Siebel Center for Design

Human Centered Game Design
Summer 2025

Impact Report

Semester Offered: Summer 2025

Purpose of the Camp
This camp was part of a collaboration between Siebel Center for Design and the Worldwide Youth in Science and Engineering (WYSE). It introduces high school students to the role of Human-Centered Design (HCD) in game design to develop interactive experiences intended for specific audiences.

This camp was built upon an initial 2-day pilot that was done in the year 2024 for WYSE for students from the Chicago Pre-College Science and Engineering Program. Previous camp feedback from staff was reviewed to collaboratively develop a full week curriculum that kept students motivated, engaged, and empathetic towards audiences they were designing for.

Camp Objectives:
The camp's objectives centered on 1) understanding the fundamentals of HCD, 2) preparing students to critically reflect on old and new elements within game design, 3) providing campers an opportunity to design educational STEM games for younger audiences, and 4) training students to use a variety of design thinking tools to better collaborate, communicate and empathize with stakeholders. By the end of the camp, students would need to prototype both a tabletop game, and a video game.

Brief Description of Camp
The Human-Centered Game Design camp ran during summer 2025 as week-long, 8-hour daily sessions for 20 high school students from public housing communities. Students ranged from freshmen to seniors, united by their shared passion for games and eagerness to learn design principles. Co-instructed by Dr. Brian Guerrero, Rodrigo Hidalgo, and Emma Eunbyul, the camp introduced a new approach to game design by centering users and considering audience needs, desires, and limitations.

Throughout the program, students worked in small groups, applying human-centered design methods to research, ideate, and prototype both physical and digital games. The curriculum emphasized empathy and user research, teaching participants to conduct interviews, observe player behavior, and iterate designs based on feedback. By week's end, each team had developed game prototypes demonstrating their understanding of

player-focused design principles, equipping them with valuable skills for potential careers in game development, user experience design, and related fields.
During this camp students were introduced too and used the following design thinking tools:

- **Empathy Maps:** Breaking down different methods data can be collected from users that cover both the breadth and depth of user needs, wants, limitations and experiences. Empathy maps allowed campers to break down what they knew about potential STEM topics with various audiences.

- **Stakeholder Maps:** Identifying all the potential users and adjacent stakeholders for potential interactions to design a more inclusive and well researched game.

- **Observations:** How to effectively observe users interact within an environment and explore how different players playtest.

- **Mind Maps:** Allowing students to break down what they know about a particular topic, to both identify gaps in knowledge and opportunities for design.

- **Prototypes + Feedback:** Encouraging campers to create a variety of low fidelity prototypes for easy iteration and teach them methods for gathering effective feedback from play testers.

- **Interviews:** Campers were taught how to create effective interviews for both 1 on 1 and group settings.

- **2by2 Decision Matrices:** After engaging in brainstorming activities, students were taught to engage with 2by2 decision matrices to evaluate highly effective and feasible ideas.

- **Dot Voting:** Even after narrowing down ideas, dot voting allowed camper groups to further build consensus.

Participants
In Summer 2025, 20 high school students (15 male, 5 female) enrolled in the residential Human-Centered Game Design Camp through Worldwide Youth in Science and Engineering at the College of Engineering. Participants included 3 rising ninth graders, 5 tenth graders, 5 eleventh graders, and 7 twelfth graders.

Evaluation
A pre and post survey was administered to evaluate the effectiveness in reaching the goals of the camp by the facilitators. A few of the questions will be highlighted within this section.

Students were asked how they believe empathy played a role within game design.

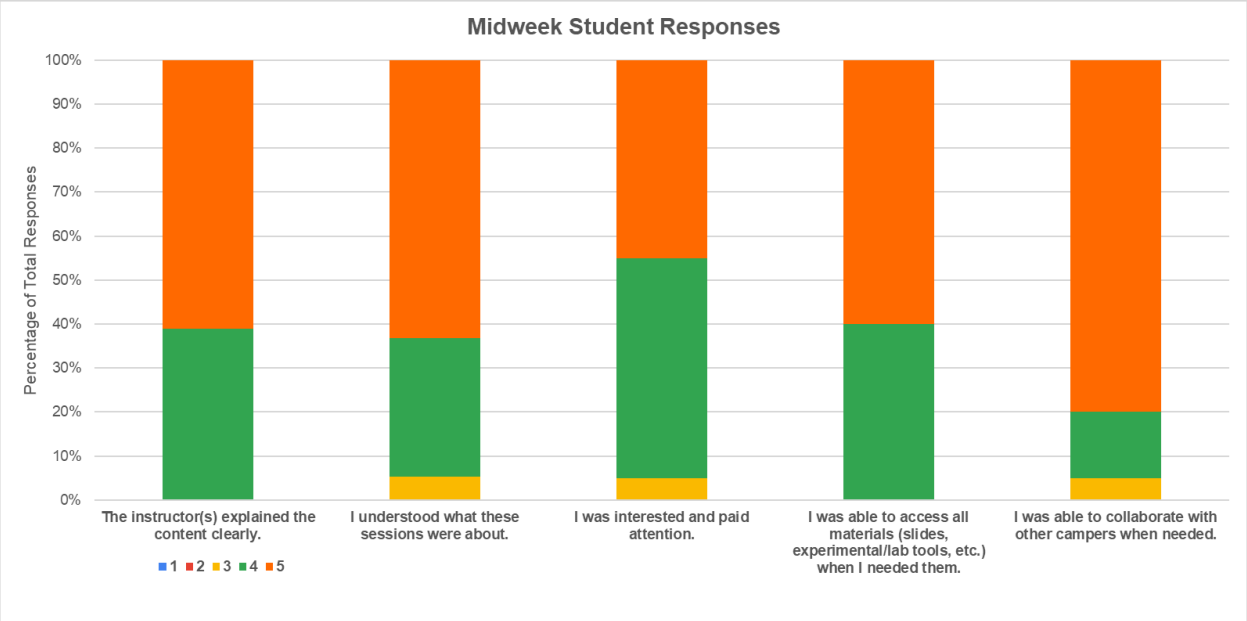
The students' understanding of empathy in game design changed significantly from focusing mainly on emotions to taking a more strategic and practical approach. At first, students concentrated on understanding and caring about player feelings in general terms, with responses like "take the emotions of the players in account when making a game" and "knowing how to make them feel good." They saw empathy as being aware of how players might feel and making sure they had positive experiences. After instruction, their responses showed a shift toward thinking about specific audiences and understanding that different players have different backgrounds and needs. This change is clear in responses like "Knowing what the players background would tell the designer how to design the game to fit the players needs" and "Knowing your target audience's wants and needs." Students also moved from thinking about empathy as just a general concept to seeing it as part of the actual design process, including getting player feedback and making improvements. Students went from seeing players as one big group that needed emotional care to understanding that different audiences have specific needs, knowledge levels, and goals that must be addressed through careful design choices and ongoing improvements based on what users actually want.

Students were asked with how they would address a player during playtesting, being confused about how to progress.
Students showed clear improvement in how they would handle player confusion, moving from simple solutions to more thoughtful approaches. Instead of just asking general questions, they developed specific ways to understand problems, like "Ask them how things would make more sense for them" and "Ask what they are stuck on specifically, such as the overall goal or specific mechanics." Many students created step-by-step methods for solving confusion, with one explaining "1. Ask them how things would make more sense for them 2. Re-design component and explain things better" and another using "See when. Ask why. Change it." Students also started thinking more about the player's experience, suggesting techniques like having players "think out loud" to understand how they actually think through problems, rather than just asking what's wrong. While many still suggested tutorials as solutions, their responses became more thoughtful, like "Add more instruction/show a small demo of what I've done to get past the level if it's not a puzzle game. Maybe even a hint system if it is one," showing they considered different types of games and different levels of help. This change matches the growth we saw in how students defined empathy - they moved from basic understanding to more practical ways of actually helping players, though putting empathy into practice was harder to change than just understanding what empathy means.

General Feedback
To collect students' feedback on the camp, WYSE asked campers to fill out a mid-week survey and a post camp survey.

Mid-Week:

Within the multiple-choice questions, students were asked to indicate how much they agreed with the following statements from 1 (strongly disagree) to 5 (strongly agree).



The following questions were open response survey questions.

What was the most interesting or exciting thing you learned today?

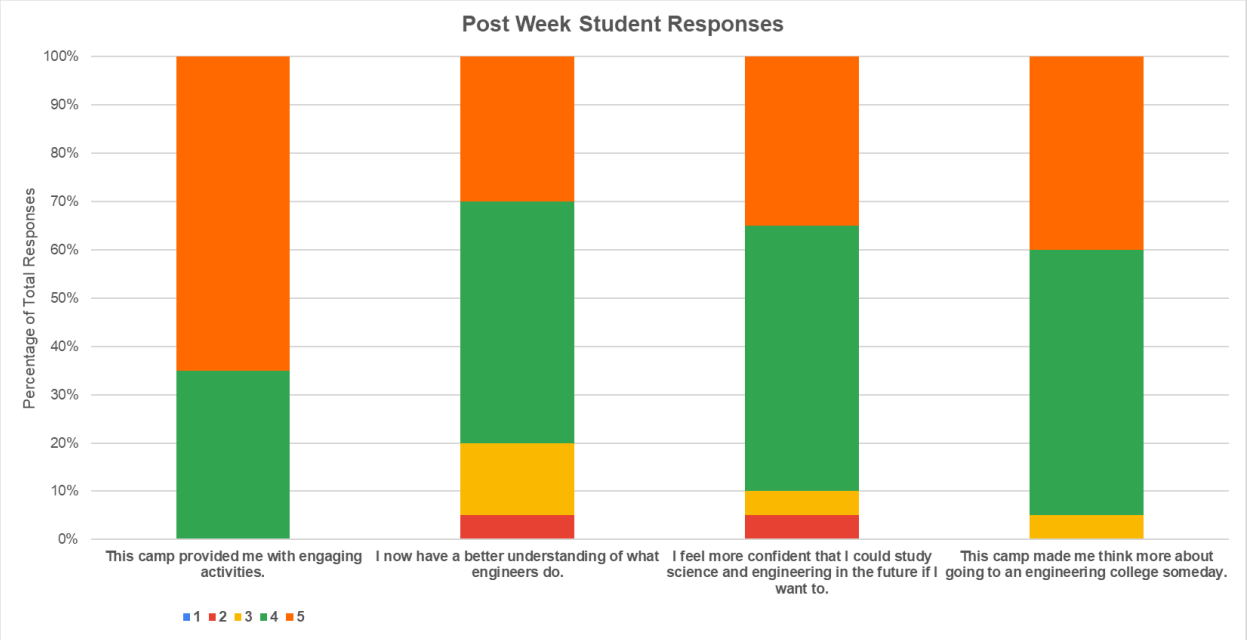
Students were most excited about working together in teams to create board games, with several highlighting how much they enjoyed the collaborative experience. **Multiple students also found it engaging to learn about the game design process and the steps involved in creating games.**

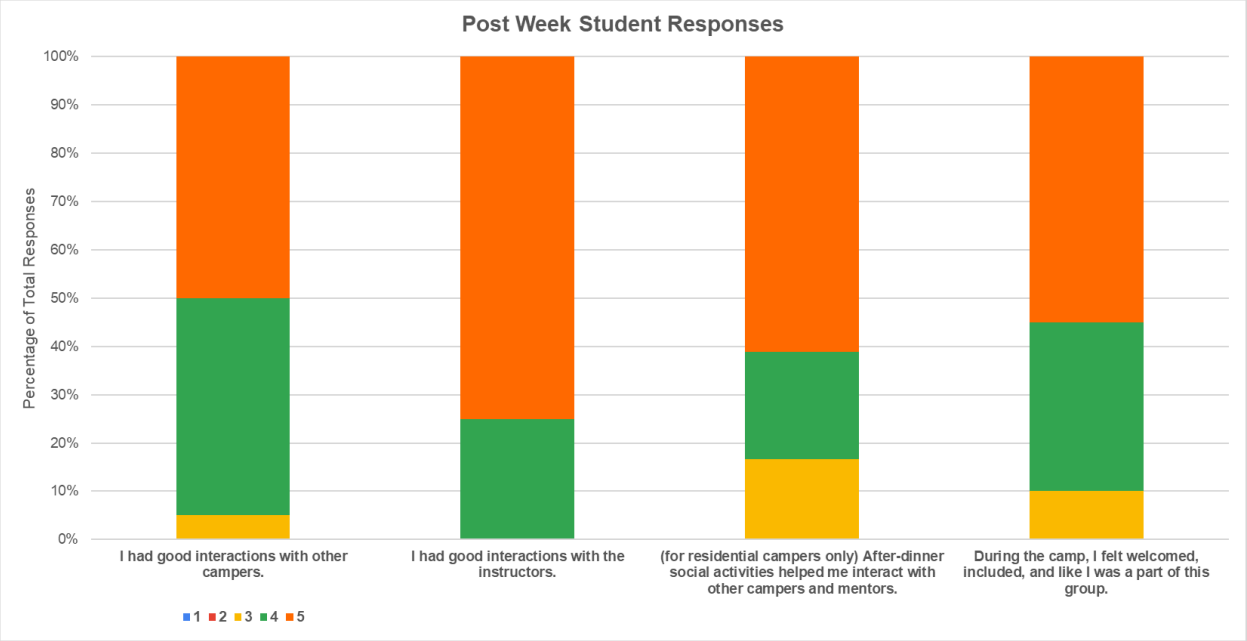
What was the hardest part of the sessions for you? Why was it hard?

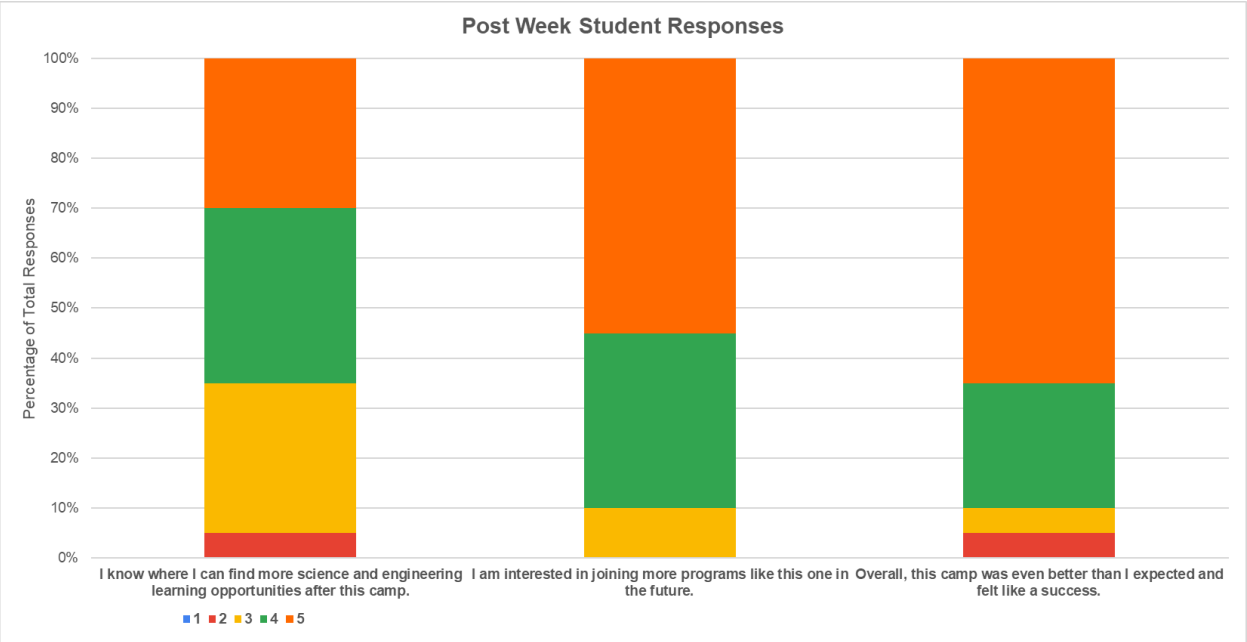
The most common difficulty was working with other people, with several students mentioning challenges around collaborating in groups, combining different ideas, and communicating effectively with teammates. Multiple students also found it hard to come up with ideas and figure out how to actually make their games work, including developing game mechanics and turning their creative ideas into functional games. A few students struggled with time management, finding it **difficult to meet project deadlines and fully develop their ideas within the available time**.

Post-Camp

Within the multiple-choice questions, students were asked to indicate how much they agreed with the following statements from 1 (strongly disagree) to 5 (strongly agree).







The following questions were open response survey questions.

What were the most interesting or useful things you learned at camp? Why did you find them interesting?

The most frequently mentioned topics were learning about the game design process and human-centered design, with multiple students highlighting how they learned to create games while **keeping the player's perspective in mind**. Several students were particularly excited about learning GB Studio, especially since many had never worked with that platform before. Students also commonly mentioned gaining valuable **knowledge about game development methods** used by larger companies, including **prototyping, playtesting, and feedback processes** that help developers understand what players want. Many found the hands on experience of actually making games and testing them with peers to be especially **engaging and educational**.

What were the most difficult parts of the camp for you?

While a few students reported that nothing was particularly difficult for them, the most common challenge was coming up with ideas for games, with several students mentioning difficulty with brainstorming and ideating, especially as a group. Multiple students also struggled with working in groups, including challenges with blending different ideas together, interacting with teammates, and contributing effectively to group projects. **Time constraints were another frequently mentioned difficulty, with students feeling rushed to meet deadlines and complete their projects within the available time**. Several students found the actual technical aspects challenging, including building video games, coding, and making board games that were both interesting and fair for players.

Was there anything you felt was missing from this camp compared to what you expected? What suggestions do you have to make better?

Several students felt the camp was too short and wanted it to be longer to allow more in-depth learning and less rushed project timelines. Multiple students expressed disappointment with the amount of coding and computer science content, expecting more programming work, particularly with engines like Godot, and less focus on board games. The VR section was mentioned by a few students as feeling disconnected or unnecessary, with suggestions to remove it in favor of more video game design time. Students also wanted more hands-on video game development and less board game creation overall. A few students noted no issues and found the camp very good as it was.

Additional comments

Many students expressed very positive feelings about the camp overall, with several describing it as "awesome," "really fun," and "great." Students particularly appreciated the instructors and the food provided at the facilities. Multiple students again emphasized wanting more coding and video game content with less focus on board games. One student was especially grateful for how accommodating everyone was as a second language English learner, highlighting the inclusive environment. Students also enjoyed the social aspects, including designing with other people and scheduling that maximized time to connect with friends.

Recommendations for Future Iterations of the Camp

Considering the positive impact on the students' learning and experience based on both camper feedback, the artifacts designed by campers, and the evaluation survey collected by the instructors, future iterations of this camp must 1) **maintain the focus on HCD, empathy and game design**, 2) **continue to provide opportunities for students to explore and analyze a wide variety of games**, 3) **locate potential players/teachers to invite for interviews and discussions**, 4) c**ontinue to explore game engines that could introduce more programming**, 5) i**nvite industry guests to speak to students on the importance of HCD in game design**, 6) **allocate additional time for the video game design portion**.

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