Design Science

Facilitating design: examining the effects of facilitator's neutrality on trust and potency in an exploratory experimental study

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Abstract

Facilitation style appears to be an important determinant of design team effectiveness. The neutrality of the group facilitator may be a key factor; however, the characteristics and impact of neutrality are relatively understudied. In a designed classroom setting, we examine the impact of two different approaches to group facilitation: (i) facilitator's neutrality expressed as low equidistance and high impartiality and (ii) facilitator's neutrality expressed as high equidistance and low impartiality, on *team trust*, *trust to the facilitator* and *team potency*. To do this, we conducted a repeated-measures experiment with a student sample. Our results indicate that facilitators expressing neutrality through low equidistance and high impartiality had a greater positive impact on team trust. The two approaches did not differ on team potency and facilitator trust. These results contribute to developing theories of design facilitation and team effectiveness by suggesting how facilitation may shape team trust and potency in group design. Based on our findings, we point to the need for future work to further examine the impact of facilitator's process awareness and neutrality, and show how facilitation methods may benefit teams during creative design teamwork.

Key words: design facilitation, team effectiveness, team trust

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1. Introduction

Facilitation is key to supporting workplace creativity and other major design activities, and can be crucial to finding effective solutions during co-creation (Seeber, Maier & Weber 2014; Pirinen 2016). Facilitation practices can help teams to conduct more creative and effective teamwork (Rasmussen 2011) through providing methods, challenges and questions to guide teams towards their goals (Stewart 2006). As such, facilitation plays a major role in shaping collaboration and design team performance (Pirinen 2016), and may serve other creative environments and innovation-based industries (Wróbel, Cash & Lomberg 2020). During teamwork, emergent process features such as trust, cohesion and potency, may influence execution and success (Marks, Mathieu & Zaccaro 2001). While facilitation brings structure to group interactions (Schwarz 2002) by moderating design team processes and emergent states (Seeber *et al.* 2014) little theory on design facilitation exists.

While leadership has been previously linked to trust and empowerment (Srivastava, Bartol & Locke 2006; Pirinen 2016), unlike leaders, professional design facilitators act as a neutral party (Schwarz 2002; Yee & White 2016) and often engage in a collaboration for a limited period of time. This form of group facilition prioritizes remaining neutral towards individuals and ideas (Rasmussen 2011; Lee *et al.* 2018), and implies different group dynamics and relationships (Wróbel *et al.* 2020). However, design facilitators do invoke aspects of charismatic leadership in order to raise enthusiasm and encourage individuals' involvement (Kalargiros, Geng, & Pittz, 2019). For example, Aguirre, Agudelo & Romm (2017) highlight how facilitators must bring out creative potential in diverse participants. However, facilitators must also remain neutral (Tassoul 2009) in order to maximize contributions from group members. Wróbel *et al.* (2020) define *proactive neutrality* as a multifaceted concept, where facilitators balance fairness, impartiality and equidistance to guide group processes, encourage individuals and avoid perceived bias. However, it remains unclear how facilitators strike such a balance between these different elements to impact teams and their design outcomes.

Previous work established fairness as a key contributor to trust (Bstieler 2006), and consequently to team performance (Qiu *et al.* 2009). In the present study, we define neutrality through two main dimensions: impartiality towards individuals and ideas, and equidistance or equality in considering all content to build symmetry (Cohen, Dattner & Luxenburg 1999; Wróbel *et al.* 2020). These two facilitator strategies may be conflicting because ensuring that all ideas are considered symmetrically (high equidistance) logically requires judgement of information, and thus may also create partiality towards individuals. While Lee *et al.* (2018) implicitly highlight this conflict, no prior research has examined the potential trade-off between these two dimensions of neutrality in group facilitation or how it may impact design team performance.

We conducted an experiment to investigate how differences in facilitator neutrality – expressed as high equidistance and low impartiality or as low equidistance and high impartiality – influence design team's processes and design outcomes. Specifically, we hypothesized that these two distinct approaches to facilitator neutrality have different effects on *team trust*, *trust towards the facilitator* and *team potency*. By examining the impact of design facilitator's neutrality on teams during creative design work, we identify potential implications for design teams and facilitator practices.

2. Theory and hypotheses

2.1. Neutrality, facilitation and teams

Team effectiveness has been an ongoing research topic for decades with numerous studies and approaches developed (Mathieu *et al.* 2008). One of the most widely adopted models is the input–process–outcome framework by McGrath (1964) and its various modifications (e.g., Hackman & Morris 1975), including Ilgen *et al.*'s (2005) seminal input–mediator–outcome model. The conceptual framework for this study is based on the latter, and follows prior differentiations between team processes and emergent states (Marks *et al.* 2001; Ilgen *et al.* 2005). In particular, we focus on the two affective mechanisms: team trust and potency, which are among the most frequently discussed in small-group research (Grossman, Friedman &

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Kalra 2017). These mechanisms reflect team's *'(…) motivational tendencies, relations among team members and affective reactions'* (Kozlowski & Ilgen 2006). They are particularly critical in the facilitation context, since they have been previously linked to team effectiveness and performance (e.g., Costa, Roe & Taillieu 2001; Bstieler 2006; Lee, Farh & Chen 2011) and practitioners frequently use help from facilitators to enhance team performance and ultimately support the design processes (Kimbell 2011; Steen, Manschot & de Koning 2011).

Facilitation can be defined as a practice of helping groups to be more creative and work more effectively (Rasmussen 2011) by structuring and guiding the process (Sanders & Stappers 2008; Bens 2012). It is important to emphasize that we focus on human facilitation as opposed to automated or rule-based facilitation (Seeber *et al.* 2014; Vegt *et al.* 2019). Human facilitation is commonly carried out by third-party consultants in a workshop format (Schwarz 2002; Steen *et al.* 2011). According to most definitions, a facilitator in the design and creativity context is a non-member of the group who should remain neutral towards people and content during the process (Kramer, Fleming & Mannis 2001; Lee *et al.* 2018), and who through appropriate use of methods, posing questions and challenging the team members, provokes creativity and supports them in successful accomplishment of the set goal (Stewart 2006). However, neutrality is not well defined in the design facilitation context, beyond the above explanation. Therefore, we draw on the recent definition of proactive neutrality proposed by Wróbel *et al.* (2020). Wróbel *et al.* (2020) drew together theory from the established field of mediation and in-depth understanding of facilitation in design practice, to conceptualize proactive neutrality as consisting of three elements (impartiality, equidistance and fairness), which interact across dimensions of people, process and product, to achieve a balanced perception of neutrality in the creative context. This links to the mediation literature, which describes neutrality as enacted by facilitators in two primary ways: through impartiality or equidistance (Cohen *et al.* 1999), as well as wider work, such as Aguirre *et al.* (2017) or Paulus & Brown (2007), who both highlight the interplay between various processes in facilitation. As noted in the introduction, we constrain our operational focus to: impartiality and equidistance, because fairness should be present during the process regardless of approach, and has been previously studied as a factor increasing trust in teams (Korsgaard, Schweiger & Sapienza 1995). In contrast, impartiality and equidistance are two closely related dimensions; impartiality is based on freedom from bias and judgement (Rifkin, Millen & Cobb 1991; Rock 2004), while equidistance assumes temporal partiality in order to support one side in expressing their views to create process symmetry (Cohen *et al.* 1999). Thus, we operationalize impartiality and equidistance as distinct but related in the facilitation context, where increase of one can lead to a decrease of the other, and *vice versa*, and where impartiality typically means refraining from judgement and any intervention towards people and content, in order to avoid bias, while equidistance usually allows for intervention, such as sharing opinions and own ideas with the team, if it supports the process. Consequently, neutrality prioritizing equidistance also implies that the facilitator could structure the process to allow equal participation and amount of information shared by the team members, while neutrality prioritizing impartiality implies a less structured process, relying more on free discussion, because the facilitator cannot express judgements about received information from the team, hence making it impossible to adjust the process reflexively.

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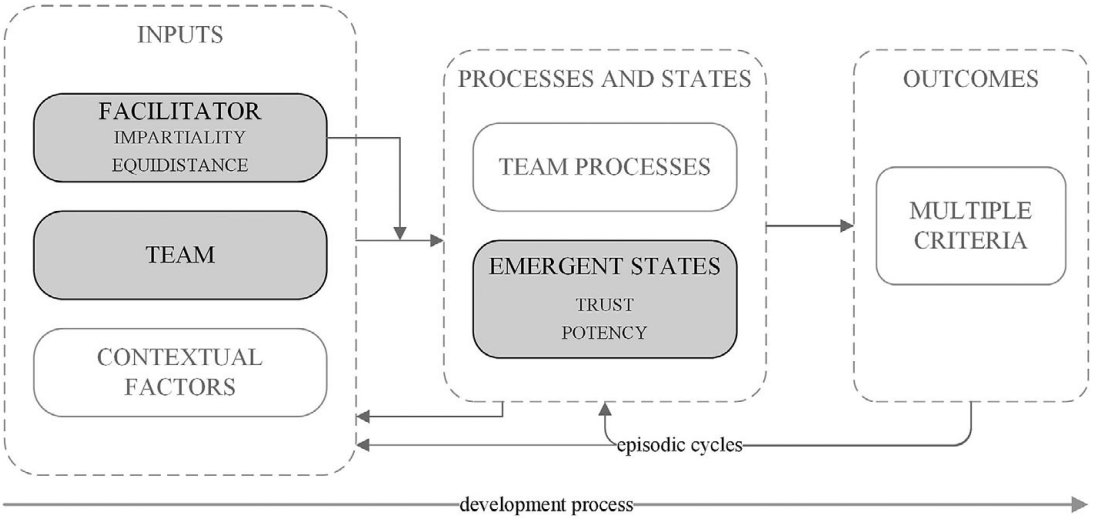

Figure 1. Conceptual framework highlighting the elements studied in the paper, adapted from Mathieu *et al.* (2008) and Seeber *et al.* (2014).

Since facilitator's neutrality can be expressed in distinct ways differing in style and level of intervention, it is likely that these also have different effects on the facilitated team. Seeber *et al.* (2014) show that facilitation can impact team processes and emergent states, however, the details of this interaction have not been studied before and little is known about facilitator's influence on team effectiveness. Further, Hyysalo, Hyysalo & Hakkarainen (2019) highlight the difficulties facing facilitators who must manage group dynamics and balance design outcomes, such as 'productive work' and effective states, such as 'team spirit'. In particular, they emphasize challenges in remaining 'neutral' whilst also pushing the team. Finally, it is crucial to understand the wider effect of facilitation on design teams, beyond creative performance (Kramer *et al.* 2001; Pirinen 2016), taking into account the affective mechanisms developing in the team, which determine team's motivation (Kozlowski & Ilgen 2006) and can be carried through to the subsequent design phases and affect future teamwork (Kang, Chung & Nam 2015; Pirinen 2016). Thus, it is crucial to better understand the differing dimensions of neutrality and their impact on the design process.

Figure 1 represents our conceptual framework and its key elements, as described above, with the arrows representing possible relationships between these elements, and building on our prior studies of designers in practice (Wróbel *et al.* 2020). We highlight the facilitator and the team as the key inputs into the team development process, and their impact on the team emergent states, including trust and potency. While contextual factors, fairness and other aspects of team processes are also relevant to team performance, we exclude them from the scope of this work in order to focus on the impact of facilitator's neutrality.

2.2. Neutrality and trust

Trust is central to design and co-creation (Yang & Sung 2016; Yee & White 2016). For the purpose of this study, we draw on the well-established definition by Mayer,

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Davis & Schoorman (1995, p. 712), describing trust as *'(...) the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party'*. Furthermore, we highlight the importance of trust for successful teamwork and project development (Hsu 2017; Müller-Stewens & Möller 2017). Research shows that trust fosters a collaborative climate in teams, which in turn enhances creativity (Barczak, Lassk & Mulki 2010). However, as aptly noticed by Buvik & Rolfsen (2015, p. 1486), the initial conditions in the design team, being either trust or distrust, '*(…) may trigger both vicious and virtuous cycles of behaviour and expectations*'. Thus, it is critical for the facilitators of creative workshops not only to establish trust with the team, but also to assure that the existing trust between team members will not be compromised through the process, but rather developed and strengthened for future collaboration. Therefore, both team trust and trust to the facilitator are important dimensions for our study.

Team trust

At the team level, trust can be decomposed as consisting of propensity to trust, perceived trustworthiness and trust behaviours, including both cooperative and monitoring behaviours (Costa *et al.* 2001). Since we are interested in the facilitator's neutrality and its effect on team trust, propensity to trust is out of our scope, since it refers to the individual willingness to trust others and depends on one's personality and experiences (Costa *et al.* 2001), which cannot be changed during facilitation. It also relies on the previous history between the team members and their familiarity with each other, at both professional and personal level, which could not be accommodated in our exploratory study based on a student sample, as explained later in the paper. Similarly, we also exclude monitoring behaviours because of the short-term character of studied facilitation cases, which would not allow teams to develop and execute such behaviours.

In contrast, facilitator's neutrality adopted as low equidistance and high impartiality, which excludes judgement and direct intervention in favour of open team discussion, is likely to increase members' opportunity to communicate freely and feel more involved in the team activities, thus encouraging cooperative behaviours (Costa *et al.* 2001). Specifically, allowing members to develop an open exchange of information can foster trust between members via the development of shared mental models (Rico *et al.* 2008), rather than with the facilitator, whose mental model is hidden due to their lack of judgement expressions. Further, open sharing can foster a spirit of collaboration and encourage participants to lead and rely on each other in solving the problem, which also increases trust within the team rather than with the facilitator (Carson, Tesluk, & Marrone, 2007; Costa, Fulmer & Anderson 2018). This leads us to our first hypothesis (a):

Hypothesis 1(a): Facilitator's neutrality expressed as low equidistance and high impartiality has a greater positive impact on *cooperative behaviours* in newly formed teams than neutrality expressed as high equidistance and low impartiality.

A similar reasoning applies to perceived trustworthiness. According to the literature, it is based on the belief in other person's honesty and good intentions, as well as fulfilling their commitments without taking advantage of the trusting party (e.g., Costa *et al.* 2001). Hence, the more opportunity the team members have to

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communicate, ask each other questions and understand each other's intentions, the higher likelihood that they will perceive fellow team members as trustworthy. Again, this variable develops through the exchange of views and growth of shared understanding (Rico *et al.* 2008), which can happen within the team independent of the facilitator due to the differences in communication between members and with the facilitator:

Hypothesis 1(b): Facilitator's neutrality expressed as low equidistance and high impartiality has a greater positive impact on *perceived trustworthiness* in newly formed teams than neutrality expressed as high equidistance and low impartiality.

Trust to the facilitator

As mentioned earlier in this section, effective facilitation requires a certain level of trust between the team and the facilitator, just like in any client–consultant relationship (Maister, Green & Galford 2001; Nikolova, Möllering & Reihlen 2015). This trust is based on how the team perceives the facilitator (the trustee) in terms of their *'(…) competence, expertise, honesty, integrity, benevolence (…)'* (Castaldo, Premazzi & Zerbini 2010, p. 663). The leadership literature also suggests that involvement in *'high-quality exchanges'* between the leader and the team can increase perceived trustworthiness of the leader (Graen & Uhl-Bien 1995), and that leader's reliance on the team and sharing important information with them can have a similar effect (Lee *et al.* 2010). If we look at the facilitators through the same lens, following Kang *et al.* (2015), the higher their involvement in the process, the greater the opportunity for team-facilitator information exchange and mutual reliance, also through emotional connection, and therefore the higher the trust to the facilitator. Similarly, the more explicit their judgments, the more easily members can develop an understanding of the facilitator's mental model and hence build trust (Rico *et al.* 2008). Again, as this is based on exchanges between individuals this variable can develop independent to team trust due to the difference between member–member and member–facilitator interactions. In addition, the facilitator's interventions in the process structure and contributions to the discussion can display their competence, ability and integrity to the team, independent of member–member interaction, also increasing members' trust towards the facilitator. Since this high level of involvement and structure is only possible when neutrality is treated as high equidistance rather than impartiality, our second hypothesis is:

Hypothesis 2: Facilitator's neutrality expressed as high equidistance and low impartiality has a greater positive impact on team's *trust to the facilitator* in newly formed teams than neutrality expressed as low equidistance and high impartiality.

2.3. Neutrality and potency

Potency in team research is defined as *'a collective belief in a group that it can be effective (…)'* (Guzzo *et al.* 1993, p. 87). Together with team efficacy, it is often considered a part of a larger category of emergent states – team confidence (Mathieu *et al.* 2008), but some authors see it also as a dimension of team empowerment (Kirkman *et al.* 2004). A difference between team efficacy and potency is that the former refers to a specific task, and the latter covers a more general view of team's capabilities (Mathieu *et al.* 2008). Since in this study, we are interested in how facilitator's interventions influence the design team's ability to

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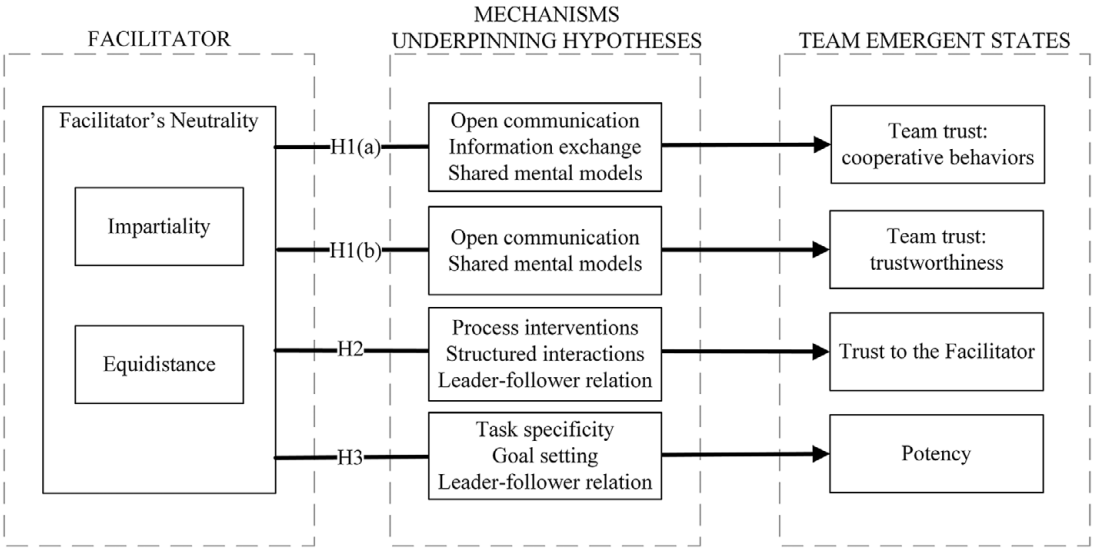

Figure 2. A summary of the investigated hypotheses, and the underpinning mechanisms.

collaborate successfully in the future in a general sense not with regards to a specific task, we focus on team potency.

Hu & Liden (2011) found that goal clarity and process clarity are important antecedents of team potency. These can be directly influenced by the facilitator providing clear process structure and direction to the team, which allows the team to understand their goals and progression towards these in their work, and hence judge their own effectiveness and potency. As such, we hypothesize that the more structure the facilitator brings to the process, the higher the team potency, that is, the highly equidistant approach will result in higher team potency. In addition, servant leadership was also shown to support team potency (Hu & Liden 2011), and is characterized by positioning the followers above one's self interest as well as high levels of followers' trust towards the leader (van Dierendonck 2011). Thus, we expect team potency to increase with team's trust to the facilitator, which we hypothesized to be positively influenced by high equidistance. Therefore:

Hypothesis 3: Facilitator's neutrality expressed as high equidistance and low impartiality has a greater positive impact on *team potency* in newly formed teams than neutrality expressed as low equidistance and high impartiality.

Figure 2 summarizes the hypotheses for this study, as well as possible factors and mechanisms determining the proposed relationships.

3. Method

In order to test our hypotheses and refine theoretical understanding with respect to the proposed relationships (Cash 2018), we conducted an experiment. This is a suitable method for the theory-testing purposes (Robson 2002; Bryman 2012). We constrained the focus of the study to the enactment of neutrality in design process facilitation, where the experimental conditions could be connected to the real-world observations of facilitation styles reported by Wróbel *et al.* (2020) that is, excluding free teamwork with no facilitation as well as the facilitator acting as a

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team member with no process leadership role (which is more akin to an external expert rather than process facilitator).

3.1. Experimental design and participants

Due to the complexity of the interaction between neutrality and team performance, and the lack of prior theory or study in this area, a priority was placed testing the key relationships in the conceptual framework (Figure 2), before working towards more complex studies of neutrality in practice, where multiple personal, team and contextual variables might disguise underlying relationships. Hence, we prioritize internal over external validity in this study, as they cannot typically be simultaneously maximized (Gainsbury & Blaszczynski 2011). Based on this, we employ student subjects for two main reasons. First, it allowed us to create new teams without history and past experiences and ensure that all teams were at a comparably similar stage of development, which would not be achievable otherwise. Second, by using senior students as facilitators, we minimized differences in personal facilitation styles and techniques, which would be impossible when employing professional consultants. In this way, we ensured that previous experience of the facilitators does not affect our dependent variables (Cash & Culley 2014).

In practice, the experiment involved 12 student teams, each consisting of four first-semester Bachelor students from a design and innovation programme. None of the participants knew each other well, and additionally, the experiment teams were designed such that they combined students that had not previously collaborated. Further, each team was assigned a Master-level student as a facilitator. This allowed us to create a hierarchy and give the facilitator the necessary authority to run the task, as well as to reflect the external facilitation context. The master students also came from the design and innovation study programme, to ensure that they are familiar with design challenges and creative character of the task. The majority of the facilitators had some prior work experience, such as teaching or facilitating small-scale events but none had worked as a professional facilitator or process consultant. As such, the facilitators had circa 3 years more education, as well as circa 1-year work experience than the team members. This allowed for the facilitators to be specifically trained and effective in following instructions without introducing their own facilitation style, but at the same time, being substantially more experienced and educated than the participants; similar to what would be observed in practice.

3.2. Facilitator training

To further control possible differences between the facilitators, preceding the experiment, all the participating facilitators were given a 2-hour training in facilitation to provide everyone with the same background knowledge. The training comprised standard information about facilitation in creative design and innovation contexts based on both academic sources (e.g., Rasmussen 2011) and practitioners' guides (e.g., Maister *et al.* 2001; Justice & Jamieson 2012), as well as the authors' own experience in teaching facilitation. It covered topics from facilitation definition, through facilitator's roles and methods, to understanding neutrality in facilitation context and the experiment itself. We also ensured that the

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facilitators did not have a personal or professional connection with the team they were about to facilitate and had never worked together before. Finally, the facilitators were provided with a detailed script with step-by-step instructions to read and follow through the experimental prodecure. Both the experiment script and the task description were tested in two rounds prior to conducting the experiment, to minimize the ambiguity and possible bias resulting from different understanding of the task. First, the script was consulted with research staff, including an experimental psychologist, and second, with the Master students who were also the facilitators in the experiment. All questions and feedback were then implemented in the final experiment script.

3.3. Design task

The study was conducted as a design team challenge, including two different tasks to redesign standard products: a toothbrush in Task 1 and a nail clipper in Task 2. The objects were chosen based on three main criteria, namely: familiarity to the students as everyday objects, similarity to other products used for experimental studies in the design context (Kurtoglu & Campbell 2009; Toh *et al.* 2015), and offering a range of possible solutions in terms of size, complexity and function, thus allowing a broad range of ideas to be developed. As all teams carried out both tasks, it was also important that ideas for one could not be copied to the other, hence the products also had to be somewhat different. The number of tasks was corresponding to the number of conditions tested. Each team carried out both tasks: half of the teams started with Task 1 and the other half with Task 2. This, allocation was randomized in order to allow us to eliminate task related effects, for example, stemming from perceived differences in product complexity or similar. Detailed task descriptions can be found in Appendix A.

3.4. Procedure

The procedure involved each team going through two tasks with each task consisting of two parts. In the first part of each task, team members brainstormed new product ideas individually, and made an individual choice of their favourite idea. In the second, facilitated part, the participants were asked to share their ideas within the team and decide about the final concept through discussion and voting. The manipulation took place in the second part of each task, where the facilitators, who were accordingly instructed, manipulated idea sharing and discussion according to the two experimental conditions. Each team went through both conditions: half of the teams started with Facilitation A condition (high equidistance and low impartiality), and the other half with Facilitation B (low equidistance and high impartiality). The experimental procedure could be summarized as consisting of the following steps with approximate duration of each activity specified in the brackets:

(i) Facilitator introduces themselves and reads the Task 1 – Part 1 instructions to the team (2 minutes).
(ii) Facilitator answers potential questions from the team (1 minute) – optional.
(iii) Teams work on the task – brainstorming ideas (5 minutes).
(iv) Facilitator reads the instructions for the next activity in Task 1 – Part 1 to the team (1 minute).

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(v) Team works on the activity – selecting a favourite idea individually (2 minutes).
(vi) Facilitator reads the instructions for Task 1 – Part 2 to the team (2 minutes).
(vii) Facilitator answers potential questions from the team (1 minute) – optional.
(viii) Team works on the task (with the facilitator involved depending on the manipulation scenario).
  (a) Individual ideas presented to the rest of the team (10 minutes).
  (b) Team decision-making on the idea – discussion (5 minutes).
  (c) Team decision-making on the idea – voting (3 minutes).
(ix) Facilitator concludes the task and asks participants to fill in a questionnaire (10 minutes).
(x) The same procedure is followed with Task 2.

Each task lasted approximately 30 minutes, including the manipulated part of approximately 18 minutes. After completing each task, team members were asked to complete a questionnaire about their perceptions of the team, the facilitator and the final decision. Therefore, the experiment took approximately 90 minutes in total with 60 minutes devoted to tasks completion and additional time for filling in the questionnaires and starting/ending the experiment. This timing was based on prior experimental studies in design (Toh *et al.* 2015; Sevier *et al.* 2017), as well as a need to limit the effects of fatigue. See Appendix A for the task description.

Figure 3 represents our repeated measures study design procedure (cf. Sani & Todman 2006, p. 114). The numbers in the figure correspond to the actual data used in the analysis, not to how the experiment was planned, thus unequal number of teams and participants in each condition.

3.5. Experimental manipulations

The experimental manipulation took place in the second part of each task, that is, during the facilitated idea sharing and decision-making process. In the first set-up (Facilitation A), we tested for high equidistance and low impartiality. To keep the high level of equidistance, the facilitators were asked to use a structured approach in which team members would present their ideas one by one. It was up to facilitators to decide whether everyone expressed the same content, regardless of how much time it took for each person. In addition, the facilitators were encouraged to offer their opinions and suggestions to the team during the process, in this way expressing low impartiality. In the second condition (Facilitation B), the facilitators were instructed to keep low equidistance and high impartiality. Thus, the facilitators used an open approach and were asked not to structure the process, but instead allow for free discussion between the team members (low equidistance). Furthermore, in this condition the facilitators were asked to refrain from stating any personal opinions or judgments about their team's ideas, ensuring high impartiality.

Since each team went through both experimental conditions, so did the facilitators. To aid them in this process, each facilitator was provided with a guide according to which they would hold the conversation and manipulate the discussion. By providing such a detailed script and having the instructions primarily read from the guide, we left no room for improvised changes and thus minimized the

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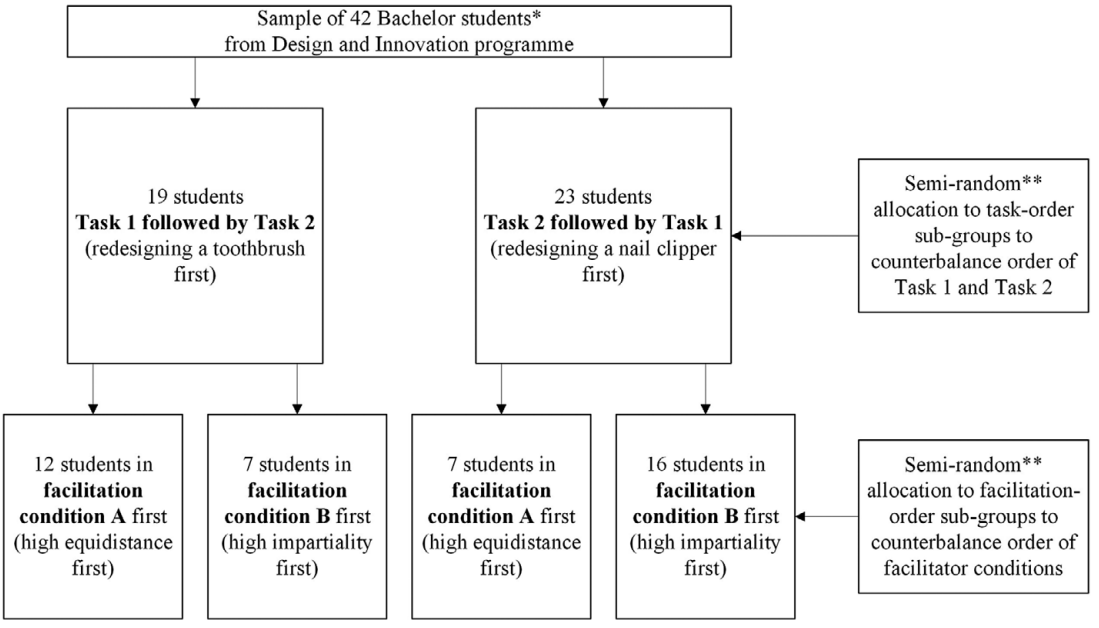

*There were 48 students (12 teams) participating in the study, however, six subjects were excluded from the analysis due to structurally missing data
**Semi-random allocation refers to the fact that the students were assigned to teams ensuring they have not been working together on the project before, thus it was not completely at random

Figure 3. Repeated measures experimental design procedure, adopted from Sani & Todman (2006).

possible impact of facilitators' experience or interpersonal skills on the outcome of the experiment, and ensured that the facilitators were behaving similarly throughout the experiment. During the pre-experiment training, the facilitators were also familiarized with the guide to ensure they could confidently carry out the process. The manipulation scripts, which were included in the facilitator guides, are available in Appendix B.

3.6. Measures

All measures used in this study were 7-point Likert scales adopted from the literature. We used Cronbach's alpha (α) as an initial measure to assess the reliability and internal consistency of the applied measurement scales. The values for all the scales were at the recommended level of 0.7 or higher (Kline 2015; DeVellis 2016), as shown below. Furthermore, we conducted factor analysis for each scale, which showed that all questions within a scale load on the same factor, explaining from 37.68% to 93.98% of the variance. The subsequent principal component analysis (PCA) was run on 70 questions from the questionnaire, and revealed 19 components that had eigenvalues greater than one, out of which a six-component solution explained 55.97% of the total variance, corresponding directly to the six major measures used in this study. As such, we conclude from all three analyses (Cronbach's alpha, confirmatory factor analysis and exploratory PCA)

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that the selected scales were valid and coherent. See Appendix C for the scale details.

Dependent variables

Our dependent variables included perceived trustworthiness and cooperative behaviours as determinants of team trust, trust towards the facilitator and team potency. These were all based on previously validated scales connected to team performance in order to ground our study with respect to the wider literature on team processes. The specific measurement scales were selected based on the three main criteria: the scale had to be previously proven to be reliable and valid, it had to be used in prior research in the field, and it had to be relevant to the context of our experiment and the participants of the study.

Perceived trustworthiness ($\alpha = 0.759$) and *cooperative behaviour* ($\alpha = 0.747$) were measured according to the items proposed by Costa & Anderson (2011) as part of the scale for measuring *team trust,* which was proven reliable and valid. The original scale consists of 21 items grouped in four categories: propensity to trust, perceived trustworthiness, cooperative behaviour and monitoring behaviour. In our study, we only used 12 out of the 21 proposed items. Perceived trustworthiness and cooperative behaviours elements were chosen as both are relevant to the effective task performance of the team. The remaining items were either too dependent on the common history of the team and how well the members know each other (propensity to trust), or too focussed on long-term collaboration (monitoring behaviours). However, it should be noted, that the 21-item measurement scale developed by Costa & Anderson (2011) is the most inclusive and exhaustive scale we encountered to date, and many alternative scales only consist of 4–8 items, hence the 12 items we adopted in this study reflect a comprehensive evaluation.

For measuring *trust to the facilitator* ($\alpha = 0.880$), which expressed the extent to which the team members perceived the facilitator as trustworthy, we used the items for perceived trustworthiness from the above-mentioned scale (Costa & Anderson 2011) and adapted them to reflect the facilitator rather than team members as the object of trust.

Potency ($\alpha = 0.873$) was measured by the three items from the Team Empowerment measure (Kirkman *et al.* 2004) and was concerned with the team's confidence in working effectively. It has been used effectively in previous studies (e.g., Hempel, Zhang & Han 2012) and offered a clear distinction of items for measuring specifically potency, which are often merged and difficult to distinguish in overall 'team empowerment' or 'team performance' scales.

Control variables

Since fairness is closely related to neutrality but not the focus of this study, we controlled for *procedural fairness* ($\alpha = 0.766$) during the experiment. The facilitators were asked to be respectful towards the participants and show high consideration for members' inputs, which was previously linked to procedural fairness (Korsgaard *et al.* 1995). We measured participants' procedural fairness perception after each task, adopting the *Procedural Justice* scale from Johnson, Korsgaard & Sapienza (2002, p. 1160).

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Furthermore, we controlled for participants' *decision satisfaction* ($\alpha = 0.776$), to make sure that both conditions resulted in a satisfactory outcome according to the team members. *Decision satisfaction* was measured according to the items adopted from *Satisfaction with Decision Instrument* (Holmes-Rovner *et al.* 1996) and expressed how participants perceived the final concept chosen by their team in each task.

Finally, the sample was also homogenous with regards to the age, educational level and working experience, as explained in the above Section 3.1 as well as in the subsequent analysis.

Manipulated variables

The manipulation of neutrality was evaluated by four 7-point Likert scale items completed by the participants after each task. The items reflected both impartial and equidistant behaviours and were concerning to what extent the facilitator structured the process and contributed opinions on the ideas during the discussion and decision-making part of the design task.

4. Analysis and results

The analysis was conducted using IBM SPSS Statistics software Version 20. Out of 48 cases, six were excluded from the analysis due to structurally missing data. In the remaining data, the percent of missing values was lower than 5%, and we imputed these using mean imputation at the item level (Little & Rubin 2002). The final analysis was based on the responses from 42 participants: 28 (66.7%) male and 14 (33.3%) female. The average age of the participants was 21 years old, with a standard deviation of 1.45, and the average age of the facilitators was 23.5 years old, with a standard deviation of 1.07.

4.1. Manipulation check

The analysis of the manipulation check for neutrality was done using Wilcoxon signed-rank test, which showed a significant difference between the two conditions: condition A being high equidistance and low impartiality, and condition B low equidistance and high impartiality (condition A, $Mdn = 4.00$, condition B, $Mdn = 5.38$, $z = 4.83$, $p < 0.05$). We decided to follow a non-parametric approach throughout our analysis, due to the three following reasons: (i) not all variables followed the normal distribution, which violates the assumptions of parametric tests, (ii) the sample size was relatively small, with $n = 42$ and (iii) Likert scales were used, which implies ordinal data (Sani & Todman 2006).

4.2. Hypotheses testing

The Wilcoxon signed-rank test was used to test our main hypotheses, which is a non-parametric equivalent of a dependent *t*-test and is suitable for analysis of two related samples, as in a repeated measures experiment (Sani & Todman 2006). As an alternative, we also ran a multivariate General Linear Model and the same results were obtained, confirming the consistency of our findings. Both analyses treated subjects as independent observations but they are in fact nested within work groups, so are influenced by the same shared group experiences. Below the

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detailed results using the Wilcoxon signed-rank test are presented with respect to each hypothesis.

Hypothesis 1a, which states that facilitator's neutrality expressed as low equidistance and high impartiality has a positive impact on team cooperative behaviours as a determinant of team trust, was supported [$z = 2.38$, $p < 0.05$ ($p = 0.017$)]. Specifically, the participants expressed higher level of cooperative behaviours in condition B, where the facilitator was highly impartial, than in condition A, where the facilitator was highly equidistant but not impartial (condition A, $Mdn = 5.50$, condition B, $Mdn = 5.83$).

Hypothesis 1b, stating that facilitator's neutrality expressed as low equidistance and high impartiality has a positive impact on perceived trustworthiness as a determinant of team trust, was also supported [$z = 2.49$, $p < 0.05$ ($p = 0.013$)]. In particular, the participants perceived their team members as more trustworthy in facilitation condition B, expressing low equidistance and high impartiality, than in condition A, expressing high equidistance and low impartiality (condition A, $Mdn = 5.67$, condition B, $Mdn = 6.08$).

Hypothesis 2, which predicted that facilitator's neutrality expressed as high equidistance and low impartiality has a positive impact on team's trust to the facilitator, was rejected ($z = 0.662$, $p = 0.508$). There was no significant difference between the two conditions, that is, between the two different facilitator's approaches to neutrality (condition A, $Mdn = 5.50$, condition B, $Mdn = 5.75$).

Hypothesis 3 assumed that facilitator's neutrality expressed as high equidistance and low impartiality would have a positive impact on team potency. It was rejected ($z = 0.667$, $p = 0.505$), as there was no significant difference between the two conditions (condition A, $Mdn = 6.00$, condition B, $Mdn = 6.00$).

Table 1 summarizes the descriptive statistics for the dependent variables tested in this study.

4.3. Control variables

The results of the Wilcoxon signed-rank test showed that there was no significant difference between procedural fairness perception in the two conditions (condition A, $Mdn = 5.88$, condition B, $Mdn = 6.00$, $z = 0.403$, $p = 0.687$), which is a desirable outcome for our study. Similarly, no significant difference was found for participants' decision satisfaction (condition A, $Mdn = 6.00$, condition B, $Mdn = 6.00$, $z = 0.224$, $p = 0.823$), showing that the facilitator's approach to neutrality did not affect how the team perceived the decision about the final idea chosen. We have also ensured that the sample was homogenous with respect to age, education and working experience, and thus these variables did not have an effect on the significance of the results.

5. Discussion

In this study, we look at how two different types of facilitator's neutrality: expressed through either high equidistance or high impartiality, affect trust and potency, as the key determinants of team effectiveness (Grossman *et al.* 2017). The results support our hypotheses related to team trust (Hypotheses 1a and 1b) and do not support the two others, concerning trust to the facilitator (Hypothesis 2) and

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Table 1. Statistics summary for the investigated dependent variables

	Medians, means and standard deviations by condition and p-values							
	High equidistance & low impartiality (A)			Low equidistance & high impartiality (B)			Difference in medians	Hypothesis testing
Dependent variables	Medians	Means	St. Dev.	Medians	Means	St. Dev.	B−A	*p*-values
Team trust: cooperative behaviours (H1a)	5.50	5.59	0.590	5.83	5.81	0.657	0.33	0.017[a]
Team trust: perceived trustworthiness (H1b)	5.67	5.67	0.645	6.08	5.93	0.581	0.41	0.013[a]
Trust to the facilitator (H2)	5.50	5.50	1.272	5.75	5.75	0.886	0.25	0.508
Potency (H3)	6.00	5.85	0.830	6.00	5.91	0.779	0.00	0.505

[a]$p < 0.05$.

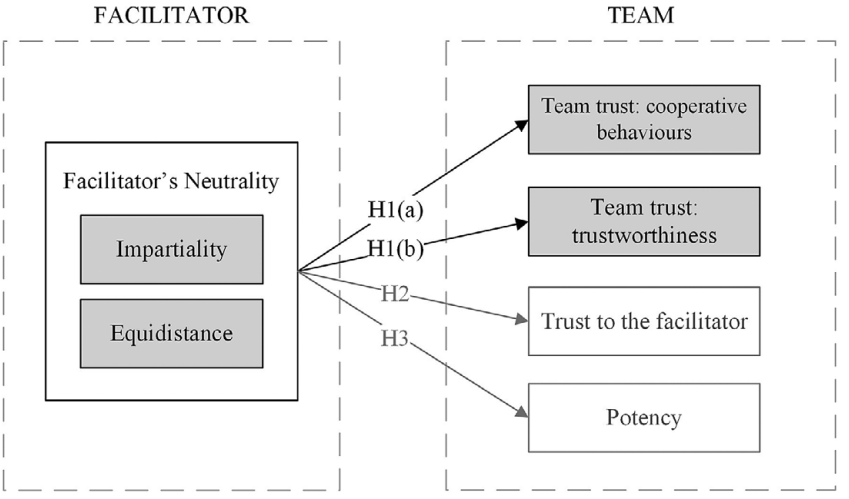

Figure 4. An overview of the main findings with respect to the posed hypotheses, highlighting the significant results.

potency (Hypothesis 3). Below we discuss our findings with respect to the literature and outline the key implications of the study, as summarized in Figure 4.

First, within the constraints of our study, we identified statistically significant evidence of facilitator's neutrality expressed as low equidistance and high impartiality having a positive impact on the student team's cooperative behaviours as a determinant of team trust. High impartiality means that the facilitator refrains from judgement (Rifkin *et al.* 1991; Rock 2004) during team discussions. While

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considering the team members' input, he or she does not express own opinions about presented ideas, leaving the decision entirely to the team and avoiding steering them in any direction. As hypothesized, this results in a higher level of cooperation between the team members as compared to the other approach, where the facilitator is highly equidistant and more focussed on structuring the process, but at the same time not impartial due to the judgement required in that process. This is in line with previous studies which see task interdependence and open communication as predictors of team trust (Costa *et al.* 2001; Costa *et al.* 2018). Further, it serves to illustrate the importance of understanding neutrality as a explicitly directed process within the team, with active management by the facilitator, following our description of 'proactive neutrality' in design practice (Wróbel *et al.* 2020). By leaving more freedom to the team in structuring their discussion and how they want to reach a decision, the facilitator increases members' feeling of mutual dependence in completing the task, which results in a higher level of cooperative behaviours and consequently, higher trust to each other.

We also identfied a similar effect on perceived trustworthiness within the student teams. This shows how enacting neutrality through high impartiality results in a more positive effect on trust within the teams than enacting it through high equidistance. Perceived trustworthiness builds on the belief in other person's honesty and good intentions (Costa *et al.* 2001), and therefore we argued that the more time the facilitator leaves for the team to openly communicate without imposing fixed structure, the more opportunity for the team members to get to know each other and thus get perception of each other's intentions. This prediction found empirical support, seeing as facilitator's neutrality expressed as low equidistance and high impartiality resulted in significantly higher perceived trustworthiness than in the other approach.

In contrast to our confirmation of Hypotheses 1a and 1b, we reject Hypothesis 2. We find no significant difference between the two types of facilitator's neutrality in terms of trust to the facilitator. In the beginning of this paper, we argued that neutrality expressed as high equidistance and low impartiality would result in a higher level of trust to the facilitator. It was based on the fact, that such an approach includes more interventions in the process, introduces more structure to the interactions, and allows the facilitator to share his or her opinions about the ideas with the team. Through that, it gives means for the facilitator to display their competence, ability and integrity to the team (Castaldo *et al.* 2010), which in consequence could lead to a higher level of trust towards the facilitator. However, the majority of facilitator's interventions in our experimental design were directed at the team, not at the facilitator themselves, which might explain why we saw a difference between the two approaches in terms of team trust, but not trust to the facilitator. This aligns with facilitation in practice where trust to the facilitator is often developed outside of the workshop, when the first contact between the consultant and the client is established (Maister *et al.* 2001; Kimbell 2011), or in the very beginning of the workshop when the facilitator introduces him- or herself to the team. This is when the focus is on the facilitator, and when their credibility and reliability can be explicitly displayed. This was not a part of the task in our experiment, and thus this effect could have been reduced in our design. However, this reveals an important insight: trust between the facilitator and the team can be built up in different ways than through direct facilitation of the team process.

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Finally, we also reject Hypothesis 3. Here, we hypothesized that team potency would be higher with the facilitator's neutrality expressed as high equidistance and low impartiality, as compared to low equidistance and high impartiality. Our study did not support this hypothesis, that is, we did not observe a significant difference between the two types of facilitator's neutrality with respect to potency. This might be explained by the relatively high degree of goal and process clarity provided by the structured, short timeframe of our experiment design. Both goal and process clarity are important antecedents of team potency (Hu & Liden 2011). The experimental design, by necessity for our neutrality manipulation, included detailed instructions for the facilitators and the teams, which might have prevented the team from feeling uncertainty about the purpose of the task. Thus the facilitator's impact on the team's belief that it can perform effectively may have been minimized, reducing the subsequent effect on team potency (Guzzo *et al.* 1993). However, it might also be possible that potency depends to a higher extent on facilitator's fairness, which revolves around high consideration and respect for the participants, rather than on neutrality (being it either impartiality or equidistance). Since we controlled for procedural fairness in our experiment, the differences were not visible. Nevertheless, further studies could also replicate our results employing a longer time frame or a more complex task.

5.1. Implications for theory and practice

Our study points to a number of theoretical and practical implications. By showing distinctly different effects of the two approaches to facilitator's neutrality on team trust, we contribute to the development of theory on design facilitation and highlight the need for clarity in defining central constructs in facilitation, such as neutrality (Wacker 2008; Cash 2020). Based on the evidence from our study of design student teams, and its congruence with wider leadership theory, we suggest that high impartiality has a greater positive impact on team trust, which is likely to apply also more generally to facilitation in professional design practice. However, wider generalizability should be confirmed by future research. This supports the 'traditional' view of neutrality – understood as high impartiality – as having a greater positive impact on team trust. It is also important to note that while the opposite approach, of high equidistance and low impartiality, showed a significantly smaller effect on team trust, it was still positive. Therefore, neutrality, as operationalized here by equidistance and impartiality, is a desired facilitation feature, which suggests the need for further study of the multifaceted conceptualization of neutrality in professional contexts. In particular, this serves to elaborate our proposed understanding of 'proactive neutrality' (Wróbel *et al.* 2020). Furthermore, we also add to the literature on design team processes and innovation, by showing the importance of neutrality as an antecedent of trust in a facilitated setting. Since trust is critical for team effectiveness, and building trust at the early project phases is essential for future teamwork, it is possible that effective facilitation – through an appropriate neutral approach – could support longer-term trust building and performance within a team. However, further work is needed to understand the long-term impact of facilitation and how it might vary over time in professional contexts.

From the design practitioner perspective, this paper shows the importance of understanding how facilitation – where facilitator's neutrality is expressed as high

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impartiality – can support trust in design teams, and thus positively influence team performance as well as creativity, as inferred by prior literature (Barczak *et al.* 2010; De Jong, Dirks & Gillespie 2016). Specifically, given that the limited, short-term facilitation in our study was able to register an effect, one can only imagine how appropriate facilitation training might improve outcomes in professional settings, where facilitators are more fully engaged with a team in the long term. From the design facilitators' point of view, we highlight the need for self-awareness in the facilitation process, since enacting neutrality in different ways can yield different results. Furthermore, some emergent states such as trust to the facilitator and potency seem to be developed outside the direct workshop facilitation setting, thus it is necessary to acknowledge that key elements of facilitator-team collaboration are shaped by the phases preceding a workshop. Similarly, this work has implications for the education of design facilitators. Specifically, this study adds evidence to the idea that neutrality is multifaceted, and that facilitators should be conscious of their specific approach that is, emphasizing impartiality or equidistance, depending on their desired outcome. This work thus, provides an initial framework for disambiguating the teaching and discussion of these differing approaches.

5.2. Limitations and future research

In our study, we focussed on the effects of facilitator's neutrality on the student team during a facilitated design session, following an individual brainstorming process. While this task is a good representation of an actual facilitated design workshop, it also has some limitations which need to be discussed. First, our experiment covered a short timeframe. This might have reduced the longitudinal impact of facilitator's interventions, and hampered the measurement of trust to the facilitator or potency due to insufficient time to develop a significant change by task end. Despite this, the task length reflects both observations of practice as well as other studies in the design context (Toh *et al.* 2015; Sevier *et al.* 2017; Wróbel *et al.* 2020), which are often less than 1 hour and thus forms a sound basis for the conclusions drawn here. However, it must be acknowledged that professional facilitation also frequently involves longer sessions (Shroyer *et al.* 2018; Wróbel *et al.* 2020). As such, future studies could investigate the effects of facilitator's interventions over longer timeframes found in practice, for example, one- or multi-day workshops. Longitudinal studies looking into development of team emergent states such as trust over time, for example through different project phases, would also bring a new perspective to the topic.

Second, we used an artificial task and specifically formed teams, which could reduce generalizability of our results to real-world facilitation. However, we deliberately selected a typical design task, which was familiar and easy to relate to for the participants, which is important for participant understanding and ownership as in a real project. Thus, while an artificial task can introduce some limitations, it has substantial benefits for internal validity and is a well-established aspect of experimental design (Salas, Cooke & Rosen 2008; Kirk 2009). Further, the use of formed teams allowed us to control internal validity and effectively test the hypotheses in a way not possible when drawing on teams with longer history and thus introducing many contextual factors. Given the success of our study it now makes sense to further explore the robustness of our findings in more complex,

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contextualized settings using, for example, professional teams with history in different company contexts.

Third, our experiment relied on a small student sample, which is both a strength and a limitation of our study. This allowed us to control for participants' previous experience, as well as to apply a complex manipulation and experimental design, both of which are essential to maintaining internal validity in an experimental context (Bello *et al.* 2009; Druckman & Kam 2009). Further, it allowed us to form teams with significantly less experience than the facilitators by using first year bachelor students and final year masters students, mirroring differences in expertise also observed in practice. However, using student subjects reduces external validity in comparison to professional design teams and facilitators. As such, while the selected sample was adequate to support the reported findings future research is required in two directions. First, replication would provide a test of the robustness of our findings in other student cohorts and could help develop understanding of the core conceptual model (Figure 2). This could also be extended to replication with professional teams, but retaining the artificial task etc. in order to provide an intermediary level of complexity between our controlled experiment and fully contextualized studies of practice, following the approach of Cash, Hicks, & Culley (2013). Second, further studies, either observational or experimental, could be carried out in practice in order to better understand how our findings might translate into complex, real-world settings, following similar discussions in the recent work of Ball & Christensen (2018).

Finally, our study is based on a conceptualization of neutrality which is derived primarily from the mediation and legal literature where neutrality is discussed in the context of conflict resolution rather than creative design work. However, in these fields the neutrality construct has been robustly described and shown to hold explanatory power across a range of contexts. This in contrast to the very limited study of neutrality in the design context, and the almost complete lack of theory. As such, we argue that in terms of the basic, abstract concepts, such as equidistance and impartiality, these settings might not be as different as one could assume, as shown in the previous work by Wróbel *et al.* (2020). However, further study is needed to understand both how these abstract concepts can be understood in the design context, as well as the scope of their potential impact. For example, a concept closely related to team trust is psychological safety (Kessel, Kratzer, & Schultz, 2012), which might also be impacted by facilitation outcomes.

6. Conclusion

This paper aimed to investigate the effects of facilitator's neutrality on the key determinants of design team effectiveness: trust, both within the team and to the facilitator, and potency. We hypothesized that neutrality expressed as low equidistance and high impartiality has a greater positive impact on team cooperative behaviours and perceived trustworthiness as determinants of team trust, than the opposite approach. The results support this hypothesis and show that high facilitator impartiality can enhance team trust. This finding has important implications for theory in both facilitation and wider design team research, as this is the first study to empirically test the above effect and explicitly develops our proposed understanding of proactive neutrality.

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We show that through an appropriate approach to neutrality, facilitators can support student design teams in both early creative work as well as encourage the development of trust. This has potential implications for the whole design process as the development of trust within teams is an established antecedent of team performance (Bstieler 2006; De Jong *et al.* 2016). At the same time, our results do not support hypotheses regarding trust to the facilitator and team potency, showing that there is no significant difference between the two approaches to neutrality with respect to these constructs. We suggest that the observed lack of difference could be due to potency and trust to the facilitator being primarily developed outside the facilitated workshop setting, throughout the entire collaboration between the facilitator and the design team. Thus, it is essential for design facilitators as well as design team leaders to acknowledge the importance of establishing the collaboration in a proper way, as its effects can shape how the team works throughout the project. In the future, we encourage researchers to look further into the topic of facilitation and its effects on design teams as well as whole projects. Understanding those mechanisms will allow for further development of the design facilitation field, both in theory and in practice.

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Appendix A
Task description

Task description as presented to the experiment participants, excluding the free space for the drawings of idea concepts and the final questionnaire (the items asked in the questionnaire can be found in Appendix C). Two versions of the task were used – with a toothbrush, or alternatively a nail clipper (mentioned in square brackets). Please note that facilitators taking part in the experiment were provided with a different script, which in addition to the assignments included supplementary instructions to be given to the participants and the detailed information on how they should proceed at each step of the experiment (including experimental manipulations as shown in Appendix B).

Part 1

You are a member of a team of designers, working for a company manufacturing toothbrushes (nail clippers). The company is looking for new directions. Your task is to propose a new design for a toothbrush (nail clipper) that will give the company a competitive advantage in any way.

When the facilitator lets you know, you will be asked to brainstorm individually, and come up with as many ideas for the new product design as you can. You will have 5 minutes to do so, and the facilitator will tell you when the 5 minutes are up. On the next four pages, you will find space to document your ideas (text, sketch, etc.). Put one idea per box.

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Part 1 (continued)

You will now be asked to select *one* favourite idea from the previous pages.

(i) Mark it by putting a circle around the idea number in the top right corner of the box.
(ii) Also, put the idea number in the designated space below (on this page).
(iii) Use the lines below to write up to three reasons why you think this idea is the best one.

You will have 2 minutes to do so, and the facilitator will tell you when 2 minutes are up.

Chosen idea number:
Reasons for choosing the idea:

(i) _____
(ii) _____
(iii) _____

Part 2

In your team, you are now going to decide which idea the company should pursue. The facilitator will assist you in this process. You will have 18 minutes for this task, and the facilitator will tell you when there is 3 minutes left, and when the time is up.

You will find an A3 sheet of paper in front of you to describe the final idea (text, sketch, etc.).

Appendix B
Manipulation scripts

Facilitation A: high equidistance and low impartiality

In this task, you are going to assist the team in their decision-making process. Your responsibility is that the team completes the assignment on time. We want you to use a structured approach that will help to get quality information from the team members. You should:

Facilitate every team member's input, even if you do not agree with what they are saying.

Give each team member a chance to express the same content, regardless of the time it takes. It is okay if explaining one idea to the same degree takes 1 minute for one person and 5 minutes for another – the same for their comments.

After each team member finishes talking about his or her idea, evaluate the idea and comment on it. You can be positive or critical about the idea, but make sure that your comments are always constructive and not personal.

Remember! You are not a team leader and the ultimate decision belongs to the team.

Facilitation B: low equidistance and high impartiality

In this task, you are going to assist the team in their decision-making process. Your responsibility is that the team completes the assignment on time. We want you to

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use an open approach that will help to get quality information from the team members. You should:

(i) Facilitate every team member's input, even if you do not agree with what they are saying.
(ii) Let the team members freely discuss and express ideas as they wish in the time they have.
(iii) After a team member finishes talking about his or her idea(s)/views, express a neutral comment. You should not judge the ideas or express any opinions about them. You should also not make personal comments about team members.

Remember! You are not a team leader and the ultimate decision belongs to the team.

Appendix C
Measurement scales

All items measured according to the 7-point Likert scale; (r) = reverse item. In the actual questionnaires, the items were randomized within five categories: Team Perception, Facilitator Perception, Decision Perception, Process Perception (including procedural fairness items) and Other (including manipulation checks).

Dependent variables

Team trust: perceived trustworthiness.
Adapted from Costa & Anderson (2011).

(i) In this team, people can rely on each other.
(ii) We have complete confidence in each other's ability to perform tasks.
(iii) In this team, people will keep their word.
(iv) There are some hidden agendas in this team. (r)
(v) Some people in this team often try to get out of previous commitments. (r)
(vi) In this team, people look for each other's interests honestly.

Team trust: cooperative behaviours.
Adapted from Costa & Anderson (2011).

(i) In this team, we work in a climate of cooperation.
(ii) In this team, we discuss and deal with issues or problems openly.
(iii) While taking a decision we take each other's opinion into consideration.
(iv) Some people hold back relevant information in this team. (r)
(v) In this team, people minimize what they tell about themselves. (r)
(vi) Most people in this team are open to advice and help from others.

Trust to the facilitator.
Adapted from Costa & Anderson (2011).

(i) I can rely on the facilitator.
(ii) I have complete confidence in the facilitator's ability to perform tasks.
(iii) The facilitator will keep his or her word.
(iv) The facilitator has some hidden agendas. (r)

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(v) The facilitator often tries to get out of previous commitments. (r)
(vi) The facilitator looks for my and my team's interests honestly.

Potency.

Adapted from Team Empowerment measure by Kirkman et al. (2004).

(i) My team has confidence in itself.
(ii) My team can get a lot done when it works hard.
(iii) My team believes that it can be very productive.

Control variables.

Procedural fairness.

Adapted from the Procedural Justice scale from Johnson et al. (2002, p. 1160).

(i) There was two-way communication in the decision-making process.
(ii) Decision-making procedures were applied consistently.
(iii) I was given the opportunity to challenge and discuss the views of the facilitator.
(iv) The facilitator was familiar with and well informed about the team's task.
(v) The facilitator always treated me with respect and courtesy.
(vi) Overall, the procedures used for making decision were fair.
(vii) I am satisfied with the way in which the decision was made.
(viii) I was given the opportunity to challenge and discuss the views of the other team members.

Decision satisfaction.

Adapted from the Satisfaction with Decision Instrument by Holmes-Rovner et al. (1996).

(i) The decision my team made was the best decision possible for me personally.
(ii) I am satisfied that my team's decision was consistent with my personal values.
(iii) I expect to successfully carry out (or continue to carry out) the decision my team made.
(iv) I am satisfied that this was my team's decision to make.
(v) I am satisfied with my team's decision.

Manipulation checks

(i) The facilitator made sure that each member of my team could describe their idea to the same level of detail.
(ii) The facilitator did not judge my team's ideas.
(iii) The facilitator gave equal opportunity for each team member to express their ideas.
(iv) The facilitator did not express opinions about my team's ideas.

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