**\*Professor James Gee’s Learning “Principles”**

**Empowered learners**

1. **Agency**: Learner must feel like an agent-co-designing-think like a designer
2. **Customization**-feel like what they do that matters: solve problems in different ways, invite you to try something new in a fairly safe place.
3. **Identity**-what sort of people use this information-who am I going to be, what am I going to get. Give you clear goals with an avatar. Should see learning as an invitation to try a new identity.
4. **Manipulation:** when humans feel they can manipulation something the go into the space-we have married our body to the game space. Game offers tools to access the learning.

**Problem-based learning**: Solving problems: school concentrate on learning facts.

Using facts as tools. Games are interesting because you are given good tools.

1. **Well-ordered sequencing:** human mind needs sequencing is core to design. Each level of a game is teaching you how to solve problems.
2. **Pleasantly frustrating**: At its best when you feel a challenge, but you know that you can eventually do it, within the ‘regime” of confidence; Gives rise to FLOW.
3. **Cycle of expertise:** Challenge-Practice-knowledge-mastery…then give new challenge. Up the scale of knowledge. Boss battles- until it doesn’t work any more
4. **Information:** just in time. Information is effective when given just in time. You get it when you need it: on demand.
5. **Fish tank-**when trying to solve problems, you need to have a way in to the information.
6. **Sandbox:** opportunity to be in a safe place, but feels risky…Learners need to explore, play. Sims is an example. Allows exploration at a level.
7. **Skills under strategies**- to get good at any thing you have to practice. Take skills and put them under a strategy. Skills are under a goal. Focus on the goal.

**Creating deep learning**

1. **System thinking:** Understanding complex systems. People need to understand how complexity works. Game is a “set of rules that interact in a way to get to goals”. Model based reasoning. Core way to teach system thinking-model based reasoning.. The foundation of scientific reasoning.
2. **Meaning as action:** Situated meaning. Meaning as action.

\*Watch: “On Learning With Video Games/ https://www.youtube.com/watch?v=JnEN2Sm4IIQ&t=7s