



Cultivating the Imagination: Building Learning Environments for Innovation

by Douglas Thomas & John Seely Brown – February 17, 2011

The authors explore creativity and imagination as key elements of 21st century learning, focusing on key principles outlined in their new book A New Culture of Learning.

We constantly hear the terms “imagination” and “creativity” tossed around as if they were synonyms. This confusion may impair our ability to cultivate imagination in our students and to enhance their understanding of innovation.

As we argue in *A New Culture of Learning*, these two ideas are not only distinct, but they offer very different perspectives on the problem of innovation. Just as teaching and learning are both components of education, creativity and imagination are components of innovation. Put simply, *creativity* is the ability to use resources in new, clever, or unpredictable ways to solve a specific problem in a particular context. Creativity is *solution based*. In contrast, *imagination* is more of a preamble to a problem. Imagination allows us to ask the question “What if?” It allows us to imagine different problems or different spaces to solve them. In the language of *A New Culture of Learning*, imagination is *inquiry based*.

The Familiar and the Strange

Understanding innovative learning requires us to think about the tension we experience between two different domains of thought, the familiar and the strange. The familiar is composed of the things we know well and understand; it is the landscape of our social and cultural practices and the fabric of everyday life. In contrast, that which is strange to us is outside of our daily or lived experience. It makes no intuitive sense to us and needs to be processed and understood. And that which is wholly strange to us is likely to be dismissed, marginalized, or regarded as irrelevant if it has no connection to our lives.

The relationship between innovation and learning is about finding a relationship between what is familiar and what is strange. Creativity and imagination are both maps that allow us to do that.

When we are engaging in a *creative* activity, we are taking the familiar and making it strange. In doing so, we take items or objects from our daily lives and use them in new or unexpected ways. In other words, we create the strange out of the familiar.

When we behave imaginatively, we do just the opposite: we make the strange familiar. The process begins with a simple “what if?” question where we inject some element of strangeness into the world. In response to that difference, we begin to rebuild the world around that change and ask “If such a thing were true, what would the world look like?” We see this process in action all the time when we watch children play. A child picks up a stick. She doesn’t think of all the different things that can be done with a stick or creative ways to use the stick within the given context. Instead, she *imagines* the stick is something else: say - a magic wand. What follows is the process by which she uses the strangeness of the magic wand to build an entire world in which that strange object becomes familiar. It is that process that we call *imagination*.

When we deploy imagination, what we are doing is literally building a world, a new context, around an object or idea which takes something strange, alien, or out of place, and reconstructs the context of the world so that it makes sense.

In contrast to creativity, which is a particular method for solving problems and finding solutions, imagination is the literal building of a world around a new idea. When a child picks up a stick and imagines it is a magic wand, she needs to construct an entire world in which the incorporation of that strange object (e.g. the magic wand) can be read as familiar.

The *problem* is no longer one of finding a solution, but is instead a question of closing the gap between the familiar and the strange. Creativity, then, is the process of *making strange* while imagination is the process of *world building* to create a new context in which the strange, the new, the different can be understood as familiar.

Cultivating the Imagination in Learning Environments

Much of what we consider world building has been lost through the evolution of mass media. The age of radio presents a classic example, where those who listened to *The Shadow* or *Buck Rogers*, needed to engage their imaginations to literally picture the scene that was being described to them. They were environments that cultivated imaginations.

Much of what we argue for in *A New Culture of Learning* is the transformation of learning from a mechanistic model to an environmental one. This is especially vital when we think about the connection between innovation and learning. Environments are changing landscapes where minor adjustments or additions can have radical and transformative effects. Machines are modeled on a principle of efficiency and intolerance of difference or change.

While *creative* solutions may lead us to build more efficient machines, we will find that those kinds of solutions are of little use to us if efficiency is no longer the name of the game. When we think of innovation, we move toward models geared much more to learning styles that embrace experimentation, design, and play.

What is critical, however, is that we understand that learning is a play between context and content, not the absence of one or the other. Imagination is as dependent on the familiar as it is on the strange in order to construct what we have called a “bounded learning environment.” Imagination is at its most potent when it is tethered to a problem space that has real constraints, not only because it allows for focus but because it also provides a context to transform.

Innovation is at its most powerful when it works through imagination. While creative solutions are important, the power of imagination takes innovation to a new level, because when we create with imagination, we are not simply responding to a problem; we are building worlds. The material, cultural, or information artifacts that result can’t help but change the world, because they have a new vision of the world embedded in them. Creativity alters content. Imagination reshapes context. And we believe that in the world of the 21st century, where the tools at our disposal are powerful enough to reshape and re-imagine worlds, innovation without imagination will always give way to any vision that is powerful enough to create new contexts.

Imagination is a quality we all have, and it is an unlimited resource. The goal of education, training, and innovation spaces is to create and structure an environment where imagination can flourish. Those environments need to possess three qualities:

A Space to Ask “What If”

In order for imagination to flourish, there must be an opportunity to see things as other than they currently are or appear to be. This begins with a simple question: What if? It is a process of introducing something strange and perhaps even demonstrably untrue into our current situation or perspective. The imagination has to reconcile what is imagined within the boundaries of what is actual and therefore must understand how the world would have to change in order to make what is imagined a reality.

Tools and Technique to Re-Imagine Context

The work of imagination only has a payoff if it can be put into practice. That means that the context needs to be shaped and articulated in a meaningful way. In the 21st century we are surrounded by tools that allow us to reshape and re-imagine context all the time. From social network sites, to video and music distribution, to web design and production, we are surrounded by opportunities not just to create new content, but literally to transform the context in which that content has meaning.

A Network of Imagination

Imagination can only flourish when there is a networked collection of people to share that imaginative vision, embellish it, and develop it. What we have elsewhere called “networks of imagination” are shared tools of communication and in some cases co-presence that allow groups of people to construct those imagined realities in practical and concrete ways. Today’s networked technology is more than just a conduit to communicate information; it is a platform to share and network imaginations. Technology, like never before, has become a tool to build worlds.

Creativity and imagination are each important tools for the growth and development of learning in the 21st century, but it is critical that we understand how each operates in order to better use our resources to understand, build, create, and play in the knowledge economies and environments of the digital world.

All of our learning environments would do well to take a cue from the past and think about how to imagine new worlds. As we take leaps of imagination, we start building the worlds where these new ideas make sense. Success in the 21st century will not be found in creative solutions to old problems. Success will be shaped by the imaginations of those who dare to construct new worlds that embrace the change around us and have the power to make the strange, the daring, and the revolutionary familiar.

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