainment area, Kings Cross. And the problem there were people named that problem regionally as this is about alcohol-related violence. So people go out, people get drunk, there's violence in the evening. That's all sort of hanging together. And that's a very particular frame already, because if you say that something is alcohol-related violence, then you link the violence to the alcohol and then if you want to reduce the violence, you do that by reducing the alcohol. In the end, with the Designing Out Crime Research Center, we went to Kings Cross and one of the first things we realized was that the reason that all those measures didn't really help, didn't really work, was that the violence that we saw in Kings Cross actually was not alcohol related. So that's where having the wrong frame for a situation or a frame that is not fruitful, actually sends you in completely the wrong direction. So that's where we

started out by saying what other frames could be used to actually understand the situation better or in a different way. So that was the start of our project there. So what I like about what Donald Schön does is that he highlights that you're always in a frame, you're always approaching something in a certain way and just being conscious of that: 'I'm doing this because I'm thinking about it in this way' already helps to question that. And I think looking at what expert designers do. So my research was sort of travelling around the world, visiting expert designers and studying what they do. They spend an awful lot of time, maybe 70, 80 percent of their project on looking at their problem. Because they know that once they have an interesting and original entry point into the problem, that once they've got a new frame, the solutions follow very quickly. And they're all really good because they are actually based in new thinking. So I think framing is a really important aspect of design and it's good that Donald Schön has managed to highlight that.

**Mieke van der Bijl-Brouwer:** So this is a really great example of how a new frame was used in this context of the entertainment district and the crime problems there, now I'm not sure how many product designers would work on these kind of challenges. Are there also examples from product design when it comes to framing and how that works?

**Kees Dorst:** Well, the funny thing is, as I said, you're always in a frame and a lot of the originality in product design doesn't come from a creative person brainstorming a wonderful solution it comes from new approaches to problems. So you could almost say that almost every good design is an example of reframing in that sense, or there's an element of reframing in it, which is also why if you look at design competitions the people that win design competitions are always people that have taken the original brief a little bit for a walk and done something slightly different, but clever and they always get told-off by the people that didn't win because they didn't hold to the brief, yet the competition was actually about creating new approaches into problems. Because that's what designers can bring. And that's what designers bring time and time again.

**Mieke van der Bijl-Brouwer:** So the framing is really part of that reflection-in-action part or do you also use it in what he calls the reflection-on-action?

**Kees Dorst:** You also use it in reflection-on-action because in reflection-on-action when you realize that you're going somewhere where there's not many solutions,

having to re-frame is one of the key things that often happens. But it's, let's say that Schön's theory, when it first was published in 1983, it became very popular with designers very quickly because people sort of recognized something in this description of design that they hadn't seen in the earlier phase models and more rational processes. It also fizzled out a little bit after a couple of years because, yes, people realize this and recognize this, 'this is actually how I think, this is somebody who understands me', which is really important. But then saying that everything happens in these learning loops is not very practical because it makes it very hard to plan. And Schön has also been quite abstract in how he describes how people get to frames. He says that frames are based on experience, which could be true, but it's not very helpful because then to make a good frame you just need a hell of a lot of experience probably. And if you say that frames are unoriginal, then they can't be solely based on experience. So on the one hand, his theory really hit the design field as 'yes, finally somebody understands what we actually do because we don't recognize ourselves so much in the linear design model processes. On the other hand, now that we do see that recognition and see that understanding, what do we do with it?

**Mieke van der Bijl-Brouwer:** So when you say these linear design models those where the models that existed before this theory came out?

**Kees Dorst:** Yeah, those were models, they basically came from practice, from people that had to sort of plan out design projects and actually show to their clients or show to their bosses that what they were doing was not just a mess, but was a number of activities one after the other, so those became phase models of design. And then Herbert Simon came up with, coming from an A.I. standpoint, they wanted to program design into computers, and this is late 1960s so not very sophisticated computers, but that means that you have to do a lot of thinking to do it well. And he sort of rationalized that as a rational problem solving process. So design was modeled as this rational problem solving process. And then Schön said, well, you're missing the point about practices when you do that. So you can also look at design in this other way. So it was a very fruitful time because you had several competing theories and people had to think about it, decide, or use one and then use the other. So that that was sort of, design research at that time was sort of based on these two paradigms.

**Mieke van der Bijl-Brouwer:** And I know you studied those in your PhD, which I think is quite interesting, can you explain a little bit what you did in your PhD and how you studied what designers do?

**Kees Dorst:** The story behind my PhD is that I was running my own design firm and I had this young designer that I had hired, and he was in a conceptual phase trying to get a project done. And I realized that he was just messing about. Basically, he wasn't getting anywhere. And I also realized that when I wanted to sort of guide him a little bit and help him, that the only thing that I could do was basically say 'I would do it differently'. And I found that very unsatisfying - don't we know this? So I went back to my professor in Delft and I said, I want to know everything about how integration happens in product design. And they said, 'well, we don't know either'. So that's called research, and you can get a room, and probably the books that you need and figure it out. So I started doing my research into how does integration happen in product design? How is it possible that product designers when you've got a very messy problem area with lots of stakeholders and technology is there, ergonomics is there. It's all these different things, that product designers manage to make a fairly simple product in the end that actually encapsulates all of those things and creates great value. So how do you come from all that complexity to a certain simplicity? So that's integration. So I was really interested in that. So that's when I started studying integration and by basically giving designers an exercise to do - a design brief and taping them and seeing what they were doing, it's called protocol analysis, and I saw them wrestling with integration, I saw them reaching integration, so I was completely fascinated as a practitioner. But then I used the rational problem-solving way of looking at design to try and trace this, pinpoint where does it happen? And I couldn't. And I thought OK, that means that, I mean these designers are obviously right, they're in practice, they are doing it. But apparently our way of looking at it is limited in a way that I didn't realize. And in that time, Delft as an education, rational problem solving was basically what you learned as 'this is design'. And I said well there must be other ways so that's when I met Donald Schön and became fascinated in also using that other way of looking at design. So in the end, my PhD turned around and became the comparison between those two paradigms, with still integration as the point of comparison. So I was still looking at integration from those two perspectives, but it became much more about the paradigms themselves than about integration in the end.

**Mieke van der Bijl-Brouwer:** So you compared Herbert Simon's paradigm to Donald Schön's paradigm and looked how that played out. And what was your conclusion from that study?

**Kees Dorst:** Well, of course they're both valid in their own way, and they're both valid for different uses. Also that you shouldn't confuse them. Just pushing them together in one thing makes for a very messy thing. But it led, for instance to, as I said one of the problems with the Schön paradigm of reflective practice is that it's all learning loops and you can't plan anymore. In the end, I worked with a firm in Boston called Product Genesis, and for them we made a hybrid planning model where if you were a design firm, you've done projects in a certain area for a number of years, so you actually know that there are areas within your design project that are quite linear. You're not going to learn there, you're just going to do what you're good at. So in that hybrid planning model, those are planned linearly. And then there's these areas where you know that there's newness because you don't have the experience of we just don't know yet. And that's where we planned in learning loops. So we tried to actually accommodate also the learning, because the problem with design planning on the whole is that if they are too linear, all the learning is the really fascinating stuff. That's where things really develop, that's where originality happens. But if you don't plan that in and you plan design just as a kind of best case scenario of activities from a problem to a solution, you're going to do all that learning in the evenings and weekends and under the shower, et cetera, instead of being planned as part of the work that you do. And it's actually the part of the work where you have the most added value. So you should protect that and not just do that over the weekends, et cetera. I was always surprised, one of my design firms was in Eindhoven, and you could sort of see the lights on in all these design firms in Eindhoven very late in the evening. Also when we needed information, we just used to call each other all the time until late in the evening, because you knew that everybody was working late always. And that's because basically everybody had sold a project on linear planning. But that's not how it works. So you've been unrealistic and you then have to pick up that slack by working in the evenings and over the weekends, et cetera.

**Mieke van der Bijl-Brouwer:** Would you say that's one of the more practical uses of this theory, that you can actually better plan your design process and also explain to others what you're going to do in those learning loops?

**Kees Dorst:** Yeah, I think that's really, really important. And then the second weakness of the Schön theory, at least that I saw was that he never told you where frames were coming from. So that's when I started studying expert designers. How do they get to frames? So that became a frame creation methodology. I really believe that what Schön has done is very important, but there's a couple of big gaps in there that make it impractical. And so let's try and make that more practical.

**Mieke van der Bijl-Brouwer:** The way you explain it now framing is really key to coming up with new solutions as well.

**Kees Dorst:** Yeah, one of the things that I found sort of doing this, working with these expert designers, studying what they do is, one of the things I've found is that they never brainstorm because brainstorming is going random on the solutions, trying sort of lots and lots of lots of different solutions. Which is fun to do, and it's very good and it's a nice team activity. But then the next step, of course, is clustering those and selecting which solutions you go on with. Well, if your view of the problem hasn't changed, you're going to use the old view of the problem as that kind of filter. So you're probably throwing out lots of possibly interesting things, because you're not you haven't thought about the problem in any new way. And what I found with these expert designers is that they take a long time, they spend a lot of energy and a lot of time on trying to create new frames. And then once you have a new frame, every solution that comes out is interesting. So they've got no need to go completely random on solutions because they're quite focused and deliberate about, OK, if this is the new frame, what does that lead to, ideas wise?

**Mieke van der Bijl-Brouwer:** So you're saying expert designers are really good at framing. So now if you are a Masters student studying industrial design engineering, how can you can also become really good at framing?

**Kees Dorst:** A lot of it as being aware that you're framing, that you're always framing, and starting to question that so there's a lot of reflection that has to go on. You can do that alone or you can question each other and just ask 'why?'. That's more or less the key thing, because the moment you start asking 'why?' and you go back to 'oh, this is the reason we do this!' You can immediately see other possibilities coming from that. I mean framing is something that people naturally do. And of course, in your normal life, you also reframe. So it's not 'new' in that sense, it's just that it's really important in design and it's really important in design to

recognize that that is happening, because it's also happened before you know it. The moment you use words like, for Kings Cross, 'alcohol-related violence', you've looked yourself in completely. There's only one type of solution possible. And people just use that to talk about it as if that is the problem. So be very aware of those frames and see whether you can shift them. But that requires real sort of moments of stepping back and thinking, 'OK, why am I saying this in this way?' Or if you're talking to a client or to a supervisor, 'why is that person talking in this way?' What is their view that they have behind this? What is their, what Donald Schön would call, the underlying background theory that they use to describe this? If you can break that one, if you could break into it, you can find other types of solutions that people that are within the theory just can't think of.

## DISCUSSION

**Mieke van der Bijl-Brouwer:** So we've just been listening to the interview I did last week with Kees and I've been thinking about it. And Peter also has listened.

**Peter Lloyd:** Yes, I thought it was really interesting. I thought he covered some really interesting stuff from a design point of view. I think one of the things, that he talks about Donald Schön a bit, but one of the reasons I like Donald Schön and I think Kees likes Donald Schön too, is that he has these little phrases that really sum up what it's like to design. So one of his his famous phrases is 'the problem of the problem'. So it's not just about the problem that you're trying to solve. There's an underlying problem that you're trying to get to. That's one of his phrases. And the other one that I like is, he quotes Plato actually, which is how do you know that what you found is the thing you didn't know? And that really gets across the idea that you're exploring something in design and you're trying to learn new things in order to know that what you find in the end is is the right thing. So there is this whole learning process that goes on, but there are various different types of knowledge, I think, in the design process. Kees mentions engineers get knowledge. I think he means sort of 'fact' kind of knowledge. Whereas this other kind of process knowledge, the knowledge about what you gain from experience, and that's what Donald Schön encapsulates in his famous book, *The Reflective Practitioner*, but other other work too.

**Mieke van der Bijl-Brouwer:** Yes, that's also what I remember from first reading *The Reflective Practitioner* is one of the things that I really like that, I think Schön describes in the first chapter, is that we have a certain idea of how we are looking at what knowledge is. And the kind of technical way of looking at knowledge excludes a lot of knowledge that happens within a design process. So Donald Schön, he's explaining that that the old view of knowledge and practice is, regardless of the profession that you're in, is that you go to university, you learn all this knowledge and theory, and then once you go into practice, all you have to do is just apply that theory that you have learned and you will be fine. So, for example, doctors, when they go to university, they have to learn about diseases and illnesses and medication and treatment and those kind of things. And all the evidence that's out there, then once they go into medical practice, they know how to do that.

**Peter Lloyd:** There's a whole practice of just doing the subject or, you know, doing it professionally.

**Mieke van der Bijl-Brouwer:** Exactly. And that actually doing it professionally is something that we don't traditionally regard as knowledge or knowing. And the theory of reflective practice basically explains that there is a lot of, I think Schön calls it 'knowing-in-the doing' or 'theory-in-action' is also a phrase that he uses. Which I think is very, very useful because it's in that learning process that you get to an answer. So very often a doctor, when there's a patient in front of them, they can't just say, oh, you know, the diagnosis is this because I can find it in this book. And therefore, the answer is that. Now very often a doctor also has to experiment and work out what's really going on.

**Peter Lloyd:** I think that's the basic process that Kees described the 'naming, framing, moving and evaluating'. He concentrated a lot on framing, and how important frames are, and that's true. But I think that that process is one of experimentation. You're trying to understand something in a certain way and you're trying to see if your understanding makes sense by experimenting. So that's the kind of moving aspect of it. Schön talks a lot about 'surprise', when you try something out in designing and it doesn't quite go like you think it's going to go. There's an element of surprise, but that surprise generates learning. And the learning process in design, I think, is one of the most important things that Schön really articulates well. And Kees talked about that, there's an aspect of design where you 'learn your way to a solution', he talks about. That's a nice phrase. You

start from a point and you don't quite know where you're going to end up, but you know you're going to learn more at the end of the process than you did at the beginning. That's an interesting thing to think about.

**Mieke van der Bijl-Brouwer:** I was also thinking about this whole idea of rational problem solving. So Kees was mentioning that at the time that he did his PhD a lot of design education was addressed around this idea of rational problem solving, which was when I was a student. And to make that explicit what it looked like was, for example, if I was going to design a water bottle - I have a water bottle here in front of me - I was asked to explore the problem space.

**Peter Lloyd:** Break down the problem...

**Mieke van der Bijl-Brouwer:** So you know, what are other water bottles that are on the market? How much water do people want to drink? How do they want to clean it? And then you translate all that learning into a list of requirements. Then you do a divergence phase where you come up with different solutions through a brainstorm. And then you select the best solution based on your requirements. And then you go on developing that solution through a more detailed process. So that's what we call the linear process. First go to your problem, list of requirements, solution. I actually think a lot of that is still in the educational programme. When I graduated that was still the way I was thinking about design. At the same time you kind of, as a designer, you always feel like there's something more right? And I like what Kees is saying, all this thinking that happens in the at night and under the shower.

**Peter Lloyd:** I think that's really important to emphasize actually, because I think he really captured that idea that, it's all very well that design is about learning and, you know, you have these little insights in the process, but you also have to plan. You're dealing with a client, you're working in a team of people. They need to know what the plan is, and fitting those two things together, the planning side of design, which is the sort of more rational, you know time planning, process planning sort of thing. And then the learning, which is a bit more, you know, it happens in the shower, it happens in the bath somewhere, somewhere where you're not expecting it, or just as you're about to go out the house. Trying to plan that into the process is very, very difficult I think.

**Mieke van der Bijl-Brouwer:** Yes, I mean I've experienced that myself. I also had a design studio in Sydney alongside my job in the university. And just trying to sell design that is always difficult because you can never really fully plan the design process. But if I were going to design a water bottle, I would say, if I would do that through a process of reflective practice, I would not start with the idea of a water bottle, because if you ask for the design of the water bottle, what you will end up with is something that looks like a bottle with water in it. But if you think about the problem behind the problem, you could say people are looking for something that can get them to drink water wherever they are. They already start to think more broadly about this idea. And then it could also be one of those water bubblers, where you can just go and get some water or it could be a...

**Peter Lloyd:** A service or something...

**Mieke van der Bijl-Brouwer:** A service, or a backpack with water.

**Peter Lloyd:** I thought that was interesting when Kees was talking about framing, one of the things that Donald Schön mentions is this idea of 'seeing as', sort of seeing one thing as another thing, as a way to understand a problem slightly differently, to get underneath the problem. And we'll actually come onto that in another podcast, we're gonna be talking about that more specifically. One of the other things was that Kees mentioned experience and expertise. He mentioned the idea that coming up with a good frame is based on experience. But how do you get experience? It's that experience paradox.

**Mieke van der Bijl-Brouwer:** It's interesting because Kees is saying that one of the downside of Schön's, or shortcomings so to say, in Schön's theory is that he doesn't really say how you get to a good frame. And then Kees has written this book, *Frame Innovation*, in which he describes the frame creation method that he mentioned in the interview. He basically describes a method, a step-by-step method that he says people can use to come to better frames.

**Peter Lloyd:** So that's where you can start from, basically, I think the the idea of expertise is that the more experience you get, the better the frame, the more frames that you can think of, or the more creative you are, the way you can view problems in a different way and things.

**Mieke van der Bijl-Brouwer:** Yeah, it's definitely something you can practice. So I've worked with this frame creation method quite a bit and as a designer I find it very, very useful because it just helps me to explain where I am in the design process. It doesn't help people who are not designers to actually come up with good frames. So even though it's got like nine steps in there, and it's been sold to people as being something that can help you to good frames, but my experience is you still need experience to actually use it.

**Peter Lloyd:** Or to work with experienced people too. I think in *The Reflective Practitioner*, Donald Schön's book, he analyzes conversations between students and tutors to see what's the tutor actually saying to someone, and how are they understanding that thing?

**Mieke van der Bijl-Brouwer:** That's a particularly interesting thing, because for the students who are listening, if you have time and are interested, that's an interesting chapter in Schön's book, because it's a chapter of which describes a discussion between an architect and a student architect. And for me it's actually very difficult to understand what's going on and I think it's because I am not an architect, and I don't understand the language of architects, and it really therefore shows the expertise of the architects.

**Peter Lloyd:** Yeah, I think one of the things that he sort of says is that tutors are very good at getting you to ask your own questions. So it's not necessarily, you're not trying to solve a problem for someone it is basically well, you ask me what question you want, and then you go away and find the answer too. I think a lot of reflective practice about awareness. It's about awareness of the different ways that you think and awareness of when things don't go quite how you think they're going to go, how you respond to that, I think Kees referenced some of that.

**Peter Lloyd:** A lot of the things that Kees touches on in this podcast, and that we've also talked to a little bit about, we'll carry on in other in other podcasts too. I think they are themes that will reoccur. The reason that we chose reflective practice to start off was it covers a lot of the concepts that we want to talk about in the course, but in more detail. We haven't touched on things like improvisation and repertoire and process and dialogue. All these things are in reflective practice, but we'll come onto those in future podcasts in more detail.

**Peter Lloyd:** OK thanks Mieke.

**Mieke van der Bijl-Brouwer:** Thanks Peter

**Peter Lloyd:** I thought that was a really great interview, lots of insight and I look forward to hearing more from Kees in the second part of the interview.