

with games like *League of Legends* and *Call of Duty* and, out of the group of 12, all but one child used a video game example in their responses.

We then had small teams of kids get together and play some pre-made levels in *Mario Maker*. We felt it was vital they had a chance to explore and discuss, in this game specifically, since only a small proportion of them had extensive experience with it. As they were playing, we spoke with them about what they liked about the levels they were playing and what they they would want to alter or improve. After they had a chance to play in pairs for about 45 minutes, we brought them together into a large group. In the large group discussions that ensued we began to critically assess the design elements of the game versions they played and what they might alter if they were given the chance. They came up with great observations. It was clear that the features of *Mario Maker* were designed quite well and with children in mind. They reacted very positively to the fun interactive elements of the game (e.g., powerups, mushrooms, bombs, goombas).



Of particular interest to us was the amount of control kids wanted/expected to have when beginning to consider the game more thoughtfully. They enjoyed features that helped them feel empowered (things like bombs and mushrooms) and they were all especially intrigued by the fact that they would in essence get to personalize the game. In fact, that was the thing they were most excited about, getting to make it their own. They referenced other games and experiences on social media where they were really able to personalize (e.g., I like making my own avatar, I like when I can change the colors and the background) and they were raring to go ahead and design their own levels. The children in the group were accustomed to having games that they could alter and own in some way already and were eager to make this their own as

well. We had them begin brainstorming in teams what type of level they would want to create (for example, underwater level, fire level, goomba-centric level).

In our second session, the kids took the ideas they had discussed and used them to create their own levels. At first, the focus was often on the more aesthetic features and they tried to make their levels look cool. Visually they wanted to have balance and symmetry in their designs and lots of eye-catching items. They also expressed interest in humorous things (e.g., a super-mushroom, having 100 goombas stacked on-top of one another) even if those items would impede or interrupt gameplay. However, as they would trade-off with each other and actually play together, the discussions began to shift a bit. Now that someone else was playing they discovered that just because something “looked cool” didn’t mean it was fun to play. In fact, that iterative process was really helped by having one designer stop, trade with another child and have that child actually try to play the newly designed portion. As expected, kids with more experience playing games more quickly seemed to understand the element of actual gameplay in the experience, but even these children thought that making something ridiculously hard would be appealing to others and the occasional argument started because the partner player felt the level was too hard. As they worked, the understanding that each piece they added (or removed) ultimately impacted the player’s experience became more clear. Ideally, we would have additional time to watch the impact of this understanding over time. Did it fundamentally alter how they designed in a concrete way?



Interestingly, the kids who were paired with another child that also had less game experience (e.g., two relatively new *Mario Maker* players) actually spent more time together exploring the space and discussing the impact of various additions and

deletions. In pairs where one child had significantly more design experience than another there was often more conflict as the more experienced child had a clear vision for what they wanted to create and did not appreciate the more uneducated suggestions of the less experienced child. We had a group of three and that was not nearly as effective in engaging all participants as a group of two; one person was always left out.

The editing tools of the game were terrific. Kids reflected on the benefits of the preview function in editing mode and commented that they liked being able to see the path Mario was going to run through and they could see the whole thing when previewing. Of course, the play mode was super popular and the kids really liked watching their peers play their levels. One child noted, "Watching the game is as fun as playing it." Kids with a bit less experience appreciated being able to cooperatively play with one another and take turns. In addition, children with less experience seemed to appreciate the ability of the editor to help them make levels that were a bit easier and more accessible. Kids of all skill levels were active verbal collaborators offering advice, suggestions or helping to locate/find items that would assist the designer/player.



Kids noted that if they were to redesign *Mario Maker* itself, they would make a true multiplayer feature, so that two people could play simultaneously. They felt the delete function was poorly designed and one argument erupted as one child accidentally deleted the other partner's work completely. As one child eloquently stated, "The undo icon is not intuitive." The other primary feature the kids wanted to alter in the game's overall design was the hand icon. When in editing mode, a floating, gloved hand shows up to represent where the child is working. Overwhelmingly they found the hand distracting and in many cases to be a disturbing representation of a hand.

Upon reflection and discussion we decided that children in this age group ideally would have more than two sessions together to explore the design process, and in fact, we may have jumped the gun having them start to think about designing so much in that first session. They began to be so focused on what they *would* do that they did not explore the tools available and ways to think about the content as thoroughly as we wanted during that first session. That initial play and exploration time was not just a fun intro, but an essential piece in the learning process and a key foundational piece for them to better understand the iterative nature of game design.

Though this was just a trial project for us utilizing *Mario Maker* we were intrigued. We have done previous work with the *Portal 2 Puzzlemaker* but even that is targeted towards older children. It was great to see younger kids beginning to think about function, design and user experience. It can be a big challenge for younger kids to step outside their perception to consider whether or not someone else is going to play the game they designed and enjoy it.

This introductory project served as the foundation for a design thinking project we will be doing in libraries and in partnership with the UW iSchool this coming school year, 2016-2017 utilizing *Mario Maker* again!