

# **From a master of crafts to a facilitator of innovation. How the increasing importance of creative collaboration requires new ways of teaching design.**

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**Abstract:** This paper describes the changing role of designers in times of design thinking and service design increasing in popularity. These new participatory approaches expand the work of designers and thus, should be reflected in the way we teach design. If designers nowadays are demanded as facilitators and moderators of innovation processes, what role should educators take, to prepare students appropriately? Building on qualitative interviews with representatives of academia, industry and business, the paper highlights the new requirements and puts these in juxtaposition to the existing teaching model in Germany. While the industry is already adapting, the German educational system seems not yet prepared to teach the appropriate skills. The focus still lies much more on cultivating the individual craftsmanship of designers. The authors, therefore, propose a new model of design education with which they hope to inspire educational approaches for the development of collaborative capabilities and know-how.

**Keywords:** design education, facilitator, design thinking, creative collaboration, participation

## **1. Introduction**

Increasing uncertainty is one inevitable side effect of globalization and digitization. Along with it also complexity rises. Interdisciplinary collaboration therefore gains more and more attention in order to find better, more sustainable solutions that will help mankind cope with these issues. To create solutions for these complex, even “wicked problems” (Rittel & Webber, 1973) completely new ways of designing are needed. These require designers to take on different roles and ultimately design education is in charge of reacting to this massive change.

Design and the popular concept of design thinking as creative, human-centered and needs-oriented approaches to problem solving and strategy making (Brown, 2008) are being

recognized as suitable for dealing with this situation. While design constantly has an ambivalent relationship to business (Schneider, 2005), the latter is currently changing its rhetoric from *'Wanna have!'* mostly referring to designs' expertise in aesthetics, form and function to *'Wanna do!'*, imitating designerly ways of working and thinking (Buchanan, 2015). This can be observed looking at the numerous design agencies being bought by big corporations and classic management consultancies (Hurst, 2013).

Learning and innovation skills are increasingly being recognized as the distinguishing factors that separate students who are prepared for the complex life and work environments of the 21st century from those who are not (Mansilla & Gardner, 2007). Design education as well as the entire academic landscape therefore has to rethink which skills students need to learn to solve today's challenges and how learning should look like (Buchanan, 2001; Gardner 2006; Huber, 2009; Saavedra & Opfer, 2012).

“[...] a new quality of teamwork of simultaneous thought, permanent interdisciplinary dialogue is necessary [...]. But mostly people are necessary, who ask the right questions.” (Höger, 1995, p. 11)

In this paper the authors aim to contribute to the discussion by showing the weak signals of change in the current German design education.

## 2. Literature Review

Triggered by the described trends this paper is based on two hypotheses that have been extracted from the current discourse of design and education. The hypotheses are:

- The role of design is changing
- The role of the educator is changing

Based on these hypotheses, this paper investigates how these two changes affect design education.

### 2.1 The role of design is changing

Current social challenges increasingly call for an interdisciplinary approach in transformation processes (Borries, 2016; Jonas, Zerwas & von Anshelm, 2015). Described as “Design Thinking” (Brown, 2008; Schmiedgen, Rhinow & Köppen, 2015) and “Service Design” (Miettinen & Koivisto, 2009) new disciplines have moved into the mainstream, which no longer see design as a perfectionist form shaper discipline but rather as a holistic, explorative approach for collaboration (Burnett 2009; Rylander 2009; Sanders & Stappers, 2008,).

“The cultivation of [...] designers to be innovative thinkers and leaders, and to define meaningful problems has replaced the emphasis on familiar products and process.” (Hollern, 2016, p.177)

Designers today are increasingly being included in multidisciplinary innovation processes. Moreover, they design the team processes themselves (Blackwell, Wilson, Street, Boulton & Knell, 2009; Perks, Cooper & Jones, 2005; Ruhl, Richter, Lembke & Allert, 2014; Valkenburg & Dorst, 1998). Today, design is used to promote and structure creative collaboration between different disciplines.

“[...] designers are having to evolve from being the individual authors of objects, or buildings, to being facilitators of change among large groups of people.” (Thackara, 2006, p. 7)

Along with this the interest in visual communication skills, the designerly ways of dealing with qualitative methods and the type of knowledge creation, increased interest in industry, politics and the social sector (Kimbell, 2009). Therefore, design agencies but also design departments in organizations are developing into training units, which help to embed silo-crossing creative processes and methods. This realignment of design requires, however, a change in the self-image of designers (Mareis, 2014). They are becoming cognitive knowledge workers instead of a mere industrial work force. They shape communication and collaboration, which in turn shapes the perception and appreciation of their role (Laakso & Clavert, 2013).

“Understanding the new designer role: designers as connectors and facilitators, as quality producers, as visualisers and visionaries, as future builders (or coproducers). Designers as promoters of new business models. Designers as catalysts of change.” (Manzini, 2009, p. 10)

## 2.2 The role of the educator is changing

Furthermore, the current processes of transformation in our society also pose large challenges to our educational system (Huber, 2009; Mansilla, 2007). The digitization of our communication leads to a growing global connectedness. Together with the growth of human knowledge in general this leads to a massive increase in complexity (Bowen, Durrant, Nissen, Bowers & Wright, 2016; Noweski, Scheer, Büttner, von Thienen, Erdmann & Meinel, 2012). Both trends make it more difficult for lecturers to ‘know everything’. While in former times, the lecturer has been seen as a person who generally has more knowledge than their students, today, this relationship has changed. Similar trends have been recognized in other disciplines such as management and leadership theory (Amabile & Khaire, 2008; Austin & Nolan, 2007).

This requires a less hierarchal approach (cf. funnel principle) of teaching and a different process for evaluating the progress of a student. In this new world, each student has to be evaluated on a much more individual basis. This is among other things the reason why project-based learning approaches are becoming more common in lots of academic programs. Students gain knowledge and skills by working for an extended period of time to investigate and respond to an engaging and complex question, problem, or challenge.

## 2.3 Resulting research question

The described trends pose a challenge not only for established designers, but also for young, aspiring ones. Educators have to make sure that they are prepared for these new requirements. As Robert Young has put it: “The challenge for design education is to take into account how it relates to other disciplines, and we face [...] massive challenges in addressing these issues [...]” According to him, design education

“[...] cannot exist in isolation, purely as a process of art and design learning, but [...] it needs to address the relationship between [...] tacit, implicit and explicit forms of knowledge.” (Young, 2013, p. 185)

But where do students learn these skills that are important for facilitation, moderation and self-reflection in group processes? How can collaboration and facilitation as new required skills be integrated in the German design education framework, which so far is mainly based on individual experience and development?

Currently there is not much literature on the present German speaking design education and its’ adaptation to the previously described trends, but first symposia and informal get-togethers at the universities (eg. HTW Berlin October 2016, Unfrozen January 2016, UdK Berlin November 2016, Symposium »Designing knowledge« December 2016, REDO

Cumulus June 2017) indicate the interest in the topics of “how“ to teach as opposed to “what“ to teach in design education. With this paper we want to contribute to filling this gap.

### 3. Research Design & Methods

In an attempt to resolve the expected discrepancy between the current design teaching approach and the required designerly skills in business and industry, the authors carried out ten qualitative, in-depth, semi-structured interviews of 60-90 minutes each with experts in academia, industry and business between August and November 2016. The interviews were conducted by one of the two authors face-to-face or via Skype, recorded and then transcribed for better analysis.

#### 3.1 Sample

The interviewees are either working as design professors, academic leaders and lecturers or act as design managers and human resource managers in the industry or the design business. They were selected from three different groups: representatives of design academia, representatives of big corporations (industry) and representatives of design agencies (business). All representatives of academia are active within the German speaking academic system. The industry and business representatives work for German companies, but all companies work internationally, thus, have a clear understanding of the requirements in the global market.

*Table 1. Interviewees and their IDs for citation*

<b>Profession</b>	<b>Sector</b>	<b>Amount (ID)</b>
Human Resource Manager	Business	2 (A1, A2)
Design Manager	Industry	2 (B1, B2)
Design Professor & Agency owner	Academia & Business	2 (C1, C2)
Design Professor	Academia	4 (D1, D2, D3, D4)

Moreover, the interviewees were chosen either based on their status as experts of design thinking and collaborative leadership, working inside a large organization or recruiting talents for them, or based on their personal education as a designer as well as their teaching experience in design. Additionally, three out of four professors in our sample were responsible for designing a new master curriculum and are therefore very familiar with the current academic discourse.

#### 3.2 Guiding questions

The semi-structured interviews were aimed at answering the following three leading questions from different perspectives:

- How did the role of designers change through new participatory disciplines such as design thinking and service design?
- What skills are required of employees in the design field?
- How does this affect teaching design?

With both groups we discussed the effect of the new collaborative approaches such as design thinking towards design in general. Therefore, we asked them for their personal view on the new collaborative approaches, the related effects on their field and about the role designers play within these collaborative projects. In the interviews with representatives of academia, we focused on questions about design education, their characteristics in Germany, the role as a lecturer and the learning environment, including evaluation, formats, curricula stages and their reflection towards trends like design thinking. In the interviews with representatives of business/industry, we focused on their view on designers in their daily work. We asked for their general requirements regarding new employees and especially the ones regarding design alumni. A small part of each interview was dedicated to the respective other side: so also design educators were asked about their perception of changing requirements from business and vice versa.

In addition to the interviews, both authors also drew from their own experience. Both are actively working as design strategists for big German enterprises and at the same time have professional experience teaching design theory, design research and design thinking at different universities in Germany and other countries.

### 3.3 Data analysis

Both authors analyzed the interviews individually and shared the identified categories afterwards. Based on the patterns and these discussions the main insights were formulated according to content analysis (Mayring, 2014). In order to facilitate the mutual understanding the framework represented in the last part (cf. 5) of this paper was developed. This framework in combination with quotes from the interviews led to the formulation of practical advice in order to improve design education.

## 4. Findings

One underlying finding of this study is that the lack of collaboration skills amongst young (design) graduates fit into the more general problem of interdisciplinarity. Since science, business studies, humanities and design each have a very different understanding of knowledge and how it can be generated, even today it seems difficult for the representatives of each field to collaborate with the respective other field. This difficulty is caused by the missing transdisciplinary practical experience and knowledge gained while studying. With a more specific focus on design education the following four key topics emerged from the interviews:

### 4.1 New, more strategic fields of activity for designers

All the experts interviewed for this study agreed on the fact that the new importance of design in industry and business – which can also be attributed to the high popularity of the concept of design thinking – in general has a positive effect on the demand for designers as strategists. Based on this, explicit teaching of inter- and transdisciplinary approaches slowly become embedded in curricula.

What emerged was both: a new understanding of the role of designers as such by HR experts as well as new job profiles as 'translators', trainers and facilitators. One HR Manager (A1) explicitly pointed out that the demand for design thinkers, especially among SMEs in Germany is rapidly increasing and that it cannot be met by the supply of experts. According to her, the companies want to hire them in order to bring change to their organizations, their culture and ways of working, which would otherwise be stuck in their legacy methods.

Therefore, even young graduates are required to bring advanced communication and some kind of leadership skills in order to be able to perform this mediating role. “They have to inspire others to follow their approach“, said the second representative of the HR side (A2).

This implies that traditional designers who master their craft but have difficulty explaining and reflecting what they do are not suited for the task at hand. As one professor (C2) puts it: “My students now have to know how to explain their working process and their methods to their clients.“ And he continued arguing that being the translator between different stakeholders in a design project is one of the important skills that he seeks when hiring for his own design agency. This notion was seconded by a design manager (B1) who emphasized the necessity of designers being able to communicate their methods and even train non-designers to use and understand them.

“The designers' visual tools distinguish them to communicate abstract relationships for everybody within the team.” (B2)

Another professor and strategic designer (C1) used the term “actuator“ for his students. According to him, the students should not only become facilitators of creative processes, making things easier for their respective clients, but should be able to ask the right questions, even when these questions are perceived as an interruption and thus a hindrance in an otherwise smooth work process. He also sees the role of the designer to be an inspirer of change and innovation in an organization. As HR Manager A2 pointed out: “They need an understanding of the hurdles in an organization without necessarily accepting them.“ Professor D2 summarized this new role of the designer, by stating that a person “who wants to be in a leading position in the design field or wants to succeed as a freelance designer today, has to be practitioner as well as a strategist.“

Another professor (D1) happily acknowledged her impression that based on the growing interest in design thinking designers get the chance to lead the transformation. She stressed the fact that there is now an increasing number of CDOs (Chief Design Officers) even in German companies and that design is finally taking its' place at the table when strategic decisions are being made.

“The new opportunities for designers also require an additional skill set. While designers in the traditional mindset – making things beautiful – could celebrate their work as some kind of magic process, the new world demands them to explain what they are doing and also to bear accountability for their decisions.” (D2)

This goes along with an increasing interest of design students to think bigger. They have more ambitious plans, as Professor D4 explains: “The disciplinary corset of traditional offerings is too narrow for many master students. They show a growing interest in discussing and selecting the overarching societal role of design.”

## 4.2 Intangibility increases and diminishes defined authorship

One of the reasons for the organizations to involve designers into new tasks and giving them new opportunities lies in the change of how design is understood, perceived and used. While traditionally design in companies was often used for very specific tasks that involved a high degree of craftsmanship like product design or advertising, today's tasks are much broader. The design briefs that the designers are now confronted with involve much fuzzier definitions of problem solving – especially regarding the explorative task of designing innovation.

As a result, the outcomes of design become less tangible. Designing a new business model, an organizational strategy or a desirable experience is comparatively fuzzy. One professor (C2) described how his design students learn to cope with this intangibility based on future

scenarios. While they think about a certain topic they are supposed to look at it from a future perspective and then think it back towards today. Even though these students need to learn practical design skills (such as visualization, typography or illustration) the main focus of their work after school is about the general concept and the reasoning behind it, a design manager validated as well (B2).

As another design manager (B1) explained, his team of designers sometimes even gets frustrated by the fact that they are more and more becoming a training entity within their company. Because designers are evaluated and often still trained with the goal of an artifact in mind, the satisfaction that comes with their work is driven by it. The fact that you usually cannot apply for design awards based on the agenda of a nicely crafted training or co-creation session increases this feeling.

As the products of design work become less tangible the possibility of a clearly defined authorship also declines. Designers have to collaborate more with different stakeholders. A design manager told us that he couldn't work with designers „who defend their work instead of collaborating within the team“ (B1). This insight extremely shapes the way in which he recruits designers in an assessment center. They have to improvise a design solution based on an everyday challenge. The way they interact with each other then has a much higher significance for him and his team to decide for or against a candidate. The design portfolio suddenly becomes less important.

Another design manager formulated it like this: “They have to leave their ego at the doorstep.” (B2). Both criticized that the current German education system in design does not prepare the students for this kind of work. B1 explicitly criticized the universities to produce “arty designers“, who then have difficulties in and working for big corporation. The arty mindset collides with the necessities of daily tasks: “If you like to facilitate a team, you have to be patient until they came up with their own idea.” (B2)

When confronting this insight with the representation of academia a contradiction became apparent. On the one hand, some educators explicitly emphasize the intangible aspects. Professor D4 for example, claims that “educators don't qualify themselves with design awards, but with interdisciplinary projects.” C2 formulates the mantra of “Steal & Share” to his students. Since there is so much inspiration online, where students can see, but even copy great design work, he sees more value in teaching them the conceptual parts of the design process. If they copy, they have to make it explicit and share everything with their co-students.

D1 on the other hand expressed the wish to go back to the roots of design and concentrate on the formal aspects of it. Her reasoning was, that since so many people nowadays are applying designerly ways of thinking, designers should focus on their specific ‘doing’ skills.

### 4.3 Co-Creation is important but rarely taught

As all the representatives of the industry and business side agreed, the concept of co-creation and creative collaboration becomes more and more important due to the growing complexity of problems. While designers before took on a brief from a client and solved it in their studio, today they have to involve the clients much more.

As a design manager (B1) explained, his design team has the explicit role of engaging stakeholders in the design process as most projects start with collaborative workshops and continue iteratively. He explicitly hired people with a skill-set that is based on facilitation, etc., but he also insists that the newly hired designers – who don't see themselves as facilitators

or trainers – jump into the cold water by engaging with customers in these sessions and eventually even leading such sessions themselves.

From an academic perspective, all agreed that students very much like the approach of creative collaboration with co-students and people outside of the university. Professor C2 pointed out that engaging with people from the outside (such as subject matter experts, target audiences, etc.) apparently extended the students' enthusiasm for their projects.

“The master students wish for a program that focuses less on specialized one specific field. They rather seek a path to becoming a designer who can work interdisciplinary on the big picture and act as a mediator and communicator.” (D2)

As the interviewees explain, from the students' perspective all offerings in this regard are highly appreciated, but in comparison to the overall curricula they only make up a small part. As the representatives of academia explained, the current teaching methods include “design doing and classical user research” (D1, D3, D4, C1), usually based on a typical “seminary structure” (C2). Unfortunately, co-creation and facilitation skills cannot easily be practiced in this kind of set-up due to system rules and habits.

On the one hand, the emphasis in design education still lies on other things: Professor C1 said that in the master program he helped setting up, students could attend a course of “workshop-design”. But usually these skills are just a side note in the otherwise individualistic journey of each student towards his or her goal. Among all the other things the students have to do, “only two hours per week can be dedicated to learning facilitation of creative collaboration” (D1).

On the other hand, implementing teamwork and collaborative aspects into the curricula is limited by the way in which the German teaching system works. Professor D1 explained, “[...] collaboration between lecturers is not provisioned in the system. If two people give a course together, they can only count half of it as part of their teaching duty.” If they get paid per hour, they only get half the salary for a course taught together with a second lecturer. This means that collaborative teaching – which could be a live example of collaboration for the students – is not encouraged, but even punished by the incentive system in German universities. Even more difficult is the collaboration between disciplines. Often the “design disciplines are seen as the crazy ones on campus” (C1) and there is not much exchange between the departments.

#### 4.4 The need for a new leadership and a new ‘professorship’

This monodisciplinary way of education contradicts the very reason for companies to implement design thinking in their organizations and cultures. While they are looking for employees who help bridge the gap between the teams, disciplines and even entire organizations (A2, B1), the universities themselves are still far away from that goal.

This is also based in the traditional roles that are perpetuated in most parts of the industry as well as universities. While organizations are trying to become more innovative and creative, they often still stick to a classical, hierarchical model of management.

Opposed to that, a design manager (B1) described his way of managing his creative team very differently by strongly empowering his team. Instead of delegating tasks to team members based on the power of his hierarchical role, the team members can apply to the tasks and projects. The overall goal is to enable them to work creatively and to open up a space of self-determined activity and mutual trust, where employees can share their ideas, concerns and actively develop themselves. Following this ideology, he sees himself rather as



a coach who makes sure that his team is able to work and demands the same from university professors as he asks: “Why can a professor not see himself as a guide or coach rather than a source of ultimate truth?” (B1). Professor C2 answered that question during his interview: From his perspective the goal of a professor should be becoming “unnecessary” over the seminar. According to him the best moments of his job are seeing that the students having caught fire and starting to dig into the different topics by themselves.

This changed role model and teacher-student relationship is significant, because it symbolizes a huge loss of power on the teacher's side. Instead of being the ‘omniscient’ role model – the master – for the students, it requires teachers to step down from their podium and start accompanying the students in their quest for more knowledge rather than just delivering it to them pre-packaged.

“There is not one classic direction of communication from educator to student anymore. Modules that were taught head-on have failed. Formats of dialogue work, though. Only for bachelor students the traditional formats still fit, because the students are still lacking the openness and courage for a free discussion.” (D4)

From the perspective of the educator this change requires the courage to see students outgrow you as a teacher. As professor C1 put it: “I love it when the students present a solution that I personally couldn’t have come up with.” Additionally, this changing teaching model questions the current criteria to become a professor in the design field.

## 5. Conclusion and recommendations

During our research we realized that there is not one single meaning of ‘design thinking’ neither in business / industry nor in academia. Within this paper, we therefore decided not to focus on one specific definition of design thinking. Instead, we subsume the new approaches of collaborative innovation in business and industry under this title.

Nevertheless, in addition to new formats of knowledge acquisition, the development of capacity building also plays an important role. Students need to be able to recognize and freely use their creativity and innovation ability, their awareness of global connections and the ability of networked thinking. Besides this they need to master not only their practical craftsmanship, but need to become experts in communication and collaboration (Karjalainen, Korja & Salimäki, 2009; P21, 2016).

Therefore we want to suggest a new model, which includes skills in the traditional craft of design as well as the required collaboration competences. The model is composed of four categories: design doing, user & design research, co-creation and facilitation. All of them build on top of each other. The two axes explain the degree of intangibility (y -axis) on the one hand and the involvement of others (x-axis) on the other.

Additionally the model points out that the proficiency in design methods and theory is related to the capacity of facilitating collaboration (see also cf. 4.2). The yellow marked part shows the didactic focus, which traditionally was represented in the German design education. The ‘new’ focus – marked in blue – is still rarely represented.

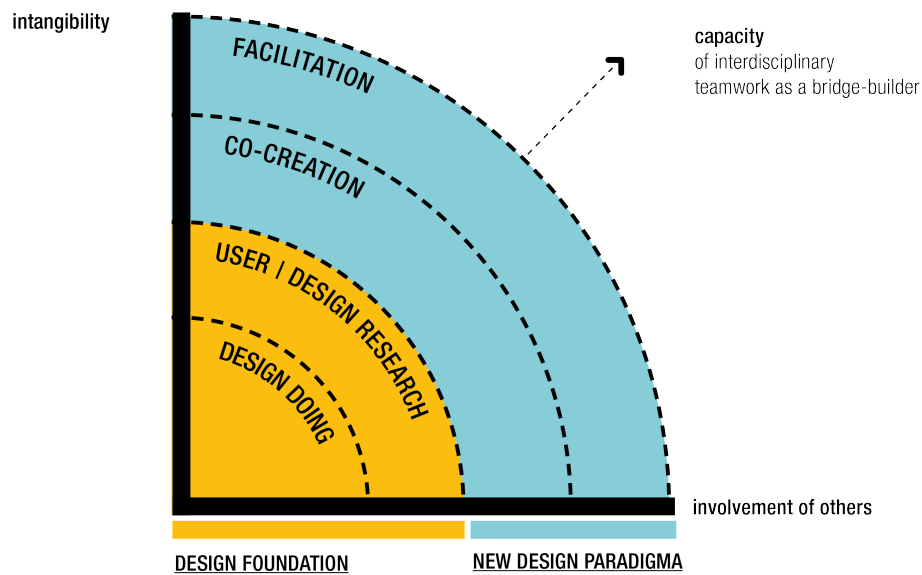


Figure 1. New Design Paradigm Model by the authors.

## 5.1 Recommendations of action

Based on the key findings described above, we would recommend the following actions:

- Strengthen especially the collaborative aspect of design in the curricula as the correlating skills are highly requested in business, industry and the social sector. This can be done through regular team projects, special collaboration projects with other disciplines and institutions and dedicated classes on co-creation and facilitation.
- Teach the students about the design of intangible outcomes in order to avoid ego-designers and to strengthen their analytical abilities. This will enable the students to become better at explaining their work and thus lead others in creative processes. This can be done through dedicated classes on collaboration experience design. Additionally the evaluation system of the students' work could be adjusted towards recognizing intangible achievements.
- Find ways to hack the educational (incentive) system in order to establish collaboration opportunities among professors (even from different disciplines). One idea could be to set-up inter-organizational projects between different universities/institutes. This way both lecturers get paid for their work by their own institution, both groups of students have their own learning experience and in addition they get to know (interdisciplinary) team work.
- Start tandem projects with professors and industry experts as an opportunity to understand design thinking, its holistic approach and how it is embedded in the industry. The amount of work that goes into acquiring these projects should not be underestimated, though. Faculty and university staff should be able and incentivized to establish industry connections.

## 5.2 Further research questions

Surely within the limits of this paper, we have been able to just give first findings summarized in the proposed model above. Based on these findings, additional desiderata for research can be pointed out:

- How might we establish better links between learning, teaching and adapting of the new design understanding?
- How can we measure the teaching and learning in collaborative approaches?
- What new forms of appreciation and professional recognition are needed for collaborative design efforts?

The discourse about design education has been dominated by the classical understanding of design before management has more and more taken it into focus (Hassi & Laakso, 2011). Now the new understanding slowly moves into design education as well. Even post-graduate management programs are more and more seen as learning laboratories. Since in design education project-based learning has always been the dominant teaching method, design could be seen as a pioneer and educators from other fields can draw inspiration from designers (Raff & Melles, 2012).

“[...] higher education must continue to model itself as a laboratory of design thinking, a ‘collaborateur’ [...]”. (Hollern, 2016, p.176)

We therefore also would like to encourage both sides – representatives of business and academia – to deal with the current uncertainty in interdisciplinary collaboration by intensifying the dialogue between research and practice.

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