Journal: What makes learning meaningful?

Entry 1: Describe your own meaningful learning experience

Your first entry should describe a meaningful learning experience that you have personally had in the past. You should describe one positive experience in detail.

The most positive experience that I have had during a learning experience has been a game that allows you to solve puzzles to get through the game. This instance in particular was for creating a game and learning c#. Such an example of a puzzle would be changing a variable that allows the player to jump higher or creating a bridge by using the built in code editor. This small challenge would then become a frequent part of a later puzzle where this skill is needed to either solve the issue again or to help solve a bigger problem. I have always been a visual learner and so having the puzzle play out in front of me was a big helper in learning about the result of my actions. Seeing the door not open, or the bridge not spawning properly helped me to visually see what had gone wrong rather than looking at a large wall of text. In addition to this, having dyslexia means that my working memory to be much smaller on average than the rest of my skills and so the smaller challenges with constant positive reinforcement for solving small problems helped to keep me engaged with the learning experience.

Entry 2: Assumptions about learning

Your second entry is a simple one: given whatever you have described in the first entry, what assumptions have been made (implicitly or explicitly) about how people learn?

People learn better when they enjoy doing it. Learning becomes much more enjoyable if it is applied to something they like, for example if it was playing games, then applying the same skills to a game could work better for them. One example of this is a game where the player believes they are competing against a computer to solve math problems. Learners are also more likely to enjoy / get involved with learning if it involves a challenge element. If an individual learns by challenging themselves to complete small but achievable goals, the overall experience is more positive and the feeling of beating smaller objectives frequently provides more positive reinforcement than more prolonged periods of learning where the end challenge (for example a test paper or problem sheet) is relatively dull and not as rewarding as gamification.

Entry 3: Theories of learning

Your third entry should focus on theories of learning (behaviourism, cognitivism, constructivism, or any other theories that you research independently).

The learning environment I was exposed to takes a behaviouristic approach of using operant conditioning to reward me as the learner for successfully completing a desired action. This form of conditioning also further allowed me as the user to unlock new levels as I solved previous levels. The game used a 3-star system for rewarding you as a learner for completing the level in a faster time. This total amount of stars unlocked new levels for me as the learner to play. This followed the theories of Skinner who studied the behaviours of behaviour reinforcement. The currency served as a tool to reward me as the learner for completing tasks, rewarding a faster time. In addition to this, the stars unlocked cosmetic items for the player's avatar. This felt rewarding to unlock customisation and helped push the positive behaviour of getting all three stars in a level. While there wasn't a leaderboard, it wouldn't be out of place to have a leaderboard where the fastest times were also

recorded in the level. There was also some positive punishment in place where I as the learner could actually see my mistakes in real time and could make the necessary adjustments to my work so that I would have better luck succeeding next time. This pushed on the human desire to self-challenge.

There was also an element of cognitivism where I as the learner was able to process information from many of my senses, and recall information about previous puzzles to help me solve new ones. This is in relation to the classical information processing model. It is demonstrated clearly in the environment where as a learner I registered the information being told to me (sensory memory), organise the information given (short term memory), and storing the information (long term memory) once I have completed the puzzle with the correct answer.

Entry 4: Theories of motivation

Your fourth entry should focus on theories of motivation, for example, the Lepper and Malone model, the ARCS model developed by Keller and Suzuki, intrinsic and extrinsic motivation as covered in Deci and Ryan's Self Determination Theory, or any other theories of motivation that you have researched.

The main theory of learning in this particular learning experience is the intrinsic motivation that the learner experiences through the gamification of the learning environment. The activities were highly valued by me as a learner and found it to be an enjoyable activity to spend my time on. That is not to say that it was entirely intrinsic. There are aspects of motivation that were also extrinsic. Having a game world with levels put a sense of challenge on me as I wanted to get as far as possible into the levels so that if I was to show off my progress, I would maintain my position ahead of any competition. Motivation can also come in other forms such as fear of failure or bribery. My personal motivation stems from the fact that I am the first and only member of my immediate family to go to university or have any high-level education so the factors that affect my motivation are external pressures to make them proud, personal commitment to succeed and a fear of failure of the possibility of not passing.

Malone and Lepper's model of intrinsic motivation involves challenge, curiosity, control, fantasy and interpersonal motivations. This particular environment encompassed all of these different motivational factors. I was challenged with solving each puzzle using the knowledge I had been taught while not having it so hard that I cannot solve the puzzle and become discouraged. The constant curiosity of presenting a problem and letting the different solutions to the puzzle play out in my mind or in the game space. The power of control, letting me as a learner experiment with different ideas and let me have complete control of how I approach a problem encouraged me as a learner to try new ideas out without the fear of failure. Having me as a player in the game allowed the fantasy aspect to be explored and let me feel as though I was truly part of the adventure through my avatar in the digital world. The interpersonal motivations were the star system that let you show off a high score to others and having other people recognise the speed that the tasks where carried out.

Entry 5: From real to digital

Your fifth, and final entry is about the move from "real" to digital. Your learning experience is likely to have taken place in a face-to-face environment, but don't worry if that's not the case. The key here is to think about those features of the experience that made it meaningful: what were they, and how could you recreate them when designing a technology-enhanced learning experience? This is a very important step in the design process: when designing technology for learning, many of us simply copy what we're used to. However, much of the technology-enhanced learning that is out there isn't particularly inspiring, motivating, or well designed. It's not always clear that the designers have thought long and hard about how to best engage and motivate their learners. So, it's up to you to break the cycle!

The most important aspects of the environment were the constant rewards and the positive reinforcement of every interaction. Each door opening or puzzle solved felt like a massive achievement and really drove me to continue to want to play more. Recreating this type of activity can be achieved using digital currencies, achievement badges (for a sense of completionism). Allowing an avatar in the game space creates a connection with the user to the environment and also allowing customisation adds to that and adds a sense of belonging to the learner. These are the necessary steps to make a similar learning environment with an inviting feeling.