



# November NEWSLETTER

## International Society for Technology in Education 2011

*SIGIS provides a forum for discussion that supports the unique needs of independent school educators based, in part, on their often unique features such as individual missions, clientele, and funding models.*

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Dear SIGIS Members,

Happy Holidays and welcome to the Fall SIGIS Newsletter. In what is possibly the busiest time of the year, we hope that you will find the time to read this newsletter, perhaps while enjoying a comforting beverage and peruse our articles about the Keys of Success.

Read how SIGIS member, Thomas Evans, a biology teacher from Rhode Island is rethinking teaching and learning in his classroom. Then, learn from Technology Instructor, Tom Chambers, one of our Texas member, how his students are succeeding by engaging in lessons that are innovative and motivating. Finally we take a look at Online Management tools and the results of our member survey.

We hope you find inspiration in these pages and wish you all the best in the coming year.

Happy Holidays,  
Judy Hoffman  
SIGIS Newsletter Editor

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Listserv: in your ISTE Membership profile

Wiki: <http://independentschools.iste.wikispaces.net/>

Ning: <http://www.iste-community.org/group/issig>

Twitter: <http://twitter.com/#!/istesigis>

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## **Combining New Pedagogies and Technologies to Meet Specific Curricular Challenges: How a Biology Teacher is Rethinking Teaching and Learning**

*By Thomas Callahan, Ph.D  
and Thomas Evans*

Teachers face constant pressure to cover course material and to provide depth of understanding at the same time. This article reviews an innovative pedagogy developed by a veteran secondary independent school teacher to help improve the quality of his AP Biology classes. This teacher, through consulting current research findings and experimenting in his classroom, combined several pedagogical methods that included the meaningful integration of technology and shifting the agency for learning from the teacher to the student. These methods are consistent with the Performance Indicators described by the International Society for Technology in Education in their National Educational Technology Standards for Students and Teachers.

It is important to note that this pedagogical undertaking was not a result of an administrative directive or need for change for change's sake. In fact, it was quite the opposite. Early last spring this teacher reported that he felt that his students were not as engaged as he thought they could be. In response, he slowed the pace of instruction, but was then often unable to complete the full AP Biology curriculum. In addition to achieving a more complete coverage of the material and a better overall experience for his students, he also wanted to allow for the possibility of better results on the final exam. He became interested in the idea of electronic student response systems, or clickers, when his college-aged son reported how much that device had helped him to succeed in challenging physics courses. But the real need for change became crystal clear when moving books out of the used book store on campus. The teacher noticed many of the biology books seemed to have never been opened. When he asked students why this was the case, they readily admitted that they did not read as carefully as needed and sometimes not at all because the material would later be explained in class. As a result, he went to work to investigate engagement and create a pedagogy that would remedy the situation.

First, methods borrowed from blended-learning designs allowed for initial presentation to take place during homework, utilizing a number of teacher-produced and on-line resources. A useful resource in creating that component was *The Blended Learning Book: Best Practices, Proven Methodologies and Lessons Learned* (J. Bersin, 2004). But he didn't stop there. Based on that paradigm, he added online animations, previously developed PowerPoint presentations, and other online resources such as relevant clips from [www.kahnacademy.org](http://www.kahnacademy.org). Eventually, he may add video clips of himself introducing the topic and learning objectives. The goal of the combination of these resources was to require that initial learning take place outside of the classroom. Class time was now designed to address the most challenging concepts and delve more deeply into those that were most engaging. Students describe their present experience with blended learning in statements such as, "I need to have things thoroughly explained and I like that the videos and other content allow me to review." Another student explained that, "It's like having different kinds of learning built in; no matter how you learn, it works."

With the initial learning expected to have taken place before class, the use of clickers allow for initial assessment during the next class period. This immediate feedback allowed the teacher to identify the overall level of engagement outside of class, to track individual student responses over a number of assessments, and best of all, to focus instruction and not spend time on that information that was already well understood. From the students' point of view, the daily assessments force them to "be on their game." One student likened the experience to working in a hospital. In both settings you are working to find a solution, but not necessarily competing with others. It's more collaborative and you review what you missed in the moment to understand it better. This allows for more rapid movement through the dense curriculum.

When the individual assessment results for those topics that were not well understood are

illustrated on a SmartBoard, peer-based instruction is implemented to encourage collaboration and deeper understanding by engaging students in the instructional process. Students seemed most excited to explain this learning opportunity. They noted, "It makes us explain how and why. We teach ourselves and build on what we learned. We learn better by explaining to others. It's not just about being right or wrong, instead you just have to be able to defend your own opinion. It also enhances understanding because you get to see the same issue through the perspective of others." This component was acquired and implemented using the reference *Peer Instruction: A Users Manual* (E. Mazur, 1997). Additional consultation with the author helped to deepen the teacher's understanding of the range and variation of implementation models possible with the peer instruction technique,

All three of these pedagogical methods: blended learning; student response systems; and peer instruction are supported by recent research as useful tools in facilitating the teaching and learning process. Importantly, this teacher did not experiment with random methods or by becoming stricter with the students. Rather, he made the meaningful connection between educational research and the classroom experience. The importance of linking research to practice has become an irreplaceable aspect of industry in order to create a feedback loop between research and development and the needs of the consumer. While not as commonplace in education, a growing movement to link educational research and teaching and to allow teaching to help inform researchers is being encouraged by far-reaching organizations such as *The International Mind, Brain, and Education Society* ([www.imbes.org](http://www.imbes.org)).

Finally, to better understand the impact of different learning environments, initial trials of this innovative approach have taken place in both a traditional classroom setting with stand-alone desks, and in an alternative flexible learning space that allows for easy movement and the reconfiguration of the room based on the activity at hand. Initial reports from students revealed that the new learning process was easy to implement, more enjoyable and produced better learning outcomes. Teacher feedback described improved job satisfaction, broader scope of curriculum covered and more depth of student understanding. For example, after one recent class the teacher commented, "Did you see what they were working on in that class? Every year before this one that lesson takes three classes." His students described that the flexible environment brings them together more and fosters collaboration. They elaborated that facing each other and not the teacher's desk allows you to ask questions to those around you. It's more of a team effort with three people per desk. It also facilitates side conversations that promote learning from each other and not depending on the teacher.

In their book *21st Century Skills: Learning for Life in our Times* (B. Trilling & C. Fadel, 2009) the argument is made for the need to transform teaching and learning to still include, but extend beyond the Three R's. They describe that students also need to develop: Learning and Innovation Skills; Life and Career Skills; and, Information, Media and Technology Skills. Within the area of Learning and Innovation they emphasize the importance of creativity, critical thinking and problem solving and communication and collaboration skills. While the experimental method described in this article is still in its nascent stage of development, initial results seem positive. The authors are particularly pleased to see that this new perspective on teaching, learning and conducive learning environments not only seems to be effective, but is consistent with 21<sup>st</sup> century learning objectives.

***Thomas Callahan, Ph.D is Director of the Merck-Horton Center for Teaching and Learning  
Thomas Evans is a Biology Teacher at St. George's School in Middletown, RI***

## Motivate, Engage, Empower

By Tom Chambers

Motivate, engage, and empower translates as **MEE**, and this holistic approach to the student psyche will nurture the “id” of the individual via innovation and best practices inside and outside the classroom. To ensure student success:

- 1) Innovation must comprise cognitive and creative planning that effectively melds core subject content with technological hands-on opportunities to **motivate**, and **engage** the student;
- 2) Best practices must show relevance and a sense of ownership for the assignment or project to **empower** the student.

Challenging the student to take control of the learning process is tantamount to his/her enthusiasm for and desire to want to know, and complete the task. To take control is to own, and to own is to establish relevance, and give purpose to the process. What is missing in the majority of classrooms today is the address of this sense of “me” [the “id”, the self-centeredness that dictates a youngster’s being] that will transform his/her internalization to one of externalization.

This transformation process in an educational sense is one of situating the student in a learning environment that will respell “me” as **MEE**. In other words, precise **motivation** and **engagement** via cognitive or creative planning and technological hands-on will **empower** him/her to want to learn within the context of doing it his/her way that will provide meaning and excitement and ownership in the finished product.

Add to that an element of transcendence. By finding ways to display student work in public places, students learn that their work is relevant. This in turn build greater confidence, and enhances a student’s self-worth. When real world situations become part of a student’s learning path it may very well beckon the student to begin to think about his/her goals and role in society. And this kind of thinking is a direct result of a student taking control of the learning process.

As a “digital native”, today’s student walks into the classroom eager use technology tools within the curriculum. He/she has high expectations in this regard. If these expectations are not met by the teaching staff and administrators, the “id” of the individual student will not be nurtured at optimal levels.

The overused adages of “tune in”/“turn on” and “tune out” are indeed significant for today’s classroom because students have strong reactions to the digital versus non-digital world. As mentioned, when a student walks into the classroom from a world [digital] that he/she “tunes in” and “turns on” to at his/her discretion, and if the “world” of the schoolhouse is not conducive to whom he/she is via his/her desires and activities, he/she will “tune out”.

As a technology applications teacher of middle school students in 7th and 8th grade, I’ve managed to sustain the “tuned-in”/“turned-on” mode for the past four years, and I can assert and authenticate their “digital desires” and need for taking control of the learning process with the following student success stories:

Typical vocabulary building begins with looking up words in the dictionary for their meanings, and this approach was used initially with this assignment by having students go online and look up the definitions for their assigned words in order to learn word meanings. Retention of this understanding was the important component, and a second approach was used by having the students visualize the meanings in GIMP [freeware; Photoshop equivalent] to begin to move towards remembering the word concepts, and also create digital art ... a “product”.

Vocabulary enhancement came to the forefront with acquired skills of manipulating photographs while utilizing various tools and filters within the software.

This cognitive and creative process placed the students in a new hands-on environment using photo software that required researching the meanings of the words, then translating them to visual forms.

The students took the word assignments in stride and due to the digital nature of the project were able to visualize their meanings, and generate a product for public consumption, thus achieving relevance and transcendence.

This approach is listed with DigitalWish.com and ePals.com. I received the "ePals Exemplary Teacher Award" honoring my achievements for this assignment/project and others. This project is evidenced at:

[http://tomrchambers.com/DA\\_7\\_8\\_RYSS.html](http://tomrchambers.com/DA_7_8_RYSS.html)

By creating Science Power Point Projects, students used PowerPoint to create presentations based on TEKS/TAKS Grade 8 Science concepts. They were challenged to take control of the learning process and make science more exciting and interesting to study. They researched the concepts online, and then used a combination of visuals, text and animation to bring their ideas to life.

The kinetic aspect of animating with text and graphic components was integral to the production process. The students took ownership of static content and made it their own by using the same digital concepts for their school projects that they were already using on personal projects before and after school.

The students took the Science assignments in stride. Due to the digital nature of the project and hands-on hardware/software, they were able to showcase content, and generate "product". In terms of public consumption [relevance/transcendence], several of the PowerPoint presentations were utilized as a part of my presentation ... "Technology and Creativity in the Classroom" ... at the Region 4 Science Conference, Houston, Texas, February 20, 2010. And the presentations are under consideration as supplementary teaching tools for Grade 8 Science. The project is evidenced at:

[http://tomrchambers.com/8\\_ppt\\_science\\_10.html](http://tomrchambers.com/8_ppt_science_10.html)

In my third example, eighth grade students were asked to explore their lives from past to present via a

resume outline to begin to prepare for entry into high school as freshmen. During the process, there was a realization that their participation in and contributions to the educational process along with various achievements and accomplishments over the past eight or nine years had merit and meaning towards their futures as they continued through high school and on to college.

When they sat before their resume outlines getting ready to transfer their information over to a more formal resume format via a Microsoft Word template, there was a sense of awe, pride and self-worth as they went reviewed their listings of objectives, schools attended, accomplishments, skills, work histories, such as babysitting, community work, or helping others, hobbies, interests and references. Even at the "tender" age of 13 or 14, their listings proved to have meaningful content with various building blocks set into place. They could sense the building blocks within their listings, and one student to prove this said that all he would have to do as he progressed through high school was to update his resume he was currently working on so he would be ready for the college application process.

This exercise in self-exploration proved to be a worthwhile endeavor as it related to empowering students to want to continue their educational process to be able to update their resumes as they progressed. This thought alone is a very important one as we all strive to move forward and upward through society with our resumes in hand.

I mentioned to the students that over the years, I had used my own resume close to thirty times to obtain various positions in the U.S.A. and abroad, not to mention that I kept it updated on almost a monthly basis. I showed them my resume and they all understood the importance of this kind of document throughout a lifetime.

The resume files were given to the technology teacher in the high school academy. These files acted as letters of introduction for these youngsters. The principal called the students into his office to formalize the enrollment process by actually going over their resumes online. This added credibility to the resume project in the sense that what the students did in the classroom in the junior academy had relevance to their continuation of the educational process via their resumes at the high school academy level. They realized that their resume exercise was not just for a grade, but also for the more important aspect of be-

ing interviewed for acceptance and recognition at the next level. Again transcendence.

The project is evidenced at:

[http://tomrchambers.com/8th\\_resume\\_10-11.html](http://tomrchambers.com/8th_resume_10-11.html)

Seventh grade students acquired web page building skills in HTML source code writing to incorporate web-based stories for children. The story writing was based on children's books that target 2-, 3-, 4-year olds to teach this age group morals and values. The students were tasked to write original stories that had a message, and then moved their stories into Web page format in combination with visuals/artwork and through the use of hyperlinks to navigate between pages.

I mentioned to the students that their stories could possibly be used in Day Care and Pre-K at our school to convey their messages (transcendence!) One justification for the project was that by writing these kinds of stories, based on morals and values for young children, the process would also have a positive effect on the writers. These seventh grade students began to evaluate who they are and how they behave. . The project is evidenced at:

[http://tomrchambers.com/web\\_stories.html5](http://tomrchambers.com/web_stories.html5)

Eighth grade students used Microsoft Publisher to create 8 1/2" X 11", two-fold brochures to promote their school. They utilized the school's website to collect information, and then worked with this copy, their own words and pictures to put together these promotional publications.

Working with their school website also made them more aware of the inner workings of the educational system, and instilled a sense of pride for their school and what is accomplished by students, teachers and staff. Printed samples were shown to the Superintendent for him to consider utilizing a student-generated publication to present the school to the community, again: transcendence. The project is evidenced at:

[http://tomrchambers.com/scrncap\\_bro/index.html](http://tomrchambers.com/scrncap_bro/index.html)

**Raul Yzaguirre School For Success [RYSS] - Harmony Hills Elementary Mentorship Workshop** –A core group of seventh grade students traveled to Harmony Hills Elementary School in San Antonio to mentor third grade students in the use of graphics software to create digital art within the core subject of social studies. The RYSS students had learned how to use the software in my technology applications classes.

This mentorship process involved an intensive session of learning and practicing, and project application to make digital art. The seventh grade students succeeded in not only keeping the attention of the third grade students, but also making them comfortable with the software and producing gratifying results. The two groups were so engaged throughout the day that the teachers present during the process seemed secondary. The RYSS students had successfully gained a skill, and were empowered to convey what they knew to others ... transcendence.

This mentorship project between RYSS and Harmony Hills Elementary was the third student workshop. The other two were conducted at Crespo Fine Arts Academy and T.H. Rogers School in Houston. The project is evidenced at:

[http://tomrchambers.com/ryss\\_hh.html](http://tomrchambers.com/ryss_hh.html)

Student project listings page:

[http://tomrchambers.com/RYSS\\_TCCC.html](http://tomrchambers.com/RYSS_TCCC.html)

*Tom R. Chambers, Teacher, Technology Applications, Junior Academy,  
Raul Yzaguirre School for Success, Houston, Texas, U.S.A.*

## SURVEY SAYS.....

This month's survey topic was Online Classroom Management Tools.

When asked which online classroom management tools were used: More than half of the SIGIS Members who responded to the survey use Moodle

Followed by (in order)

Blackboard

School Website

Google Apps

Schoology

Blackbaud

EDU20

Edline

Coursesites.com

NetClassroom

Whipple Hill

And Sharepoint

Watch for our next Survey coming to you in February 2012!

In response to our survey question about using web pages to list Homework Assignments, the majority view it as helpful:

I believe it helps the students and the teachers! I sometimes hear the argument that it is important for students to become responsible for writing down their homework in class, so we are enabling them if we post it online. What matters then, is what you believe to be the main purpose of homework. If it is to have the students learn the content important to your discipline, then it is clear, providing students with every opportunity to be successful with the content is most important. Therefore, posting your homework supports the primary learning goals. It also reinforces the skills our students will most likely need in college, an ability to find their assignments and use course support materials from course pages on the web. Last, it saves you time as a teacher. It frees the teacher up so they can spend their time communicating with students about higher level learning topics and concepts, instead of spending precious face-to-face time following-up and reminding them about the rudimentary details of an assignment.

Jill Brown  
Director of Educational Technology  
Albuquerque Academy  
Albuquerque, New Mexico

HELPS if you "direct" them to the site to use from home and not waste classroom time going over the homework assignment. This strategy promotes parts of the NETS-S (5) Digital Citizenship and (6) Technology Operations and Concepts.

Homework should only be used as a drill and practice strategy ONCE students already understand the concept being covered...NOT as a way to figure it out on their own. If they practice the wrong process, then they have drilled into themselves the wrong technique, which will cause more work for the teacher; breaking them of the wrong process only to teach the concept again.

Having parents know about and check the site for homework doesn't really teach students personal responsibility, however, it does persuade the students to be proactive in checking the website for homework so their parents do not get onto them about it. Plus, it keeps an open line of communication open between the parent and teacher.

Ultimately, students will do what they want. As a parent and a teacher, it is our duty to model and/or put into practice techniques or strategies that will facilitate/guide our children to become responsible adults.

Yes! Our integration focus this year is the Digital Student. How can students assess their learning needs, evaluate tools to meet that need and successfully use tools/resources. This is the life they will lead in college and adulthood. We feel that their time here can be constructively used to model and facilitate thoughtful, intentional use of electronic resources.

It helps -- managing one's digital life is becoming an increasingly discrete skill which our students will need to master, and classroom websites can help teach children to work online efficiently.

I think it helps, as it makes it feasible to require students to complete work even if they missed class for field trips or sports, and it eliminates the excuse that they couldn't do the work since they didn't have the materials.

Margaret Spiller  
Ed Tech Coordinator/Teacher  
Ramona Convent Secondary School  
Alhambra CA

Coming in 2012!

Winter Issue: Online Learning Opportunities

Call for Submissions: February 1,

Submissions Due February 10,

Acceptance Notice: February 20