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Newsletter

Special Interest Articles

Individual Highlights

2015 Summer Intensive Institute

for the Vigo County Schools
Workshops for Middle School STEM Teachers:
Integrating Indiana Academic Standards

Week One: June 8th – June 12th Earthquakes and Engineering
Dr. John Aidoo, Associate Professor of Civil Engineering, RHIT, Department of Civil Engineering

Sessions focused on earthquakes and engineering for earthquakes. A brief history of earthquakes throughout the world was discussed along with the mechanics of earthquakes and how earthquakes are measured and monitored. Bridge building and the building of buildings that can withstand earthquakes was the central focus. Engineering principles were presented and applied. Activities during the workshop included building model bridges from straws and buildings built from toothpicks. These were tested for earthquake stability. Model earthquake shake tables were also designed by teachers for testing stability of the structures. Math content integrated into these sessions included geometry, basic math skills, measurement & basic algebra.

Week Two: June 15th – June 19th Properties of Matter – Inquiry in Action
Dr. Edward Mottel, Professor of Chemistry, RHIT, Department of Chemistry & Biochemistry

These sessions focused on the study of the properties of matter including physical and chemical properties. These activities were developed by the American Chemical Society Education Division for K-8 Science. A central theme was: "Investigating Matter through Inquiry". Activities included studying the solubility of common substances, the properties of liquids and solutions, the densities of common substances and the basic chemical properties of substances. These activities all involved using safe, mainly common household chemicals including some really good exercises using M & M's. Math exercises incorporated in these sessions were solubility and density calculations.

Week Three: June 22nd – June 26th DNA & Genetic Traits
Dr. Renee Rogge, Professor of Biology and Biomedical Engineering, RHIT, Department Biology & Biomedical Engineering
Dr. Jennifer O'Connor, Associate Professor of Biology and Biomedical Engineering, RHIT, Department Biology & Biomedical Engineering

Sessions focused on the study of DNA and Genetic Traits. Unique models of DNA were built by participants that represented the double helix of DNA. These models were made from Twizzlers (Red Vines), mini-marshmallows and gumdrops. The structure of DNA was discussed extensively, along with transcription and translation processes (basic molecular genetics). The genetic code provided by DNA was modeled in various ways by the instructors. Participants took a look at and inventoried common genetic traits that can easily be observed, measured and collected in a classroom including family traits. Math exercises that were incorporated were percentages and probabilities of traits present in a population or that can occur through inheritance.

Duke Energy Sustainable Energy Experience

From July 12th – July 17th, 2015, Rose-Hulman PRISM facilitated the Duke Energy Sustainable Energy Institute on the Rose-Hulman Institute of Technology campus. This institute was funded by Duke Energy of Indiana. Nine Indiana High School Science & Agriculuture Teachers participated in the institute. The purpose of this institute was to provide the teachers a true "boot camp experience" in sustainable energies combining academic professional development on the Rose-Hulman campus with vocational experience through site visits to some alternative energy providers in Indiana.

During the institute, teachers developed standards-based, practical and comprehensive lesson plans for units on sustainable energies. Time was provided each day to help guide the development of their lesson plans. They were asked to incorporate lessons learned at Rose-Hulman and in the field.

Upon completion of the institute and after developing comprehensive lessons for their own classrooms, each teacher received a Microsoft Surface device to take back to their respective schools. This included an attractive software package and some accessories. Teachers also received, upon completion of the institute, 50 PGP's for using for their Indiana Teacher's License renewal.

All participants were housed in a resident's hall on the Rose-Hulman Institute of Technology campus during the institute. Meals were provided through the Food & Dining Services in the student union.

Main Topics:

- U.S. Power Grid
- Energy Conservation
- Solar Energy
- Geothermal Energy
- Wind Energy
- Bio-refining
- Nuclear Energy

Alternative Energy Site Visits:

- Duke Energy - Cayuga Power Plant
- IND Solar Farm - Indianapolis International Airport
- Ball State University Geothermal Facilities
- POET Bio-refining - Cloverdale, IN

5 Conditions that Support Great Teaching

eSchool News, Daily Tech News & Innovation
May 22nd, 2015

Stakeholder group will develop report, advocate for conditions that are conducive to excellent teaching

The National Commission on Teaching and America's Future will lead a collaborative, action-oriented initiative to support great teaching.

It will culminate in the release of an upcoming report that will include action steps, policy and practice recommendations, as well as a retrospective look at what has happened in the teaching profession since 1996 following the release of NCTAF's flagship report What Matters Most: Teaching for America's Future.

The three-year initiative will include hosting joint convenings around key issues that impact the teaching profession; establishing a collective research agenda; developing tools and strategies to support teachers, both in their classrooms and careers; and building a repository of best practices, case studies, and positive examples of components of great teaching to highlight what is working well in schools.
"Now, more than ever, we need to ensure that all students have access to great teaching. It is going to take a concerted effort like this to guarantee that both teachers and students receive the necessary support from the federal, state, and local levels to be successful," said Linda Darling-Hammond, NCTAF Commissioner and Charles E. Ducommun Professor of Education at the Stanford Graduate School of Education. "By pooling our brain power, research, and innovative ideas, this group has the potential to address all of the key issues that fall within the teaching continuum."

The country's 3.4 million public school teachers need the proper support to prepare today's students to enter a job market where, it has been estimated, 65 percent of those students eventually will be employed in jobs that have yet to be created. In addition, the U.S. Chamber of Commerce estimates that more than 6.6 million STEM jobs need to be filled by 2022, which outpaces the growth rate of non-STEM jobs by about six percent.

"Our nation is at a critical point in time where the demands on teachers, parents, and students, as well as the education and job market landscapes, have changed dramatically. With the leadership of the Commission and the expertise in this stakeholder group, we believe this initiative will offer the guidance and direction needed to help move our schools forward," said The Honorable Richard W. Riley, Co-chair of NCTAF and former U.S. Secretary of Education under President Bill Clinton.
"We know that this is an ambitious, but necessary, undertaking. As an independent organization, NCTAF has a track record for bringing disparate groups together and tackling the most complex education issues with a singular lens on what is best for teaching and learning," added Ted Sanders, Co-chair of NCTAF and a former Deputy Secretary of the U. S. Department of Education under President George H.W. Bush.

To date, more than 30 leading education organizations, representing research, policy, and practice, have signaled their support to participate in this unified effort. NCTAF will work with the stakeholder group in two significant ways – to develop content and research for the 2016 report and to understand, synthesize, and promote the conditions that support great teaching.

Read more online at: http://www.eschoolnews.com/2015/05/22/nctaf-great-teaching-097/

Challenges in Education: A Student's-Eye View

By Hunter Maats and Katie O'Brien, June 10th, 2015
EduTopia

As many teachers know, the national discussion on education is overcrowded with opinions on teacher training, salaries, tenure, and unions -- with occasional detours through iPads, textbooks, and national policy. In fact, it seems that we listen to every interested party except the one for whom education exists in the first place: students.

We've worked one-on-one with hundreds of students over the last decade, and while they always start from "my teacher hates me" or "I'm just bad at this subject," a change in their own behaviors and beliefs consistently leads to a turnaround in grades. We've seen firsthand all the ways that students can impede their own academic performance. We've seen how parents and our culture at large unwittingly sabotage students' success. And then we've seen our society give teachers full responsibility for a process that is only partially in their hands. That has to stop.

Teachers are essential and influential, guiding their students through new material, drawing out analysis and excitement about ideas. But even the best teacher is helpless against the student looking straight at the board but thinking about lunch. Students are, ultimately, the only party with the ability to truly transform the state of education. And as it turns out, what they have to say is quite telling.

What the Students Are Thinking

A year ago, we were approached by The Princeton Review to help them design a survey about Student Life in America. Rather than focusing on academic performance, they wanted to understand students' academic process. What goes through their heads when they do homework? Where do they turn for help when they're stuck? How do they think and feel during a typical school day? In short, the survey was designed to find out what only students can know: their thoughts, feelings, and goals. The results suggest that if we want to fix education, then we have to move away from blaming teachers, resources, or classroom size, and start talking seriously about what students are doing to create academic success -- and how we can best support them in that process.

Here are some of the survey's most telling results.

Too much homework or too much homework time?

Students readily reported that they spend one-third of their study time stressing out. We hear parents and students constantly complain about teachers assigning too much homework. Based on volume of hours alone, that makes sense. However, what the students have reported provides a totally different picture.

For every three hours that students seem to be spending on homework, only two are productive. Concerns about whether they'll do well, whether they're smart enough to understand the assignment, what grade they have, and how everyone else in class is doing can derail them in a major way. We could cut out that hour so that the work gets done and they can move on. Rather than assigning less homework, we should focus on helping students work more effectively. In preparing students for the modern world, that strategy is essential. In the working world, they won't have time to spend one third of their day unproductively stressing out. They need to learn how to stay on top.

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Challenges in Education: A Student's-Eye View

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They do care. . . about the wrong things.

One of the most interesting results was that 90 percent of students reported that they want good grades. For an educator, that's thrilling to hear. But only six percent of students want good grades for the sake of learning. Many students are so concerned with grades, tests, and college admissions that they've lost what's really important about school. When they're not succeeding, they feel terrible about school. The irony is that the act of learning in itself releases dopamine, the brain's ultimate feel-good chemical. That's why those "aha!" moments feel so good. We can help students make that virtuous cycle happen. Better grades and scores matter, but you don't get them by focusing endlessly on them. Better results come from finding better ways of working -- from improving process.

So What?

When students are so obsessed with results -- what they need to learn andwhat grades they'll get -- that they ignore how learning works. The frequent explanations ("math is stupid" and "my teacher just hates me") are obviously unproductive and untrue. But the survey participants made it clear that we must help students by making sure that they need to know how to learn, manage their stress, ask for help, and get that dopamine kick they deserve.

Here are just a few survey-inspired ways to help your students improve their approach:

1. *Do a side-by-side comparision of cramming and learning.*
2. *Teach your students to substitute action for stress.*
3. *Challenge students to produce actionable feedback.*

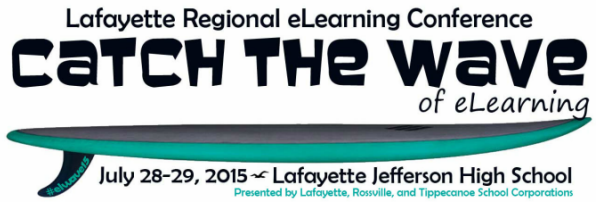
Solutions at Our Fingertips

The fixes that come from listening to kids don't require more money, more resources, or consensus in Congress. Talking to our elected leaders doesn't seem to have fixed education. Talking to our kids just might.
How have you gotten your students to take charge of their learning in the classroom? What strategies do you use to help students manage stress? What are your policies for making sure that students can come to you for help?

Read more online at: http://www.edutopia.org/blog/challenges-education-students-eye-view-hunter-maats-katie-obrien

Upcoming Events

Catch the Wave of eLearning



When:

July 28-29, 2015

Where:

Lafayette Jefferson High School

Register: http://elwave.weebly.com/

What PRISM Can Do For You!

- Easily find the perfect teaching and learning resources from our library of over 4,000.
- Save a list of your favorite resources for quick retrieval.
- Create and share lesson plans that teach your subjects utilizing your favorite resources.
- Develop online classrooms with interactive assignments, lessons, quizzes and more!
- Store your classroom materials online so that they are available to you from any computer.
- Reach your students more effectively by using web media for the digital age.
- Earn PGP points by completing PRISM led online Moodle course – either Beginning Moodle or Intermediate Moodle courses are available to you at no cost several times throughout the year.
- Select from free learning resources that emphasize visualization, rich context, staged-problem solving, and electronically enabled collaboration / communication.
- Augment your own dynamic presence in the classroom with teaching tools that mirror the skills needed for success in higher education and the 21st Century workplace.

*Through our strong support from the **Lilly Endowment** and others, we are constantly growing and improving. Check our site regularly to see what new resources you can use in your classroom.*

www.rose-prism.org