Plant Curiosity to Harvest Creativity

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If you want to become more creative, first become more curious. Curiosity and creativity are symbiotic—you can't have one without the other—but curiosity is always the first of the two to emerge. Understanding this relationship is vital if we are to help our students develop as creative thinkers.

THE BACKSTORY

Prior to becoming a faculty member in the BYU-Idaho Art Department, I spent 20 years in an industry that required constant creative effort. Creativity is hard work. It has also received a lot of press in recent years. From Harvard Business Review articles with titles like “America's Looming Creativity Crisis” to books like Sir Ken Robinson’s Out of our Minds, much has been said about the increasing value of creativity along with its alarming decline in both business and education. In response, creativity has become a priority topic for many institutions. Innovative educational programs, like Stanford’s d.school and business training, and IDEO’s creativity workshops, represent high profile versions of these efforts.

During the past three years of my new teaching career I have realized that, as hard as it is to engage in creativity, it is even harder to teach someone else to become creative. We often struggle to articulate activities that have become intuitive. Because teaching doesn’t allow the teacher to remain inarticulate, I’m striving to better understand how creativity works and what is required to develop it. Our library contains wonderful resources on this subject. I’ve learned that, to grow creatively, one must develop:

1. A deep body of knowledge in at least one area of expertise
2. A playful and flexible mind
3. A desire to constantly reach beyond the status quo
4. Most importantly, curiosity

The connection between creativity and curiosity has been a most enlightening discovery for me. As a result, I made it the topic of my master’s thesis and am now beginning to integrate what I have learned into my curriculum. I’d like to share what I’ve learned to this point.

CURIOSITY AND EDUCATION

The connection between curiosity and learning is well established. Developmental psychologists explain that the curiosity-driven behaviors exhibited by young children allow them to learn. Educational theorists have observed that, “stimulating curiosity is central to education and learning” (Schmitt, 125). So why does curiosity apparently disappear for most people between ages 5 and 15? Although the reasons for this are still being studied the effects are clear. Researchers have noted that, between kindergarten and sixth grade, “the proportion of curiosity-type questions raised by students drops by half” (Chak, 143). As most students’ age they lose interest in learning for its own sake.

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There is another problem involving curiosity and learning. Although there is a general consensus that curiosity is important in education, very few resources exist that attempt to help teachers integrate the two. Unlike creativity, curiosity has garnished little research attention. There simply aren’t a lot of books or papers about curiosity, either in our library or elsewhere. There may be many reasons for this but I’ll mention two specifically.

First, curiosity is complex. How else could it be pinned to topics as diverse as scientific exploration, intrinsic motivation, sensation seeking, and gossip? It is difficult to know how to properly integrate into class curriculum something blamed for instigating all sorts of deviant behavior (Note: during this article I’ll be mostly referring to epistemic curiosity, the type that encourages scientific exploration and is fueled by intrinsic motivation).

Second, curiosity can be scary. It can disrupt well-laid lesson plans and blur the edges of neatly defined course outcomes. It also blurs the definition of “correct answer.” Look into the anxious eyes of a student struggling to complete an assignment that has no defined right answers, tell them they need to stop worrying and instead become more curious, then note the change of expression. It usually isn’t positive.

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Curiosity is the foundation for creative development

Creativity thrives on a strong foundation of curiosity for a few reasons. First, curiosity doesn’t permit one to accept explanations without question or to settle for obvious solutions without further exploration. If creativity is the process of developing ideas and artifacts that are “new, surprising, and valuable” (Boden, 1) then an acute sense of wonder concerning the world, coupled with a healthy skepticism for the status quo, is critical. Without this desire to know we slip into a state of routine which is antithetical to creativity.

Second, curiosity cultivates attention. We certainly can’t become curious about anything we aren’t aware of and attention generates awareness. In fact, curiosity “always emerges out of attention, not the other way around” (Schmitt, 133). Curiosity also affects attention by sustaining it until our curiosity is satisfied. Often, curiosity even envelops related topics, broadening our attention in the process. If, as James Young claimed, “an idea is nothing more nor less than a new combination of old elements” (Young, 10) then expanding our attention fills our minds with the elements needed to produce ideas.

Third, curiosity fuels exploration by encouraging us to override any anxiety we experience when engaging in something unfamiliar. Curiosity encourages the risk taking necessary in creative effort.

Currently, there is little reference material available to guide teachers in establishing a curiosity-focused curriculum. However, we can study other learning-conducive qualities that have been successfully implemented in education. These qualities provide the patterns needed to develop a curiosity curriculum.

Metacognition and Curiosity

In the late 1970s John Flavell attached the name metacognition to the study of cognitive process and then established a two-part framework for discussing it.

The first part, referred to as Metacognitive Knowledge, covers knowledge about how human beings generally approach learning coupled with specific knowledge about “one’s own learning process” (Livingston, 17). It is essentially about knowing how to learn.

The second part of Flavell’s framework is Metacognitive Regulation. It involves developing processes to control and enhance one’s cognitive processes. It is essentially about doing things that effectively encourage learning.

If thinking about thinking enhances the process of cognition then curiosity about curiosity may enhance the process of being curious. In other words, metacuriosity may influence curiosity similarly to the way metacognition influences cognition.
The first step toward teaching curiosity might simply be to teach what curiosity accomplishes. Gaining insight into the purpose and power of curiosity may provide enough motivation to resuscitate latent curiosity and to invigorate curiosity that is already manifested.

Once a fundamental understanding concerning the purpose of curiosity is established the next step is to teach how curiosity works. With metacognition, individuals better develop their own processes for controlling it as they become versed in its mechanics. This may also hold true for metacuriosity. As students become aware of how curiosity works, and how it is working in their own lives, they should be in a better position to regulate their curiosity and to encourage its development.

One way to help students regulate their curiosity may be to help them perceive value in information they are not inherently drawn to. Pluck noted that students’ perception concerning the value of the information they were learning was “the most important aspect underlying curiosity to learn more” (Pluck, 27). Perhaps a teacher’s true responsibility is to help students discover the relevance of any given topic. Perceiving the relevance of a subject has an uncanny way of focusing our attention on it, and gaining attention is half the battle in the fight for curiosity.

**Question Theory and Curiosity**

Another step toward helping students develop their curiosity is to teach them how to ask questions. Dennis Whitcomb proposes that “the contents of curiosity are questions” (Whitcomb, 671) and that “we manifest curiosity by asking” (Whitcomb, 672). Others have noted that “the wording of questions is important” to the quality of learning (Blosser, 4). If this is true then students need to know how to build better questions. Various processes have been developed for improving question asking. Each hinges on paying attention to questions, categorizing them, and reworking them, until the right questions emerge.

Multiple attempts to categorize questions have been developed with each attempt providing further insight into the nature of questions (for a survey of these classifications see Blosser, 13). Value comes from learning about various question types and their qualities. Rothstein and Santana devised an exercise where students rework questions from one type to another. Rothstein explains the transformative moment that occurs when students realize that “the construction and phrasing of a question shapes the kind of information you can expect to receive” (Rothstein, 74).

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**Self-Determination Theory and Curiosity**

Self-Determination Theory involves promoting intrinsic motivation by increasing competence and autonomy (Deci, Intrinsic Motivation 20). Competence represents both the ability to carry out something successfully and the perception that one possesses that ability (Kashdan, 485). Autonomy represents the ability to govern one’s self. In order to feel more competent in any situation we must first feel we are in a position to control desired outcomes (Deci, “Meta-analytic” 693). Perceived autonomy and perceived competence evaporate in the presence of threats, punishment, negative feedback, and surveillance (Kashdan, 484). These negative influences move motivation outside the individual, causing a cascade effect that impairs other intrinsically motivated activities including curiosity.

All forms of curiosity share a common trait with intrinsic motivation: they can be easily disrupted by the same sources that harm competence and autonomy. To encourage curiosity we must first reduce anxiety and extrinsic influences. This may prove difficult as many
students approach their education from an extrinsically motivated standpoint. They focus on grades and are conditioned to study to the test. Attempts to refocus their academic energy toward intrinsic learning can itself create anxiety. However, it is worth the effort to try because, “as anxiety decreases, the tendency to achieve and master increases” (Franken, 337). One way to mitigate anxiety in students is by critiquing their work with the purpose of encouraging curiosity. Critiques, by nature, produce anxiety for those unaccustomed to receiving constructive feedback. Yet, if given in a way that helps students identify gaps in their knowledge (Pluck, 29), then according to information gap theories, critiques will actually increase curiosity.

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Students also stand a better chance of being curious when they perceive their exploration as self-determined. To increase curiosity we must increase autonomy without eliminating the structure that epistemic curiosity needs to thrive. We can do this by allowing students to develop their own questions about what is being studied and by allowing them to establish their own methods for answering those questions. This approach matches contemporary theories in higher education that address ‘open inquiry learning’ and ‘inquiry based learning’.

Developing competence within students should also encourage curiosity. As students master content skills, research skills, and curiosity skills their confidence to continue exploring diverging branches of inquiry will increase. One way to develop competence is to introduce interesting problems that are slightly above the skill level of each student (Csikszentmihalyi, 49). Another is to provide “appropriate and sincere praise,” which has been shown to increase competence (Kashdan, 485).

NEXT STEPS

The product of my research into curiosity (and of my Master’s thesis research) is a workbook designed to introduce my students to its role in their creative development. The workbook covers the topics listed above and integrates activities geared toward helping these students become comfortable with being curious in a university setting. Although the workbook looks finished (designers excel at making things look finished) I’m well aware that it is still in early beta testing. I still have a long way to go toward mastering the art and science of fostering curiosity in my students. However, this step will provide me with valuable experience and a place to start.

It’s possible that integrating curiosity into curriculum will continue opening one door after another, requiring a lot of exploration from educators. But the potential compensation, however, is more than worth the effort if students learn to master creativity in ways that prepare them for the twenty-first century. 🌟

References: