



When people think about learning and education, they often think about one person transmitting information to another, like this:



Increasingly, educators are recognizing that this “transmission approach” doesn’t work very well. Research has shown that people learn best not when they are passively receiving information, but when they are actively engaged in exploring, experimenting, and expressing themselves (sometimes known as the 3 X’s).

More and more schools are focusing on learning-by-doing, engaging students in hands-on activities. Computer Clubhouses follow a similar strategy, but go a step further: members don’t simply get their hands on computers, they use computers to design, create, and invent things. It’s not just learning-by-doing; it’s learning-by-designing.

Further reading...

Mindstorms: Children, Computers, and Powerful Ideas, by Seymour Papert (1980). An inspiring book by a pioneer in the uses of new technologies in education.

Rethinking Learning in the Digital Age, by Mitchel Resnick (2002)
www.media.mit.edu/~mres/papers/wef.pdf

Why Design?

Design projects engage kids as active participants, giving them a greater sense of control and responsibility for the learning process.

Design projects encourage creative problem-solving.

Design projects are often interdisciplinary, bringing together ideas from art, technology, math, and sciences.

Design projects help kids learn to put themselves in the minds of others, since they need to consider how others will use the things they create.

Design projects provide opportunities for reflection and collaboration.

Design projects set up a positive-feedback loop of learning: when kids design things, they get new ideas, leading them to design new things, from which they get even more ideas, leading them to design yet more things, and so on.

Constructivism and Constructionism

The Clubhouse learning-by-designing approach is inspired by two important theories of learning and education.

The *constructivist* theory of learning, developed by Swiss psychologist Jean Piaget, views learning as a very active process in which people continually construct new knowledge from their experiences in the world. According to this theory, people don’t *get* ideas, they *make* them. Constructivist theory is the underpinning for many educational reform initiatives.

The *constructionist* approach to education, developed by MIT professor Seymour Papert, is based on two types of construction: it argues that people construct new knowledge especially well when they are engaged in constructing things in the world. They might be constructing sand castles, LEGO machines, or computer programs. What’s important is that they are actively engaged in creating something meaningful to themselves or others around them.