HCDE 300 Final Essay

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INTRODUCTION

The Hasso Plattner Institute of Design at Stanford's Design Thinking methodology has revolutionized the technological industry with its emphasis on human needs and desires. Currently, this framework has five stages: Empathize, Define, Ideate, Prototype, Test, and Assess (Balcaitis, 2022). Overall, this framework aims to put the focus on human needs and constant iteration. However, while this work has made major steps into developing a more human-centered world, several aspects of it take away from its ability to do so. In this essay, we propose a revised version for the **Empathize, Define, and Test** phases.

EMPATHIZE

As designers we often have to build solutions for problems that are not our own, so it is important to fully understand our target user group and their needs. Some of the current methods for empathizing with users include observing them to capture physical manifestations of their interactions with their environment, or by listening to people's stories of their lived experiences and trying to keep these experiences in mind while designing projects (Balcaitis, 2022). While this is not necessarily bad, it can leave out important details. Someone could describe an experience in specific detail - what happened, who was there, how it made them feel - but if the designer does not experience it themselves, they will never truly understand what that person went through. In "The Promise of Empathy," Bennett explains that "...empathy, as performed by designers in order to know their users, may actually distance designers from the very lives and experiences they hope to bring near" (2019, pg. 1). They provide an example of how a designer trying to empathize with a blind or visually impaired person might put on a blindfold to imitate that person's disability so they can better understand it, but this is not at all what a real blind or visually impaired person experiences, so it does not accurately represent them. **As for a redesign to the "Empathize" stage, it is important to have a diverse set of designers on a team when creating a product, since there will be a wider range of experiences that can be reflected on the design.** Suppose a designer was trying to build an app to help people with mobility impairments fill out intake forms at a doctor's office, shown below in Figure 1:

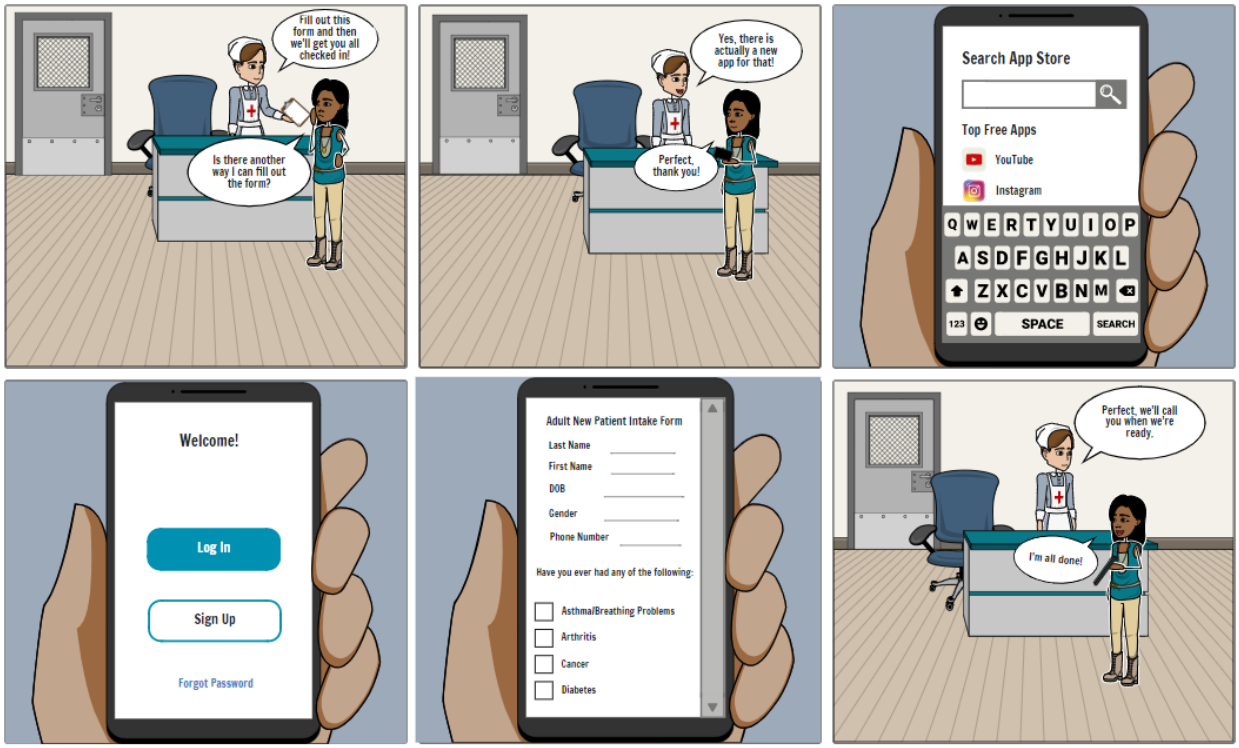

Figure 1: *Storyboard showcasing changes in "Empathize" phase.*

In the storyboard, this girl needs to fill out an intake form at the doctor's office, but she has rheumatoid arthritis in her fingers so it's hard for her to hold a pencil properly to write on paper. To solve this problem, the designers came up with an app in which people can either type their forms out on their phones, or fill out the necessary information using speech-to-text functions. Using the app, she is able to complete the task without too much trouble. If they had tried to imitate her disability by taping together the fingers of an able-bodied person, the app may not work properly for the target user group since that doesn't accurately portray their disabilities. This shows the importance of finding people who actually have mobility issues, rather than trying to imitate them for the same effect. **Thus, it is important to have a diverse group of designers who have different experiences and backgrounds so that they can fully and accurately, to the best of their ability, represent the diversity of people on this earth, and for them to research and test on people from the actual target group.**

DEFINE

In the "Define" phase, designers use data from the previous phase "Empathize," to form research questions, develop a better understanding of their users, and synthesize the data they gathered (Balcaitis, 2022). Ultimately, the "Define" phase should result in discovering the root of users' problems, which they will use as the foundation behind the "Ideating," "Prototyping," and "Testing" phases. **The "Define" stage is important because it has implications for what designs will make the cut in prototypes and testing. This phase must be carried out with**

thoughtfulness and care, ensuring that designers have the proper background to inform insights. One of the problems of the "Define" phase is that it clumps too many stages under one umbrella. In this phase, designers are supposed to do three separate things: define their problem statement, gain an understanding of their users, and synthesize user data. While related, it is important that these three tasks are differentiated because there is significance in the order that these steps are done. Designers may want to jump straight into synthesizing user data without understanding what overarching questions they want to answer, without understanding the context of their users. By putting these three tasks into one stage, it makes each individual task seem less important in the grand scheme of the entire design process. The story of the beginning of the TRS-80 (A micro computer system) in *How Users Matter* by Van Oost is a good example of how intricate and involved user research can be, hence the need for thorough user context. The author mentions they were not able to find any female users of this technology, and explains that this could be a result of many different factors, including fear and the masculine culture of technology (2005, p. 36). If designers were to synthesize this data without the context, they might form misinformed conclusions, like women being unable to use a computer because of the "proof" found – the lack of women using computers. Therefore, a suggestion for a redesign would be to **split "Define" into two phases: "Define" and "Synthesize." "Define" would come before "Empathize," and is where the broad research questions and user context happens, taking the necessary time to become familiar with the research. Then, after the "Emphasize" phase comes the "Synthesize" phase, where designers use their research questions for finding patterns and insights.**

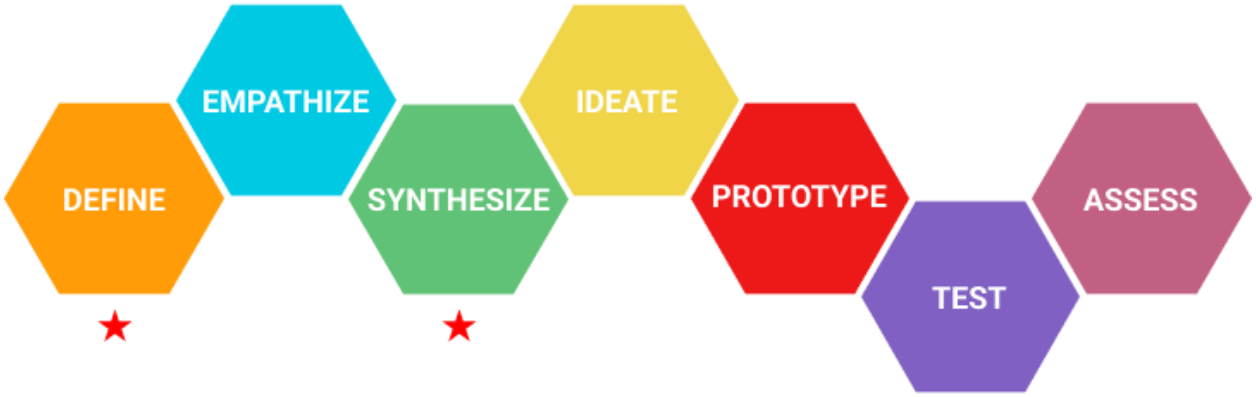

Figure 2: *Hasso Plattner Institute of Design at Stanford's Design Thinking methodology redesign, with "Define" placed before "Empathize," and an addition of "Synthesize" phase*

In Figure 3 below, two designer begin their project with this redesign and reflect on what they did:

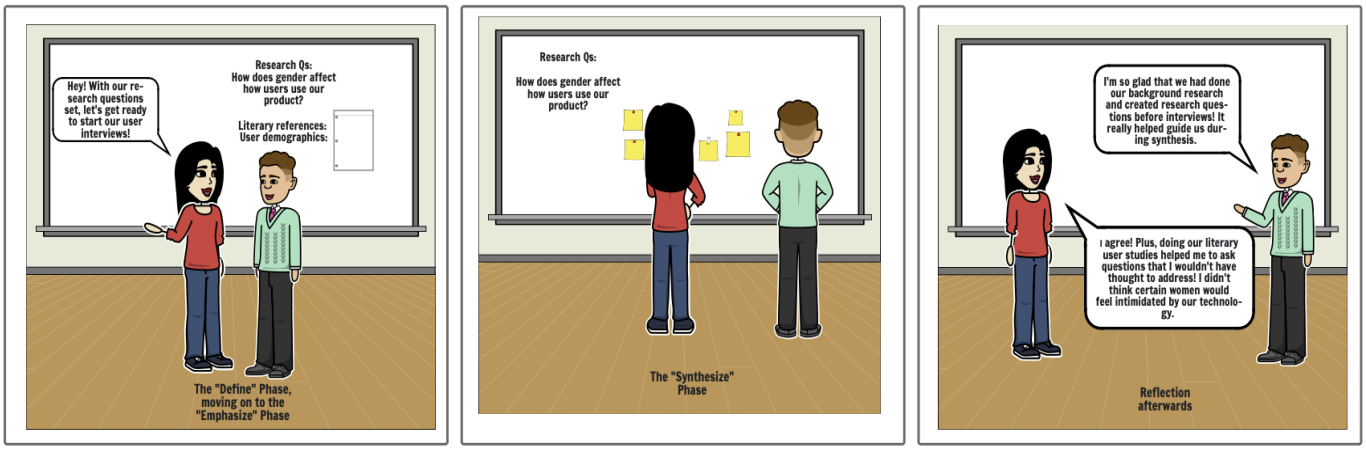

Figure 3: *Storyboard showcasing two designers starting research with the "Define" stage redesign.*

In this storyboard, the two designers take the necessary time to create research questions that provide guidance for their interviews and give context to their users. In the next scene, these designers can be seen synthesizing their data with their research question nearby for reference. In the final scene, these two designers reflect on what they gained from conducting research in this way. They state that doing this helped guide discussion questions, synthesis, and gain specific insights that they wouldn't have gotten otherwise.

TEST

In the current "Test" phase, designers gain a deeper empathy in order to refine their design solution to best fit their users needs. However, this phase needs to diversify their user testing participants so that they can better empathize and understand user groups (Balcaitis, 2022). **A solution to this problem would be to create a framework for recruiting participants for user-testing. The framework should include actively seeking out participants that come from different demographics. With more diversity in the user-testing process, designers can take in feedback and produce a design that is universally effective for a diverse user group, regardless of their gender, race, ethnicity, or sexuality.** A major issue we see in the design world is the user testing of only white straight wealthy males. Oftentimes, participants from other demographics are not sought out for recruitment, which would broaden the diversity of the testing process and make a more effective product for different communities. In Sasha Costanza-Chock's introduction to "Design Justice," they mention, "I've been flagged…As a nonbinary trans* femme, I present a problem not easily resolved by the algorithm of the security protocol. Sometimes, the agent will assume I prefer to be searched by a female agent; sometimes, a male," when describing a time they were flagged by security in the airport, and had to go through a pat-down by a security officer (2020, p. 3-4). This specific example shows that algorithms, as well as other designs in today's society, are specifically designed for men or women, and leave out trans and non-binary people. Bumps in common designs like airport security algorithms cause certain user groups to be uncomfortable and invaded, which brings up

a large issue in the design world. Oftentimes, transgender people are not taken into consideration when designing a product, which is shown in the airport security example Costanza Chock shares. More diversity in user groups during the "Test" phase of the design process could reduce problems like these – designers would get a better understanding of how to make their design accommodate all user groups, not just the traditional white cishet male. An example of including a more diverse user group in the "Test" phase is shown below in Figure 4:

Figure 4: *Storyboard showcasing change in "Test" phase.*

The storyboard above shows a scenario where a lady is conducting a user testing session for her new app, which requires Face ID to login. She has a diverse set of users for testing, people of different genders, races, and sexualities. However, after the users go through the testing process and fill out her feedback form, the lady finds that the Face ID worked for Mary, a white female, and not for Dave, a black male. This shows that she needs to revise her design so her Face ID works for all people, regardless of their gender or race. By having a diverse user group, she was able to tackle important design decisions and make revisions to better serve all user groups in society.

CONCLUSION

Ideally, we would implement all these redesigns in the real world, but in some cases this may be challenging or even unrealistic. Splitting the "Define" stage into two smaller stages is an easy fix in most cases, since it just requires reordering some steps. However, the redesigns for the "Empathize" and "Test" stages are more difficult to implement consistently, although they are major issues in the design field. Both of the redesigns involve increasing the diversity of people either on the design team or in the user research participants to gain a fuller understanding of the users' backgrounds, experiences, and needs in order to better refine the product. While this is the goal, the issue stems much deeper - a lot of larger companies have less diverse teams because they actively seek out students from top universities to hire, and these top universities also lack diversity, which exacerbates the diversity problem in the workplace. While there are some

regulations in place to try to fix this (such as diversity quotas), the root of the problem is that statistically, the most diverse neighborhoods are usually the poorest and cannot afford a quality education. The user-testing problem is slightly easier to solve, but is still not always realistic to implement. Finding willing participants can be difficult, time consuming, and expensive, and most teams' projects are on a fast-paced timeline and have a budget. However, this is up to the team to decide whether or not they want to increase the timeline and budget to create a higher quality product or service to satisfy their target user groups. However, by fully implementing these three solutions in the Empathize, Define, and Test phases, future designs will be stronger and will satisfy a wider range of users.

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