3. Ideation

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Definition and Background

Ideation, or idea generation, is a key moment—or series of moments—in the design process where an individual or group takes steps to generate ideas relevant to their design. Ideation may involve a number of practices and strategies used for creative production, including brainstorming, sketching, and ***rapid prototyping***. In addition, ideation can occur at various parts of a nonlinear and recursive design process, whether for better understanding the complex dimensions of a ***wicked problem*** or coming up with possible design solutions. Although it is not often historicized in contemporary usage, the term *ideation* and its variants *ideate* and *ideational* have been in use in the English language since at least the 1800s (the 1600s, in the case of *ideate*). At times understood in contradistinction to sensation, ideation has been used as a way of discussing creativity and the thinking process, as well as psychology and how the human brain works. In more recent decades, ideation has been studied and applied in disciplines ranging from social and organizational psychology, engineering, architecture, management, entrepreneurship, and user experience and technology design (see, for instance: Baruah & Paulus, 2011; Basadur et al., 1982; Bradner et al., 2014; Cullen, 2013; Gundry et al., 2016; Hay et al., 2019; Shah et al., 2003). From a design thinking perspective, ideation is often understood as "the process of generating a broad set of ideas on a given topic, with no attempt to judge or evaluate them" (Harley, 2017a), and it tends to include several common features:

- First, a time limit is set. Ideation sessions often last between 15 minutes and an hour, depending on the group dynamic and the complexity of the problem.
- Second, one or more designated facilitators pose a prompt or series of questions to guide ideation.
- Next, quantity is prioritized over quality. The more ideas the better.
- To amass this large quantity of ideas, participants must withhold judgment. No idea is too out there. Instead, wild and divergent thinking is encouraged. This step is based on the understanding that evaluation can stifle creativity.
- In a group ideation session in particular, participants should work in ***collaboration*** with one another, building from the ideas of others. To do so, participants must actively and openly consider the ideas of others. This principle is based on the understanding that collaboration enables the

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generation of diverse ideas, which is key to ***creativity***. That said, the open inclusion of diverse perspectives within an organization can enable a particularly productive ideation session (McLeod & Lobel, 1992).
- Finally, the ideas are recorded and the session is documented (Harley, 2017b).

While these are features that are common in ideation, especially in UX contexts, there are many variations in tools and techniques that are used to ideate. Ideation sessions often involve the use of analog tools—whiteboard and dry erase markers, flipchart paper and markers, post-its and pens—but they can also involve the use of digital tools, such as Google Docs, Miro, Lucidchart, and other concept mapping technologies.

In addition to enabling the possibility of considering a diverse range of ideas, ideation provides a set of strategies for creativity and unconventional thinking—qualities that are important for successful technical and professional communication. As Haakon Faste et al. (2013) suggested, the value of ideation may be less about "the generation of novel ideas than the cultural influence exerted by unconventional ideas on the ideating team" (p. 1343). Further, ideation can get people to start talking when they may be reluctant to do so, and thus strengthen community bonds within the team.

With these affordances in mind, it is important to note some potential limitations of ideation practices as related to equity, inclusion, and accessibility. For instance, some have argued that depending on the guidelines presented, ideation can be set up such that extroverts dominate, and as Cynthia Bennett et al. (2016) asserted, ideation is often carried out in ways that are not accessible for people with disabilities. They explain, "many students are taught to ideate by sketching, but this method may be difficult for people with vision or mobility impairments" (Bennett et al., 2016, p. 303). In addition, d/Deaf or hard of hearing individuals may be excluded from common ideation practices that involve frequent verbal interruptions among a large group of people. Bennett et al. (2016) reported that such participants "expressed frustration lip reading or watching an interpreter during a fast-paced conversation while also examining sketches or other artifacts" (p. 303). It is thus imperative that we attend to accessibility in ideation, by considering the experiences and positionalities of all participants within a given context, and by designing accessible mechanisms accordingly, whether for slowing down, highlighting points of synthesis, making space for all participants to contribute, and/or encouraging the use of multiple modes of communication—the visual, the aural, and the tactile.

Design Application

There are numerous techniques used to guide ideation and to encourage the generation of new, creative, and viable ideas (Smith, 1998). For example, Noe

Vargas Hernandez et al. (2010) identified several common ideation methods, including:

- use of "provocative stimuli," which involves presenting participants with related and unrelated images, objects, sounds, and other stimuli as a way of eliciting new ideas;
- "frame of reference shifting," or "[changing] how objects and requirements are being viewed, perceived, interpreted";
- "example exposure," or providing an example solution to the problem as a way of exciting ideas; and
- "incubation," or adding a programmed delay "to allow sub-conscious processing to take place" (p. 387).

When can ideation take place? Often, it occurs after ***problem definition*** and after having some understanding of users. For example, once a design problem has been identified and after user research has taken place, a team might come together to ideate possible solutions to the problem that are appropriate for users. At the same time, ideation can also be used earlier in the design process, for problem definition. That is, if an organization wanted to improve its protocols or if they wanted to contribute to solving a "wicked" social problem, they might bring people together to ideate the range of problems for potential consideration.

To provide one example among these many possibilities of ideation in the context of technical and professional communication, a technical writer—or group of writers—working to develop user documentation might begin by considering the problem(s) the documentation is meant to address, whether that be user navigation of a specific technology, the difficulties users might experience when troubleshooting particular technical problems, or accessibility of that technical document itself. They might then research who their users are, speaking with diverse users and asking questions meant to elicit an understanding of how users experience that technology or document. Then, with those problems and understandings of user experience in mind, the technical communicator or technical communication team might ideate a hundred solutions that would enhance accessibility and user experience, before reviewing and narrowing down those solutions to identify those that would best address the problem(s) at hand.

For group sessions in particular, it is helpful to designate a facilitator who provides guidance and who is able to model what effective ideation looks like, reminding participants, as needed, to withhold judgment. The facilitator should encourage the consideration of creative possibilities, as well as demonstrate how to build off of one another's ideas, and should ensure that there is a clear record of the session. As noted in the previous section, the facilitator should also consider the ***equity***, accessibility, and ***social justice*** related implications of ideation practices with their specific context and participants in mind. Finally, as an act of accountability, the facilitator should follow up with the team, letting them know how their ideas will be used as the project unfolds.

Pedagogical Integration

Ideation as a pedagogical practice can be especially helpful for encouraging students to think beyond the first viable idea that comes to mind, to help them recognize that there is value to taking the time to consider other possibilities, as there may be other more interesting and effective solutions for a given problem. Ideation can also be used to form groups based on student interests for collaborative projects. As an example, students may be asked to identify a number of wicked problems, before individually selecting the top five problems that are most compelling to them. In a course on feminism and interaction design, for instance, students might ideate 100 wicked problems related to feminism, ranging from the problem of sexual violence on college campuses, to sex trafficking, to attacks on people's right to safe and legal abortion (Sano-Franchini, 2017). Students can then indicate the top three to five problems they are most interested in addressing, and groups may then be formed on the basis of students' shared interests. I often ask students to come up with 100 problems, as it is a high enough number such that they need to think beyond what they might typically do for a class project, but not so high that it is impossible to accomplish within a single class session. This is one context where it is especially important for the instructor-facilitator to model for students what effective ideation can and should look like. Students can then work within their groups to ideate 100 possible solutions to the wicked problem that was the basis of their grouping.

Students may also learn and exercise ideation through low-stakes activities that encourage them to pursue unconventional ideas. The Stanford d.school (2018) design thinking orientation offers one model. In pairs, students first interview each other to understand the problem space or situation, as well as user needs. Then, under a time pressure (seven to eight minutes), students are challenged to sketch a handful of radical solutions without needing to account for the constraints of practicality or resource-related limitation. Next, students are asked to present their four to five sketches to their partner to gather initial reactions. Having gathered those responses, students spend another five minutes choosing one best idea from the sketches and refine it based on their partner's feedback. This learning exercise can be integrated into usability studies, user experience research, or general technical and professional communication pedagogies as a way to promote creativity.

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