What is the future of e-learning?

E-learning is here to stay. As computer ownership grows across the globe e-learning becomes increasingly viable and accessible. Internet connection speeds are increasing, and with that, opportunities for more multimedia training methods arise. With the immense improvement of mobile networks in the past few years and the increase in telecommuting, taking all the awesome features of e-learning on the road is a reality with smartphones and other portable devices. Technologies such as social media are also transforming education constantly.

Generally speaking, learning is expensive, takes a long time and the results can vary. E-learning has been trying for years now to complement the way we learn to make it more effective and measurable. The result now being that there are a number of tools that help create interactive courses, standardize the learning process and/or inject informal elements to otherwise formal learning processes. Several e-learning trends can give us a clear view on how the future of e-learning and learning tools will be shaped:

Micro-learning focuses on the design of micro-learning activities through micro-steps in digital media environments, which already is a daily reality for today's knowledge workers. These activities can be incorporated into a learner's daily routines. Unlike "traditional" e-learning approaches, micro-learning often tends towards push technology through push media, which reduces the cognitive load on the learners. Therefore, the selection of micro-learning objects and also pace and timing of micro-learning activities are of importance for didactical designs. Micro-learning is an important paradigm shift that avoids the need to have separate learning sessions since the learning process is embedded in the daily routine of the end-user. It is also perfectly suited for mobile devices where long courses can be overkill.

Gamification is the use of game thinking and game mechanics in a non-game context to engage users and solve problems.

Personalized Learning is the tailoring of pedagogy, curriculum and learning environments to meet the needs and aspirations of individual learners. Personalization is broader than just individualization or differentiation in that it affords the learner a degree of choice about what is learned, when it is learned and how it is learned. This may not indicate unlimited choice since learners will still have targets to be met. However, it may provide learners the opportunity to learn in ways that suit their individual learning styles and multiple intelligences.

The distant future of eLearning: Automatic learning

In a well-known scene from the movie *The Matrix*, Neo lies down in a high-tech dentist's chair and straps on a wild array of electrodes, downloading a series of martial arts training programs into his brain. Afterward, he opens his eyes and speaks the words geeks have been quoting ever since: "*I know Kung Fu.*"

This type of automatic learning might sound like a dystopian future for many but it is where we are heading. And despite the ethical questions that may arise, the benefits could be substantial at multiple levels if used properly. Here's how it works: you pick a task that requires high performance from your visual cortex such as catching a ball. Then you go find someone who's a pro at catching a ball, place them in an fMRI machine (http://en.wikipedia.org/wiki/Functional_magnetic_resonance_imaging) and record what's going on in their brain whilst they visualize catching a ball. Then you've got your ball-catching program, and you're ready to learn. Next step: put yourself into the fMRI machine, and rig it to induce that pro ball-catching imagery that you recorded earlier in *your* brain using neuro feedback. You don't even have to be paying attention while this is going on. Your brain, though, becomes familiar with that pattern - which is essentially what learning is: the brain becoming familiar with new patterns.

Research has shown that this fMRI pattern playback can cause long-lasting improvement in tasks that require visual performance. In theory, a type of automated learning is a potential outcome and what e-learning in the distant future may look like.