

43.2 Eliciting Empathy Embedded in Design Conversations: Empathic Perspective-Taking of Design Teachers Towards Design Students, Users and Materials

Pelin Efiltili  and **Koray Gelmez** 

Abstract

This paper aims to interrogate the design studio conversations between teachers and students in order to explore the indicators regarding empathy. To investigate design conversations occurring between design teachers and design students, participant observation studies were conducted at two universities in Finland and Turkey. As an empathic indicator, we addressed (1) how design teachers take the perspective of other agencies and (2) what deliveries are utilised for empathic perspective-taking. It was understood that design teachers identify themselves with both human and non-human agencies as design students, users and materials. Moreover, deliveries leading to the identification of design teachers with these agencies included both discursive and performative means.

Keywords

empathy, design conversation, design education, design teacher, perspective-taking

Introduction

In the field of design, empathy penetrates research, communication and ideation processes regarding user research and design practice (Kouprie & Sleeswijk Visser 2009; Mattelmäki *et al.* 2014). In user-centred design, designers aim to

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](#) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

understand users' realities deeply to gain insight into their experiences, needs and desires in order to integrate contextual and affective factors into design (Kouprie & Sleeswijk Visser 2009; Heylighen & Dong 2019). To inform designers about the experiences of users, particular tools and techniques have been developed (Fulton Suri 2003). In this respect, designers can establish empathy through direct contact with users by observing and participating in their activities; through communication tools that convey the users' stories via videos and personas and through imagination by simulating the users' conditions like role-playing (Kouprie & Sleeswijk Visser 2009; van Rijn *et al.* 2011).

Empathy in design is closely associated with perspective-taking, which is the ability to take others' points of view, to imagine their emotions, thoughts and feelings (Devecchi & Guerrini 2017). As an intentional act of perceiving *sui generis* (Stein 1989), designers 'imagine what it would be like for themselves to be (in the position of) the user' (Kouprie & Sleeswijk Visser 2009, p. 438) through a range of activities of projection, internalisation, objectification, identification and imagination (Thompson 2005; Tellez Bohorquez 2017). Thus, empathy is described through the metaphors of taking a walk in the other person's shoes (Eymard *et al.* 2010; Walton 2015), feeling with another person and imaginatively projecting oneself into the perspective of others (Koskinen & Battarbee 2003), stepping in and out of the lives of users (Kouprie & Sleeswijk Visser 2009), coupling voluntary with the living bodies (Thompson 2005), or a leap of imagination into someone else's head (Walton 2015).

As understood from the literature, empathy relies on a special kind of imaginative experience (Fulton Suri 2003; Walton 2015) including both self- and other-oriented perspectives. While the self-oriented perspective is based on 'how one would think and feel in another's situation,' other-oriented perspective is based on 'imagining how another feels or thinks' (Batson *et al.* 1997; Batson 2009; Hess & Fila 2016). These are the interchangeable and intertwined forms of perspective-taking (Batson *et al.* 1997).

Empathy in design education

Within the context of design education, empathy transforms the learning processes of students. It is mostly addressed and examined through student–user interactions (Efilti & Gelmez 2023a; Shin & Thomas 2015; Şenyiğit & Yılmaz 2020; Vaes *et al.* 2011). Establishing empathy with users is quite essential for design students to understand their realities and inspire design practice to develop products, services, systems and experiences to meet human needs and aspirations (Tellez Bohorquez 2017). Thus, design education focuses on developing students' empathic understanding towards users (Altay 2014), cultivating their sensitivities and awareness (Şenyiğit & Yılmaz 2020) and promoting their empathic abilities and tendencies for intersubjectivity by equipping them with particular tools, methods and approaches (Koskinen & Battarbee 2003). Therefore, empathy has crucial impacts on design processes, approaches and outcomes of students (Mattelmäki *et al.* 2014), emotional growth and thinking skills (Carlson & Dobson 2020), collaborations and interpersonal interactions (Altay 2014; López-León & Gómez-Valdez 2018; Şenyiğit & Yılmaz 2020) as well as identity development (Tracey & Baaki 2022). Moreover, empathic interaction and understanding between design students and teachers provide learners' engagement in design courses and trigger their

commitment to learning (Shin & Thomas 2015). On the other hand, non-empathic experiences in design education may increase the stress level and decrease the motivation of students, affecting students' engagement in learning and class performances (Meyers *et al.* 2019; Zhang 2022).

As an essential deliverable of design pedagogy, empathy also steers design teaching activities (Efilti & Gelmez 2023b). It shapes the pedagogical interventions of design teachers and cultivates their professional identities (Efilti & Gelmez 2023b). As a central component of the social-emotional competence of a design teacher, empathy plays a crucial role in the effectiveness of teaching and the quality of teacher–student communication in particular (Aldrup *et al.* 2022). Alongside equipping design students and teachers for professional life, empathy also provides a blueprint for a more inclusive learning environment (Carlson & Dobson 2020) against unequal power relations in education (Freire 1970; Webster 2006). A more empathic pedagogy for art and design education helps design teachers to enhance learning activities and tools, curriculum (Jatin 2021), dialogue and critique in the studio (Tellez Bohorquez 2017) considering the educational needs of diversified learners (Cooper 2002). Moreover, empathic approaches regarding design teaching can lead to the establishment of empathic teacher–student interactions in design education (López-León & Gómez-Valdez 2018). Therefore, in the quest for empathic design education, explication and embodiment of empathy in design education can help to develop new ways of teaching.

Training empathic teachers promotes students' learning processes and nurtures professional performances intertwined with the complexity of the concept of empathy composed of cognitive, emotional, behavioural and moral components (López-León & Gómez-Valdez 2018). Thus, exploring teacher empathy in design pedagogy is crucial for the development of both learning and teaching activities. However, there are a limited number of studies regarding this. In this study, we aim to bridge this gap in the literature. This current study focuses on design conversation, which is the key interaction between design teacher and student within the context of design studio courses. To understand empathy inherent to design education, the indicators are traced in the content of teachers' design conversations considering how design teachers take the perspectives of others and what deliveries are utilised. The emergence of these pinpoints will help us to understand and conceptualise the empathic approaches of design teachers.

Eliciting empathy embedded in design conversations

Design conversations, which are the heart of a design studio course, are 'the instances of one-on-one dialogue between a teacher and a student while presenting, reviewing, or working on a design project' (Ferreira 2018, p. 16). Design conversations can be carried out in different ways and forms, such as one-to-one critique or individual desk crit, group critiques, informal dialogues or formal reviews in design juries (Uluoglu 2000; Goldschmidt *et al.* 2010). They are essential pedagogical venues (Webster 2006; Oh *et al.* 2013) for design learning and teaching as well as distinctive mechanisms as a communicative activity providing identity construction in design education (Uluoglu 2000; Adams *et al.* 2015). Design conversations between design teachers and students are especially varied and privatised regarding the content of the class, specific communication styles, strategies and tools developed intentionally or unintentionally, even personal characteristics,

psychological factors and pedagogical roles (Efilti, P. & Gelmez 2021). In this respect, the teaching styles and approaches of design teachers are the factors regulating these interactions in the design studio courses.

We have considered that design conversations based on design critiques and juries are prosocial behaviours and interactions in design studio courses particularly, which include the approaches consisting of reactions and responses to foster and develop empathy. Empathy embedded in design conversations is composed of cognitive, affective, behavioural and moral components. Between design teachers and students, these ensure the development of mutual understanding, emotional congruence and somatic movements enabling the constant rediscovery of the material through bodily knowing and being with the world (Skrzypczak 2021). These enable teachers and students to adopt the perspective of each other, meet in the same cognitive state, understand their thoughts and feelings and respond accordingly regarding design representations as well as carry the experiences of different stakeholders into the studio environment through simulations and imagination.

In this study, we observed several empathic indicators in design conversations. These empathic indicators, where design teachers identify themselves with another agency, in a word, project themselves into another position and identify themselves with the others, were pursued regarding our sub-questions:

1. How do design teachers *take the perspectives of other agencies* in design conversations?
2. What *delivery styles* do design teachers use during design conversations to invoke empathic perspective-taking?

Data collection from design studio courses

Adopting an ethnographic observational technique, participant observation enables 'perceiving the activities and interrelationships of people in the field setting through the five senses of the researcher' (Angrosino 2007, p. 37). Within the context of design education, ethnography has a significant advantage in investigating the underlying structure of the practices of design studio courses (Shaffer 2003). In this study, we centre upon the embodied features of empathy in the practice of design conversations. In particular, we observed design teachers and analysed the content of their design conversations related to the research questions.

To reveal the empathy embedded in design conversations, we conducted participant observation studies in design studio courses at different levels and universities. As a method, participant observation enables field researchers to immerse in and engage with the design studio interactions. Researchers 'pay attention to incidents, feeling tones, impressions, and interactions, both verbal and nonverbal' by making decisions about the significance of the events, how to observe and what to collect. Then, they turn their experiences and observations into written texts, called field notes, which are the descriptions of what has been observed. Field notes help to elaborate and contextualise the research setting and provide rich information about the research content (Emerson *et al.* 2011).

In this study, the first author participated in different design studio courses at two universities in Finland and Turkey. Even though the researcher conducted observation studies in both, she took different roles according to the research setting (Table 1).

TABLE 1 The transparency of the method

	University in Finland	University in Turkey
Department research conducted	Department of Design	Department of Industrial Design
Kind of method	Participant observation	Participant observation
Research setting	Ateliers	Studios and lecture hall
Position of the researcher	Researcher, Observer	Research assistant, Observer, Juror
	Outsider	Insider
Conversations observed	Among design instructors, workshop masters, bachelor and master students	Among design instructors, jurors, research assistants, bachelor students
Studio courses observed	Two different design studio courses	Four different design studio courses
Class participated	Four classes and 1 jury in total	17 classes and four juries in total
Teachers observed	One instructor, one workshop master	Eight instructors, five research assistants
Data collection	Field notes (during or after the course)	Field notes (during or after the course)

In Finland, the researcher participated in design ateliers as a visitor. She was introduced as a researcher by the instructor of the course to the bachelor and master-level design studio communities, so she was able to position herself as an observer and outsider in the eyes of those individuals. Interactions between teachers and students were established in English and mostly in Finnish at this university. The researcher is a person who speaks Turkish and English and can interact in these languages but does not speak Finnish. Although she could understand the design critiques and interactions in English, she did not understand the contents of the interactions conducted in Finnish. At this point, she could only observe the body language of people. The researcher participated in two different design studio courses including the same instructor and workshop master. Four classes in different settings and one jury session, which usually lasted all day, were observed.

In Turkey, the researcher participated in bachelor-level design studio courses as a research assistant. She was more like an instructor, who was actively giving design critiques, so could be an insider in the full sense. She conducted participant observations during one semester. Turkish interactions were established between the teachers and students at this university. The researcher participated in four different design studio courses including eight teachers and five research assistants. In total, 17 classes and four juries were observed.

In these settings, the formats of design conversations and interactions between design teachers and students were generally one-to-one and group critiques. However, the themes of design studio courses varied regarding different grade levels from material-based design to experience design, such as lighting design with cast concrete, desktop unit design with linear, planar and solid materials, workplace design for shoe shiners, food serving stand for traditional street

In both settings, the researcher took field notes during or after the classes and juries regarding the research purposes. Deliberately, in studio interactions, which include daily dialogues, other than the conversations of design critiques and juries were eliminated during the data collection process. While participating in the field and attending to ongoing interactions, it was not always possible to take descriptive and long notes in studios, but allowed to record 'jottings,' which are 'brief written records of events and impressions captured in keywords and phrases' and enable to 'jog the memory later ... to recall the details of significant actions and to construct evocative descriptions of the scene' (Emerson *et al.* 2011). Instead of notebooks, the researcher jotted on her mobile phone considering its convenience and unobtrusiveness according to the day, date and observation period. The jottings were recorded in Turkish and revisited immediately after the classes were over (Figure 1a).

Data analysis

We conducted an ethnographic content analysis (Altheide 1987) for all our observation field notes. As a way of reflexive analysis of the collected data, analysis of ethnographic content is based on a constant discovery and comparison in the

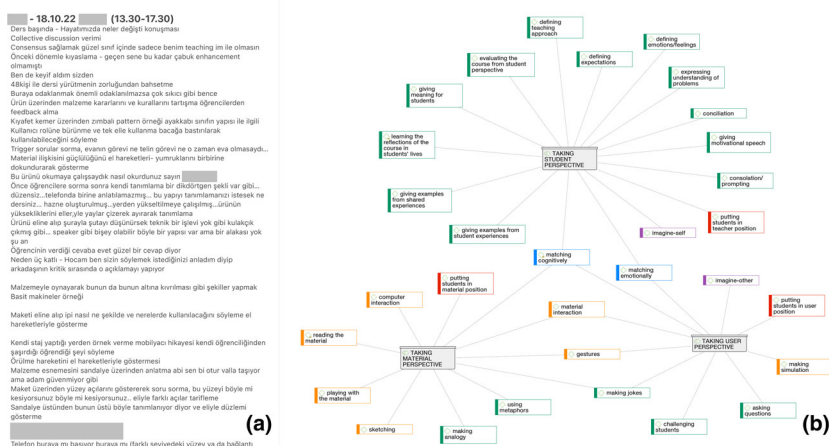


FIGURE 1
(a) An Example of Jotting (in Turkish). (b) An Example of Data Coding from Atlasti Software.

qualitative data to delineate conceptual categories and narrative descriptions regarding research objectives (Altheide 1987). Instead of frequency reading, qualitative content analysis helps us to manifest the contextual meaning of the data through the systematic classification process of coding and identifying themes or patterns (Hsieh & Shannon 2005) through a combination of concept-driven and data-driven strategies (Schreier 2013). We utilised Atlas.ti software to code our data, which has been structured through the deep examination and interpretation of the researcher.

The data were collected purposively. This means that the researcher collected only relevant data by eliminating the insignificant data instantly. By constant reading of the field notes, data segments containing a meaningful description regarding the field of inquiry were determined. In total, 290 data segments have been identified for further coding process. These have been associated with 32 codes 525 times. Codes have been grouped under broader themes regarding two empathic indicators traced in design conversations. Three themes emerged around the empathic perspective-taking of design teachers, which are taking student, user and material perspectives (Figure 1b). Moreover, there appear two themes around empathic deliveries such as discursive and performative.

Findings

In this study, we explored two main pinpoints, which are (1) the empathic perspective-taking of design teachers towards different agencies in design conversations¹ and (2) the deliveries utilised by design teachers to invoke perspective-taking.

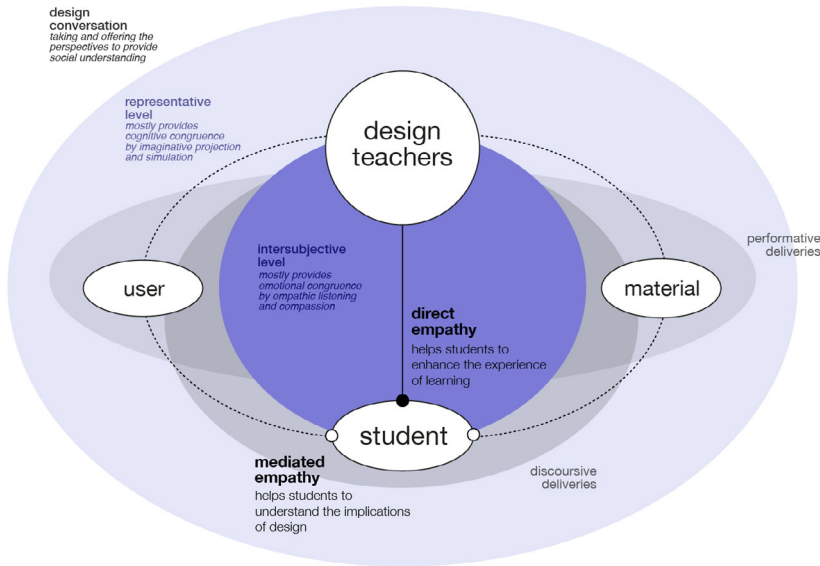
Empathic perspective-taking of design teachers

Based on data analysis, we found that design teachers take the perspectives of both human and non-human. Mainly, they identify themselves with design students, users and materials. Although cultivating empathic interactions and understanding on different levels and having distinctive roles in design learning, taking the perspective of these agencies are the strategies embedded in design conversations to ensure cognitive and affective attunement regarding design practice (Figure 2).

During teacher–student interactions on an intersubjective level, design teachers can take the perspectives of design students and can establish empathy directly during design conversations. In addition to this, design conversations have intrinsic components of design education at the third dimension, which are the user and material interactions occurring on a representative level. Taking perspectives of the users and materials through particular representations provides congruence between teachers and students. It is also addressed as a mediated way of establishing empathy among these agencies.

Moreover, design teachers are not solely taking the perspectives of these agencies but also demonstrating how and in what ways these empathic interactions

¹Inspired by the illustrations used in the work of Ilgaz (2009), the findings are also visualised by a visual artist based on the field notes of the researcher to better communicate the research setting.) Visual artist Nazlıcan Cevahir owns the copyrights of this figure, produced for this publication.

**FIGURE 2**

Empathic Perspective-Taking of Design Teachers and Deliveries.

can be established and offering them to students as a learning tool inherent to design education.

Taking the perspective of design students

On an intersubjective level, design teachers and students have verbal and corporeal contact during design conversations, which is based on an interactive process where both subjects are engaged. A design student shares the research outcomes, user-related findings, ideas and drawings and receives feedback. Deep listening, exchanging of ideas, criticising and questioning are the significant communication forms of this social interaction enabling them to understand each other in decisions specific to the design process.

During design conversations, empathic listening allows design teachers to attune themselves to design students. Empathic listening, which represents the capacity to directly sense and connect with another subject, allows one to 'see how the world unfolds through someone else's eyes' (Scharmer 2016). By exploring nuance, emotions and feelings related to students' learning experiences, this perspective-taking level mostly intertwined with compassion and caring cultivates the emotional congruence of design teachers with students, which refers to direct empathy.

Our analysis shows that teachers usually imagine themselves in students' place (imagine-self). This projection of design teachers mostly occurs as a sympathetic reaction to show a sense of 'I understand you.' Therefore, particular statements can be used by teachers to show that the problems, difficulties and challenges the students face are recognised. They are followed by consoling, conciliation, normalising the problematic encounters and giving motivational speeches regarding design practices that prepare students for upcoming events. Thus, this empathic interaction has effects on the enhancement of the learning experiences of design students. To illustrate;

(The teacher talks about material limitations as) it is very normal for you to be offended when you are a student because there is only one material and glue is forbidden.

In addition, design teachers may explicitly transpose themselves into design students' point of view via the projection of 'if I were you.' This shows how something could make sense if someone more experienced was in their place. To be better understood by them, design teachers may evaluate the course on behalf of students by taking a student's voice or transferring previous semester students' experiences by positioning them as peers. They may also make interpretations for students by giving examples from their own studentship, internship and work experiences as a former student, experienced graduate, and designer (Figure 3).

(The teacher says that) if I were you, I would blame the teacher...

(The teacher says with the inner voice of the student) it's enough, I've done everything now, I won't do it anymore...

Design teachers may not only take the perspectives of students but also help them to identify themselves with their peers, users and materials as a teaching strategy. In addition, they may also aim to help students identify with themselves by defining their concerns, and expectations regarding students' design processes and practices, and explaining to students what they want to achieve with a particular teaching method.

(The teacher says that) ... I'm trying to make you question whether we can look at this process from a more abstract point of view.

(From field note – 18.10.22/Second-year Industrial Design Studio [13.30–17.30]) He tells the story of furniture production by giving an example from his own internship, putting himself in the place of the student and emphasising the places where learning will take place.

Taking the perspective of users

In the user-centred design approach, in order to design the product, service, interface and system, design students conduct research to understand how users interact with that artefact, how they perceive and make sense of it (Krippendorff 2005) and what their problems, concerns, dreams and wishes are. These research outcomes provide students with meaningful insights and creative ideas. Within the design studio course, the students share these outcomes, insights and ideas with design teachers during design conversations in a representative manner. The format of these representations can be written, oral, visual or audio regarding the findings of user research, two and three-dimensional idea exercises such as storyboards, sketches, prototypes, etc. We understand that design teachers can imaginatively project themselves in a user position through the representations, narrations, presentations and visualisations that students bring into the studio course as well as through their previous experiences regarding this user group. This role helps them to interpret the students' works from the viewpoint of this user (Oh *et al.* 2013). It is a mediated way of establishing empathy

**FIGURE 3**

The Illustration Represents a Design Teacher Empathising with a Student by Recalling Her Own Studentship Experiences (Digital drawing by visual artist Nazlıcan Cevahir, April 2023).

with design students through particular representations and this allows them to guide the students and the students' design practices with this understanding.

(The teacher says that) I look at it (the designed product) as a user, not as a designer or educator.

Teachers can imagine how users think, feel and utilise the designed artefacts of design students (imagine-other) by putting themselves into user positions cognitively and emotionally. They use artefacts and make narratives about how they feel or think 'as if' they were users themselves (Figure 4). Here, they not only facilitate the representations but also reflect the implied identity of the user in their minds, which is learned from previous experiences or interactions, and also speculate the users' behaviours by establishing empathy with them. It is a significant way to simulate and show students how a user gets to interact with their designs. In this context, the design teacher adopts a performative attitude. In this performance, the teacher intends to read the affordances of the designed artefact, in a word making sense of it from the eyes of the user. This way of understanding design also aims to give meaning to students through gestures.

(The teacher is narrating while using the product) I just pull the ice cream from there and I say it's like the ice cream needs to be served in a cold area ... then it has to have a place of its own ... I guess there won't be a cream filling when I'm going to do something like that.



FIGURE 4

The Illustration Represents a Design Teacher Using a Student's Design Work as a User. In this Way, She Puts Herself into a User Position in a Design Studio Environment Through a Student Representation (Digital drawing by visual artist Nazlıcan Cevahir, April 2023). Visual artist Nazlıcan Cevahir owns the copyrights of this figure, produced for this publication.

(The teacher without saying anything) sits on the chair, he tries different leg positions and shows the position of his leg and where his back rests in the classroom environment, he moves on the chair and shows the different sitting styles to the class.

(The teacher says that) the user puts it there (showing on the product), would you say you wouldn't put it there, it's just there to show off the structure ... I put it, for example...

This performance is accompanied by inquiring about the underlying justification of the students' decision-making by asking them questions and challenging the designed artefact. They animate the difficulties experienced by the users, the situations they have fallen into and how the designed artefacts can be used differently than intended. During these performances, teachers mostly make jokes about the failures they faced to ensure mutual understanding with design students.

(The teacher says with the inner voice of the user) I don't know the structure, I did this at home, my child came and couldn't use it ... (showing on the product) then she came and threw it on my head...

We can highlight that being able to take the perspectives of different user groups and stakeholders is related to the similarity of the design teachers with these communities. This identification can also vary according to the subject of the design project, teachers' experiences, ages, personal traits, etc.

Taking the perspective of materials

Beyond the anthropocentric understanding of empathy that centres its value solely on human connectedness, non-living agencies call upon empathetic behaviours through the lens of agential realism. This relies on the phenomenon of the ontological inseparability of interacting agentic capacities in which non-human animals, inanimate things and humans (Sinuefield-Kangas *et al.* 2022). In this study, we consider that design teachers make imaginative projections themselves to the educational materials, which are brought or produced in design studio courses, such as two and three-dimensional supplies, mock-ups and prototypes. The progress of education through material interaction is an inherent feature of architecture and design education. In this study, we understand that teachers make identification with the materials regarding their forms, properties, behaviours and responses, on a representative level. As opposed to attributing personal characteristics to material, it is an approach to materialising themselves.

Design teachers mostly use gestures and facial expressions, which embody their attitudes and decisions through body language, while materialising themselves. In architectural design studios, these are embraced as 'architectural ways' of communication between design teachers and students (Mewburn 2009). Gestures considered 'invisible drawing actions' are significant communication modalities in design conversations that reduce the communicative burden of teachers' speech (Oh *et al.* 2013; Larsson & Stolpe 2022). Including symbolic functions, gestures convey meaning and appeal to the cognitive state of the addressee (Visser 2009). Serving as a bodily representation of the source domain of a metaphor, gestures are 'cognitive vehicles for connecting experience and abstract phenomenon' (Larsson & Stolpe 2022). They are not merely used for referencing or indexing to an object, but as a means of facilitating intersubjectivity in communication (Oh *et al.* 2013, p. 311).

Finger, hand and body movements help teachers project themselves into material positions and embody the speech on behalf of the material (Figure 5). In situations when it is difficult to verbalise, bodily movements occur in a way that reflects the behaviour and properties of the material. For instance, a teacher explains the height of the material by lifting his body with the shoulders and arms or describes the placement of the product by describing planes or creating forms with hand gestures.

(The teacher says that) there is a structure that actually provides a backbone structure, which gets narrower and then changes (the teacher shows it by touching the product with his finger)...

(From field note – 11.10.22/Second-year Design Studio [13.30–17.30]) The teacher shows the form of the material with his own body: he shows the material to be upright by straightening his body ... he shows how the product will stand at an angle by tilting his body forward and to the side ... he describes how the material can be folded and bent with his arm, hand, and wrist movements.

**FIGURE 5**

The Illustration Represents a Design Teacher Materialising Himself Regarding the Students' Model and Performing its Features Through Bodily Movements (Digital drawing by visual artist Nazlıcan Cevahir, April 2023). Visual artist Nazlıcan Cevahir owns the copyrights of this figure, produced for this publication.

While interacting and playing with the materials, teachers can narrate how they are making sense of them in order to show and describe to students how to analyse them designerly. Analysing the material includes detecting and interpreting the signs, which rely on making analogies between material combinations, connection points, form-giving and the use of colour with examples from daily life. Moreover, we understand that teachers may prefer metaphors to clarify the material interactions.

(The teacher says that) we can see the harmony and compatibility of these materials as a good marriage...

(The teacher asks that) could this material combination be like cooking, like making soup? ... If there are 4 ingredients, it starts with the first ingredient (material), then the second comes, then three and four...

Empathic deliveries used for perspective-taking

Design conversations consist of intertwined components of gesture, speech and thought that often occur together (Davis 2016). Analysis of the data shows that design teachers have developed different deliveries in design conversations to take the perspectives of other agencies. These deliveries can be clustered and discussed discursively and performatively. While discursive deliveries are based on verbal, perceptual and emotional indicators, performative deliveries are based on physical, visual and bodily indicators. Both serve the purpose of imaginative projection of design teachers towards human and non-human agencies; design students, users and materials.

Discursive deliveries

Discursive deliveries involve the particular attitudes of design teachers in consolation, conciliation, and prompting students. To relieve students' emotional discomfort, teachers can motivate them by making jokes regarding problematic situations in design practice. Teachers' identification with students is significantly based on the connections they make with their own lives. They use examples from daily realities, their previous studentship and professional experiences, and also shared experiences with students. Design suggestions are made while putting themselves in a student position. On behalf of the students, design teachers can evaluate the course and make sense of educational components.

They also identify design students with their peers to develop cognitive and emotional congruence. Peer experiences and design practices, especially how their design processes proceed and how they encounter and overcome the design problems, are transferred to make peer projection. To enable students to identify themselves with the user, design teachers can ask challenging questions regarding the usage and affordance of designed artefacts. We can also say that when students identify themselves with the user, their empathic awareness, cognitive development and emotional intelligence also increase. To place students in a teacher position, design teachers can explain their teaching approaches step by step, specify their expectations regarding the course and define their wishes regarding the design practice and outcome. Moreover, to be attuned to them emotionally, it is understood that teachers talk about their feelings about the students' design processes, outputs, approaches, etc.

Performative deliveries

Performative means are based on enactments performed in a design studio environment. Gestures and mimics of design teachers are the key representations of these performances that usually emerge while taking the perspectives of users and materials. As a significant element of design conversation, gestures have clear differences in the types and variety regarding the stages of the design activity. We can say that design teachers mostly perform operational gestures, which explain the function and the use of a product, and deictic gestures, which refer to pointing at sketches, props and notes (Davis 2016) while identifying themselves with the users. On the other hand, when they identify themselves with the materials, iconic and mechanistic gestures are frequently used, which refer to the formal and spatial representations involving the size, volume and scale of the products (Davis 2016).

To develop a kind of simulation in a studio environment, design teachers animate the users while making sense of the prototypes and drawings of the students. They take on the behaviour, thought, and emotional state of the user. Moreover, they embrace the features of materials considering their qualities, behaviours, forms, etc. Design teachers speak through materials while interacting with them. By playing with the materials, the features are decoded and demonstrated. The aim is to explore the materials and give meaning to students.

Conclusion

This study centred upon comprehending empathy embedded in design conversations between design teachers and students within the context of design studio

courses. Particular empathic indicators embodied in conversations were determined and pursued to explore (1) how design teachers took the perspectives of different agencies and (2) what deliveries were utilised for perspective-taking. By adopting an ethnographic perspective, participant observation studies were conducted in design studio courses at two universities and field notes were recorded from the conversations in design classes and juries. Data analysis showed that design teachers take the perspectives of human and non-human agencies, such as design students, users and materials.

By internalising student perspectives, design teachers can establish empathy with students directly and comprehend their emotional states through verbal deliveries. On the other hand, empathic interactions between teachers and students can be developed mediately on the intrinsic components of design education, such as users and materials. Through the representations that design students bring in the studio environment, design teachers identify themselves with the users and materials to match cognitively with students. While the former has particular effects on enhancing the learning experiences of design students, the latter helps students to observe and understand the implications of design.

When we look at the delivery styles design teachers invoke for perspective-taking, they are grouped as discursive deliveries including verbal, perceptual and emotional indicators as well as performative deliveries including physical, visual and bodily indicators. Although this study does not aim to make a comparison between the two universities, we can say that due to the role of the researcher, the data from the university in Finland is mostly helpful in understanding performative deliveries and the university in Turkey is discursive deliveries.

Yet, this is a limited study based on observations conducted at two universities and involving situated teacher–student interactions. This research can be expanded and elaborated by addressing different institutions that provide design, art, architecture, and technology education. Moreover, what kind of meanings or impacts can be created for students through the perspective-taking of design teachers is not included in the scope of this study. How the learning experiences and design practices of design students are shaped accordingly can be addressed in further studies.

Although this study primarily contributes to design pedagogy, we think that it can also be informative for the fields of educational studies and teacher education, as well as to studies related to empathy in the field of design research. We believe that exploring this implicit nature of design conversation will be a preliminary step to frame the empathic approaches of design teachers. Being aware of these perspective changes has an important place in improving the interaction and communication of design teachers with students in order to develop their pedagogical roles. This also helps design institutions to make pedagogical developments for the needs of students and to develop novel educational tools to fulfil the deficient aspects of teaching practice. Through following field studies, empathic interactions regarding design conversation can also be explored in detail by design education researchers, so both theoretical and practical models can also be improved.

Acknowledgements

This study (Project ID: MDK-2022-44057) was supported by the Scientific Research Projects Department of Istanbul Technical University. This paper is part of an ongoing Ph.D. thesis conducted by the first author at Istanbul Technical University. We would like to thank

Assoc. Prof. Dr. Tuuli Mattelmäki, Assoc. Prof. Dr. Fatma Korkut and Assist. Prof. Dr. Özge Çelikoğlu for their valuable contribution. We also would like to thank Nazlıcan Cevahir for her visualizations.

Conflict of interest

The authors declare that they have no conflict of interest.

Pelin Efilti received her BSc (2015) and MSc (2019) in Industrial Product Design from Istanbul Technical University (ITU). Currently, Efilti is a PhD candidate and a Research Assistant in the Department of Industrial Design at Istanbul Technical University (ITU). Her research interests include participatory design, design education and pedagogy.

Koray Gelmez, is currently working as Associate Professor in the Department of Industrial Design at Istanbul Technical University (ITU), Turkey. He received his BSc from the Department of Industrial Design at Middle East Technical University (METU); and his MSc and PhD from the Industrial Product Design Programme at ITU. His research interests include design education, design pedagogy, learning, reflective writing and graphic design.

References

- Adams, R. S., Forin, T., Chua, M. & Raddcliffe, D. (2015) Making visible the "how" and "what" of design teaching, in R. S. Adams & J. A. Siddiqui [Eds] *Analyzing design review conversations*. West Lafayette, IN: Purdue University Press, pp. 431–56.
- Aldrup, K., Carstensen, B. & Klusmann, U. (2022) Is empathy the key to effective teaching? A systematic review of its association with teacher-student interactions and student outcomes, *Educational Psychology Review*, Vol. 34, pp. 1177–216.
- Altay, B. (2014) User-centered design through learner-centered instruction, *Teaching in Higher Education*, Vol. 19, No. 2, pp. 138–55.
- Altheide, D. L. (1987) Ethnographic content analysis, *Qualitative Sociology*, Vol. 10, No. 1, pp. 65–77.
- Angrosino, M. (2007) *Doing ethnographic and observational research*. London: Sage Publications.
- Batson, C. D. (2009) These things called empathy: eight related but distinct phenomena, in J. Decety & W. Ickes [Eds] *The social neuroscience of empathy*. Cambridge: MIT Press, pp. 3–15.
- Batson, C. D., Early, S. & Salvarani, G. (1997) Perspective taking: imagining how another feels versus imaging how you would feel, *Personality and Social Psychology Bulletin*, Vol. 23, No. 7, pp. 751–8.
- Carlson, J. D. & Dobson, T. (2020) Fostering empathy through an inclusive pedagogy for career creatives, *International Journal of Art & Design Education*, Vol. 39, No. 2, pp. 430–44.
- Cooper, B. (2002) *Teachers as moral models? The role of empathy in teacher/pupil relationships* (Unpublished PhD thesis). Leeds Metropolitan University.
- Davis, B. (2016) Gesture, creativity and design, in J. Linsey, M. Yang & Y. Nagai [Eds] *Proceedings of the fourth international conference on design creativity*. Atlanta, GA: Georgia Institute of Technology.
- Devecchi, A. & Guerrini, L. (2017) Empathy and design. A new perspective, *The Design Journal*, Vol. 20, No. Suppl 1, pp. S4357–64.

- Efilti, P. & Gelmez, K.** (2021) Celebrating the variety, fighting the confusion: an integrative review of the design teacher's pedagogical roles, *Art, Design & Communication in Higher Education*, Vol. 20, No. 2, pp. 243–87.
- Efilti, P. & Gelmez, K.** (2023a) A deep dive into the impacts of empathy on design learning and teaching, *International Journal of Technology and Design Education*. Vol. 34, pp. 809–52.
- Efilti, P. & Gelmez, K.** (2023b) Mapping three dimensions of empathy in design education: educational interventions, aspects and contexts, *Art, Design & Communication in Higher Education*, Vol. 22, No. 1, pp. 121–48.
- Emerson, R. M., Fretz, R. I. & Shaw, L. L.** (2011) *Writing ethnographic fieldnotes*. Chicago: University of Chicago Press.
- Eymard, A. S., Crawford, B. D. & Keller, T. M.** (2010) "Take a walk in my shoes": nursing students take a walk in older adults' shoes to increase knowledge and empathy, *Geriatric Nursing*, Vol. 31, pp. 137–41.
- Ferreira, J.** (2018) *Design conversations: an exploratory study of teacher and student interaction in the design studio*. Delft: Delft University of Technology.
- Freire, P.** (1970) *Pedagogy of the oppressed*. New York: Continuum.
- Fulton Suri, J.** (2003) The experience evolution: developments in design practice, *The Design Journal*, Vol. 6, No. 2, pp. 39–48.
- Goldschmidt, G., Hochman, H. & Dafni, I.** (2010) The design studio "Crit": teacher-student communication, *Artificial Intelligence for Engineering Design, Analysis and Manufacturing*, Vol. 24, No. 3, pp. 285–302.
- Hess, J. L. & Fila, N. D.** (2016) The manifestation of empathy within design: findings from a service-learning course, *CoDesign*, Vol. 12, No. 1-2, pp. 93–111.
- Heylighen, A. & Dong, A.** (2019) To empathise or not to empathise? Empathy and its limits in design, *Design Studies*, Vol. 65, pp. 107–24.
- Hsieh, H. & Shannon, S. E.** (2005) Three approaches to qualitative content analysis, *Qualitative Health Research*, Vol. 15, No. 9, pp. 1277–88.
- Ilgaz, A.** (2009) *Design juries as a means of assessment and criticism in industrial design education: a study on METU Department of Industrial Design* (Unpublished master thesis). Middle East Technical University.
- Jatin, G.** (2021) Non-violent communication in the educational context, *Scholarly Research Journal for Interdisciplinary Studies*, Vol. 8, No. 68, pp. 26–43.
- Koskinen, I. & Battarbee, K.** (2003) Introduction to user experience and empathic design, in I. Koskinen, T. Mattelmäki & K. Battarbee [Eds] *Empathic design*. Helsinki: IT Press, pp. 37–50.
- Kouprie, M. & Sleeswijk Visser, F.** (2009) A framework for empathy in design: stepping into and out of the user's life, *Journal of Engineering Design*, Vol. 20, No. 5, pp. 437–48.
- Krippendorff, K.** (2005) *The semantic turn: a new foundation for design*. Boca Raton: CRC Press.
- Larsson, A. & Stolpe, K.** (2022) Hands on programming: teachers' use of metaphors in gesture and speech make abstract concepts tangible, *International Journal of Technology and Design Education*, Vol. 33, pp. 901–19.
- López-León, R. & Gómez-Valdez, G.** (2018) Understanding empathy in design education, *International Journal of Educational Research and Innovation*, Vol. 10, pp. 51–63.
- Mattelmäki, T., Vaajakallio, K. & Koskinen, I.** (2014) What happened to empathic design, *Design Issues*, Vol. 30, No. 1, pp. 67–77.
- Mewburn, I. B.** (2009) *Constructing bodies: gesture, speech and representation at work in architectural design studios* (Unpublished PhD thesis). The University of Melbourne, Melbourne.
- Meyers, S., Rowell, K., Wells, M. & Smith, B. C.** (2019) Teacher empathy: a model of empathy for teaching for student success, *College Teaching*, Vol. 67, No. 3, pp. 160–8.

- Oh, Y., Ishizaki, S., Gross, M. D. & Do, E. Y. (2013) A theoretical framework of design critiquing in architecture studios, *Design Studies*, Vol. 34, pp. 302–25.
- Scharmer, O. (2016) *Theory U: leading from the future as it emerges*. Oakland: Berrett-Koehler Publishers.
- Schreier, M. (2013) *Qualitative content analysis in practice*. London: Sage Publications.
- Shaffer, D. W. (2003) *Portrait of the Oxford Design Studio: an ethnography of design pedagogy*. WCER Working Paper No. 2003-11.
- Shin, C. & Thomas, J. (2015) Exploring the emotional experience of the user and designer, both in the design process and classroom, *Procedia Manufacturing*, Vol. 3, pp. 2267–74.
- Sinquefield-Kangas, R., Rajala, A. & Kumpulainen, K. (2022) Exploring empathy performativity in students' video artworks, *International Journal of Education Through Art*, Vol. 18, No. 2, pp. 145–60.
- Skrzypczak, V. (2021) Principles of somatic movement education for architectural design, *Dimensions of Architectural Knowledge*, Vol. 1, No. 2, pp. 51–60.
- Stein, E. (1989) *On the problem of empathy*. Washington, DC: ICS Publications.
- Tellez Bohorquez, F. A. (2017) *Empathy expression and development in the context of industrial design education* (Unpublished PhD thesis). North Carolina State University, North Carolina.
- Thompson, E. (2005) Empathy and human experience, *Science, Religion, and the Human Experience*, Vol. 27, pp. 261–85.
- Tracey, M. W. & Baaki, J. (2022) *Cultivating professional identity in design: empathy, creativity, collaboration, and seven more cross-disciplinary skills*. New York: Routledge.
- Uluoglu, B. (2000) Design knowledge communicated in studio critiques, *Design Studies*, Vol. 21, No. 1, pp. 33–58.
- Vaes, K., Corremans, J. & Moons, I. (2011) Educational model for improved empathy 'the pleasurable mask experience'. *International conference on engineering and product design education*. London.
- van Rijn, H., Sleeswijk Visser, F., Jan Stappers, P. & Özakar, A. D. (2011) Achieving empathy with users: the effects of different sources of information, *CoDesign*, Vol. 7, No. 2, pp. 65–77.
- Visser, W. (2009) The function of gesture in an architectural design meeting, in J. McDonnell & P. Lloyd [Eds] *About: designing*. London: CRC Press, pp. 269–84.
- Walton, K. L. (2015) *In other shoes: music, metaphor, empathy, existence*. New York: Oxford University Press.
- Webster, H. (2006) Power, freedom and resistance: excavating the design jury, *International Journal of Art & Design Education*, Vol. 25, No. 3, pp. 286–96.
- Zhang, Z. (2022) Toward the role of teacher empathy in students' engagement in english language classes, *Frontiers in Psychology*, Vol. 13, 880935.
- Şenyiğit, Ö. & Yılmaz, N. (2020) An awareness experience by empathic design method in architectural design education, *International Journal of Architecture and Planning*, Vol. 9, No. 1, pp. 242–60.