

Part 1

*Affordances: Bloxels*

1. Interactions can take place in a physical space as well as on a screen
  - a. *Bloxels* can be used with a physical 13x13 board, small colored blocks, and a tablet device. It is obvious to the interactant that the blocks are meant to be placed inside the holes of the board because they have the same dimensions. The different colors of the blocks imply that these colors can mean different things. The *Bloxels* app can also be used independent of the physical board, shown as a separate menu within the app, allowing those who do not have access to the physical objects to make use of the system as well.
2. Camera recognition/capture of physical objects to convert into digital recreations
  - a. When used in conjunction with the app of the same name, the tablet device's camera can recognize the physical game board and convert them into a digital platformer. The interactant is prompted on-screen to line up the game board within the bounding box displayed on the screen. The colored blocks are converted into different sprites and placeholder units that can have different designated meanings (e.g. blue for water, green for walkable terrain, red for harmful terrain, NPC, monster, etc.), which are all listed out within the app itself.
3. Exploration/experimentation is encouraged through modular board design
  - a. Though limited to a 13x13 grid, multiple board iterations can be saved and combined, either by using multiple physical boards, or scanning in multiple scenarios from one board. The physical boards fit snugly against one another on any side, allowing users to visually associate multiple grids to form a single level environment. Each *Bloxels* set also comes with more blocks than can fit in a single board, hinting to the interactant that they are able to build more than just one board. A *Bloxels* game can have up to 169 board environments, indicated in the app's world overview, that can be combined into a single game, encouraging an interactant to design and animate characters or make massive game levels to be explored by a player. Swipe prompts are shown over a navigation system to show the breadth of the environment they can create.
4. Social collaboration is encouraged through sharing game levels and building levels together
  - a. Physical game boards are often shared between interactants, who can collaborate to design characters and levels together. Once transferred to the digital medium, the games that have been designed can be shared via the app's menu option for the Infinity Wall where anyone with the app installed can access game levels, character designs, and more.

*Affordances: Other Projects*

Interactive “Magic Mirrors”

1. Camera recognition of facial features
  - a. The mirror surface is combined with a computer interface so the camera feed can be displayed back to the user. It can recognize unique individuals and track facial features.
2. Voice commands and hand gestures are how the user interfaces with the system
  - a. This is possibly signified by a microphone prompt on screen. Hand gestures that have become conventions are intuitively understood as well (e.g. swipe).
3. Dynamically updated database to track stats and different catalogs of clothing, makeup options
  - a. UI elements can be used to show different clothing/makeup options. There is an additional Bluetooth feature that can track a connected scale for users to keep track of their body weight.

3D Chain Mail NASA Textiles

1. Additive 3D printing process that can build in continuous layers
  - a. Implied in previous knowledge of 3D printers, where there is a physical injector/pointer that spits out the additive material (e.g. plastic). Also implied in the software based on what files it may accept or reject.
2. Adaptable/flexible physical products that can be physically manipulated under great stress
  - a. There are no real signifiers of this, other than seeing the end products physically fold and mold to different shapes and pressures in demonstrations. It can also be seen in the intricate way the pieces are linked together.
3. Reusable components and materials encourage conservation and responsible future application
  - a. There are no signifiers of this. It is implied knowledge of the user, upon seeing the materials the machine can work with, either via software or instruction manual.

Twitch Plays Pokemon

1. Encourages social interaction via competition/cooperation/decision-making
  - a. This is seen through chatroom-based interactions with the computer and other users. The effects of anyone’s text in the chatroom to execute the next command for the character can be observed by others and imitated.
2. Remote control of a single character via multiple input channels
  - a. After inputting a command, a player can wait and see the video game screen where the character is, and see what command gets executed via chat input majority. Because the game is streamed online, the entire system is publicly available and free to play.
3. Implements an anarchy vs democracy system with a time-limit for inputs
  - a. Once the main character executes one command, which takes place every 30 seconds, it is implied to the users that they can then input another command. Players are shown on screen that they can vote for a more democratic round of inputs (via a majority vote), or use the anarchy system that is more of a free for all.

*Scenarios*

1. A video game where players build game levels could be created, where users can dynamically add or modify each other's game level via branching paths and different iterations for a certain amount of time before they are locked out and must return to building their own game world. If the end goal were to reach a certain checkpoint or gate in the world, this switch could happen multiple times until the first person to reach the checkpoint was considered the winner if it were in a Player vs Player mode. A cooperative game mode might have multiple players working on the same level towards the same goal, but with each player having a different building ability (ex. one person can dig downwards, another can make ladders, another can make ropes to swing over gaps, etc.) and a limited amount of time to work per turn.
2. In the future, there would be 3D printers for clothing. A user can step in front of an interactive mirror room that scans their body from all angles and gives an augmented reality overlay to preview clothing and how it may look on a user's body. Users would be able to customize the pattern, color, and fabric type. Once a user has selected an article of clothing, the accompanying printer could instantly print out the outfit, custom tailored based on the dimensions and measurements detected by the scanning software. Users would also be able to save their customized outfits and share it with others in a database of clothing inventory.
3. A social chatroom or video calling app that can make use of any reflective surface in the world, no matter what scale. Users could transfer a call from their phone or smart watch onto any reflective surface to see themselves and the people they are talking to using intuitive hand gestures or voice commands. Each user could remotely control the displays. For instance, if it were a conference call, they would be able to share the same surfaces for note taking; e.g. if a user writes a note using their finger on the mirrored surface, the message is instantaneously displayed/reflected on the receiving party's surface.