

Building Your Own Customized Education Brick by Brick

For more details, please review the website <https://cuiyiwenjlu.wixsite.com/city>

Our idea is a collaborative, personalized, and cohesive e-learning platform for high school students. We arrived at this idea by applying design thinking into the Google sprint methodology using remote learning as our playground for exploration. With in-depth research and interviews from parents, teachers, and students, we uncovered many overlapping issues, all of which were factors that failed to keep students motivated and engaged. To address these issues, we designed the City Builder e-learning platform from the students' perspective. Feedback from our student interviews revealed the following themes that validated our work: Collaboration, Customization, Motivation, Progress Visualization, and Stress Reduction.

City Builder's key feature is the actual visualization of the students' progress and academic accomplishments represented by the construction of their own personal cities. For every assignment the student completes, they receive a "brick" or building block. For every class/module they complete, they can complete their building. As they move throughout City Builder's curriculum, they - along with their teachers and parents - have the ability to monitor their progress by the cities they create. "I think it is cool to see how much you've been doing; how big the city can get and it does help. You see how much you have done which you don't always realize" said one student.

Creating and modifying their own schedule allows City Builder to bring students the customization they are looking for and the control over their time they crave. This gives students a sense of ownership, prepares them for life outside high school, and helps with time management. One student put it, "This gives you a sense of being able to get on top of your schoolwork instead of just feeling like you're overwhelmed by everything." Another student said "The scheduling is cool because it already plans ahead for you. So for people like me that don't really plan their school work as much, it's good".

This brings us to collaboration. The exchange market is a place where students can "trade" their bricks. We think of it as a way to exchange academic facts from the courses where those bricks were earned, which we hope will make students curious about possible courses they can choose in the future. Collaboration on group homework assignments will be emphasized too. One

student commented, "I like the idea of being able to switch bricks with other people. Because then you can interact with them and help them out."

Some students see the exchange market as a way to help students that are struggling in particular subjects. Others see it as a motivator to keep working on enlarging the city as a way to compete with the best-performing students: "you can build up stuff and compete against your friends". These findings reinforce the importance of using common motivators to allow students to advance collectively. "This is a good idea. It's fun because it's kind of like a game."

This aspect of motivation is crucial in times like these. Multiple schools have eliminated one of the few incentives that fueled student efforts: grades. A variety of students shared with us that their schools no longer reward extra effort and consequently they're only encouraged to do enough to pass the class. It is also common for online classes to be without cameras and microphones muted. With our platform, students see the benefit of keeping engaged, encouraged to push their limits with a basic, transparent reward system. As one student mentioned, "The idea of the whole building blocks is a cool way to make us go to class."

The findings that emerged with the user tests were very revealing. Their valuable feedback opened our eyes to benefits that weren't previously considered. Firstly, the site was designed by us (students) and it showed: students mentioned that "unlike other e-learning platforms, this one is visually pleasing. It is eye-catching, colorful, and not designed by old people". They enjoyed the social media style design and were visibly excited to share their progress with their peers, and "competing" cities. Since students also shared their anxiety when forced to use multiple new platforms, we implemented a simple, guided tutorial by an avatar, to ensure they're comfortable using the site.

City Builders has the potential to cross over school districts, zoning laws and education policy, on a local, national, and even global scale. We see universal equity in this platform in which ALL students, teachers, parents, and other stakeholders, collaborate to bring education into the 21st century. We envision a curriculum that is based on a hybrid structure of group and individual learning that promotes problem solving and creative thinking over the "memorization" methods, grading, and standardized testing of the past.