THE WHOLE CHILD BLOG

Exciting New Perspectives on the Scientific Method in Interdisciplinary Learning

June 14, 2013 by Kavita Singh

There has been some progress in the last few years for interdisciplinary studies. It's a trend still in its infancy, but it is beginning to catch on due to great successes from early adopters. Schools are challenging their students with problems requiring learning from traditionally disparate subjects. What will be the next technology in education design to use the best methods of learning in siloed core subjects and apply those methods to other subjects? The first, and most obvious example, will be the use of the scientific method in traditionally nonscience classes.

Since birth, every child understands the scientific method at its core. Not only that, they're supreme practitioners of it. Beg to differ? Well, if you understand the basic principles, it's easy to see that even the smallest of children conduct "scientific experiments" to understand the world around them.

Picture a toddler left unsupervised in her family's kitchen. What is this? It's shiny and a strange color! She crawls over to the object. Will it burn me? Maybe. Can I be sure? Let's try. Nope, but what about *this* one?

When introduced in school, the scientific method isn't so much taught as a new concept as it is *implemented*

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given common knowledge obtained in the first years of life. A physics professor might, for example, introduce basic laws of matter through class experiments like dropping eggs or flinging rubber bands. Trial and error is therefore refined in the educational process, with all its steps outlined and observed, but it's still an extension of the rudimentary tools we each used to help us discover our world for the very first time.

As kids get older, the science classes they take have tended to be the most likely to keep the scientific method in constant use through laboratory experiments like the ones described above. But what about other classes? In the K–12 arena you're not likely to see the scientific method put to its most effective use. It's often not until college that students begin to conduct their own research, and that research is generally directed towards scholarly works.

But for all intents and purposes, students aren't "trial-and-error-ing" in the areas where they really need to be doing so. Whether kids end up volunteering, interning, or eventually working at any sort of organization, there are certain practical skills that students can start learning early on to begin realizing the *how* of making their wildest dreams possible.

This doesn't mean tracking kids into certain careers, but rather, *the opposite*. When young people have the confidence to start something, anything, and see it through, it empowers them. Project-based learning has been catching on for these very same reasons, and there’s no better way to entrust kids with responsibility than to have them *do something*.

But as students get older this method becomes more and more abandoned in classrooms. More than helping kids ask more questions, teachers are made to provide the answers. It has become *what it is* rather than *what could be*.

The question must therefore be asked: What if there was a way to reintroduce the scientific method and reverse the tide?

As interdisciplinary study in schools introduces new technologies for learning, we are looking forward to

students in disparate disciplines being challenged by best practices in education processes from unexpected core subjects. The hope for programs like culturebooster is that the classroom becomes a safe space for failing fast and encouraging mistakes as a method of learning, providing students with the ability to embrace the scientific method without the financial risks that change makers take on in the professional world.

Kavita Singh is the programs manager for culturebooster and Tomorrow Prep. culturebooster is a free and flexible curriculum for middle and high school classrooms, with an integrated crowd-funding platform and backend suite of teacher tools. Students design and lead fund-raising campaigns for their schools or partnered nonprofits.

TAGS

Challenged, Child Development, Critical Thinking, Engaged, Problem Solving, Project-Based Learning, STEM

COMMENTS (3)

alishaikh
June 17, 2013
link

Great work ... working with a new technology is really good it will motivate the children and focus in their studies.NGO in India

Ru
June 24, 2013
link

Is this supposed to be an article or a partial teaser press release for culture booster? I''m sick of reading articles that say nothing. Please don't waste my time

Richard Hart
June 29, 2013
link

I find it upsetting that a review of how children are borne scientists would be considered an article that says "nothing". To me, one of the biggest failures of institutionalized education is that our

schools kill this property in most students.

I found it could be rekindled in unprepared college freshmen by scoring multiple-choice tests, not by just counting right marks, but letting them report what they trusted they knew and could do that was the foundation for future learning and instruction. This produces a different mind set.

Students quickly learned that what was important was what they brought to the exam was what they actually understood. This set of relationships was the basis for further learning. They learned to use higher order thinking when studying: question, get answers, and verify.

After just two experiences with Knowledge and Judgment Scoring over 90% of a class would give up the traditional guessing at right answers.

The free software we used is now hosted by http://www.nine-patch.com for everyone to use. And, yes, there is also a program, built on Knowledge and Judgment Scoring, that displays the results in a form that is easy for students and teachers to use as student change from passive pupils to self-correcting high quality achievers. It allows others to help pay the bills without spending time and money playing non-profit..

Richard A. Hart, PhD

Professor of Biology, Emeritus

NWMSU

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