11-1-2001

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Manufacturing Understanding: Brain-based Learning and the Internet in the High School Classroom

**Description**
Over the past ten years, two remarkable influences have begun to make their mark on the high school classroom in an effort to make the high school more meaningful and worthwhile. One is, without question, the influence of the Internet on curriculum, course work and student behavior. Second, and less well-known, is the rise of brain-based theories of educational instruction. Both hold the promise of radically changing the nature of classroom instruction, yet both are struggling to be implemented in such a way as to genuinely improve education. That is, for the web's promise of revolutionizing education to be fulfilled, teachers must be prepared to invest a significant amount of time and effort to design curricular units which integrate the web in such a way as to direct and engage students to be responsible for their own learning. Furthermore, this engagement must motivate students to take risks, do more than they are asked and enjoy learning. Thus, the issue of boredom is replaced with the happy problem of students wanting (and, sometimes, even demanding) to understand.

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Manufacturing Understanding: Brain-based Learning and the Internet in the High School Classroom

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Abstract

Over the past ten years, two remarkable influences have begun to make their mark on the high school classroom in an effort to make the high school more meaningful and worthwhile. One is, without question, the influence of the Internet on curriculum, course work and student behavior. Second, and less well-known, is the rise of brain-based theories of educational instruction. Both hold the promise of radically changing the nature of classroom instruction, yet both are struggling to be implemented in such a way as to genuinely improve education. That is, for the web’s promise of revolutionizing education to be fulfilled, teachers must be prepared to invest a significant amount of time and effort to design curricular units which integrate the web in such a way as to direct and engage students to be responsible for their own learning. Furthermore, this engagement must motivate students to take risks, do more than they are asked and enjoy learning. Thus, the issue of boredom is replaced with the happy problem of students wanting (and, sometimes, even demanding) to understand.

Introduction

Perhaps the most common response of adolescents to activities in the classroom is “that’s
boring.” Yet, there is clearly more to their attitude than just boredom. Students want school to be meaningful and worthwhile but so much of what they are exposed to is anything but engaging.

Over the past ten years, two remarkable influences have begun to make their mark on the high school classroom in an effort to make the high school more meaningful and worthwhile. One is, without question, the influence of the Internet on curriculum, course work and student behavior. Second, and less well known, is the rise of brain-based theories of educational instruction. Both hold the promise of radically changing the nature of classroom instruction, yet both are struggling to be implemented in such a way as to genuinely improve education. That is, for the web’s promise of revolutionizing education to be fulfilled, teachers must be prepared to invest a significant amount of time and effort to design curricular units which integrate the web in such a way as to direct and engage students to be responsible for their own learning. Furthermore, this engagement must motivate students to take risks, do more than they are asked and enjoy learning. Thus, the issue of boredom is replace with the happy problem of students wanting (and, sometimes, even demanding) to understand and learn.

**Background**

For the past few years, I have been teaching in the English, History and Arts Departments at Amity High School. The high school is located seven miles south of Mcminnville, Oregon, in the heart of the mid-Willamette valley wine country. The town and surrounding areas have a population of about 2500 of which approximately 280 are enrolled in the high school.

Historically, most of the students come from an agrarian background, though in the past ten years many of those jobs have disappeared and the residents of the area have been forced to look for work in more urban areas. However, this economic shift has not fundamentally altered the makeup of the school. Less than 10% of the students move out of district each year with many families moving into the district for its small-town atmosphere.

Around 70% of the students have access to the Internet at home or away from school (at a friend, relative or at a parent’s work site). The high school maintains approximately a 6:1 student to computer ratio with at least one computer in almost every classroom and a separate computer lab with 32 workstations. Except for a small handful of students whose parent/guardian does not give them permission to go on-line, all students have access to the web via their own accounts through the school’s server.

In addition, the school maintains its own website, though access to it at this time by teachers wishing to upload their own sites is limited. Plans are on the way, however, to provide each teacher with his/her own homepage to provide content to students.

**Brain-Based/Experiential Learning**

Six years ago, when I was enrolled in teacher school, many of my instructors liked to focus on
the idea that the teacher’s role was shifting from instructor to facilitator. While this might seem like a reasonable belief given the cooperative nature of the modern work force, my experience has been somewhat different. Many of my students come to high school ill-prepared to read and write and a high-school level, let alone be prepared to enter college or the workforce. Therefore, my job is fundamentally one of instruction and facilitation.

In order to accomplish this, I have based many of the activities of my classroom on experiential or brain-based learning models. That is, when developing a unit for my classes, I seek to impact my students in as many ways as possible. Research, like that of Posner and Jensen has found that the context and engagement of meaning delivered in the classroom has as much to do with student learning as what is instructed.

With this in mind, there are six areas (or contexts) I hope to enable when developing a lesson. These are: Expression, Movement, Increased Stakes of learning, Novelty of interaction, Shared-experience and Complexity (for a more detailed exegesis of this material, see Jensen’s *Teaching with the Brain in Mind*). To put it briefly, I attempt to create an environment where students are engaged via many possible alternatives. Whether moving about the room, engaged in an art project in a history class or gambling on their knowledge of current events, the classroom ought to be an environment of manifold engagement.

Therefore, to use the Internet in a way that does not undermine the tenets of this sort of learning, I try to develop sites and hyperlink to others which engage the students on as many of these levels as possible. Students generally are already familiar with emailing, so I expect them to be able to email me questions and even assignments. Moreover, pages with interactive forms enable the students to use their web acumen to complete an assignment. Using the web opens the world up to my students. Using e-pals (other classes who email my students while studying the same topic) and sites built by other students throughout the country, my students see the web as a tool to visit the world, not merely an encyclopedia.

**The Encyclopedia Fallacy**

When most high-school teachers are posed the question “what good is the Internet?,” most respond with one of two answers: “research” or “I don’t know.” This response has little to do with the amount of time teachers spend on the Internet (many, like their students, spend countless hours surfing, emailing and following the latest news of interest). However, when it comes time to integrate the web into the classroom, many are woefully under-prepared to find any useful way to do it.

Due to this lack of understanding of what can be accomplished via the web, most teachers simply suggest that their students use the web to research a topic. For example, a history teacher might assign her students to write a biography on George Washington. Given today’s poorly funded or under-maintained libraries in schools, after turning to encyclopedias and general reference books, many students will turn in a paper which merely recites that simple and basic
A more enterprising student will visit a search engine (perhaps yahoo or google) and type Washington into a search field and thus be presented with a myriad of choices of info. With these links on screen, the student will typically scan to find the most similar sort of info they can which fits their expectations: the encyclopedic-biography model. Then, just as before, the student will cite (hopefully) the source and compose their paper.

Perhaps this sort of utility is satisfactory, but the web can be so much more to the student and to the teacher. It is not, nor needs to solely be an expanded encyclopedia (though most believe it only to be so). However, when the teacher treats the web as a big encyclopedia, that is usually how the student will. Without direct assistance, students are left to wander a bigger library without the assistance of an aid or even a librarian to help them. Thus, most students are frustrated by the web and most teachers do not find it particularly helpful.

**Conclusion — Harnessing Web Resources**

For the teacher and the student to benefit from the manifold opportunities which the web provides, teachers (as always) must do a considerable amount of legwork. This legwork consists of three components:

* Investigating and compiling web-resources. Teachers must create a favorites list for just about every unit they teach. This list of websites should include locations for the students to look at with a nice variety of treatments of the subject he/she is teaching.

* Creating a website/platform. In order for students to easily access these resources selected by the teacher, each unit should have its own website created for the class with links, activities organizational aids.

* Devoted student work time. Just as many students are incapable of using the web effectively as those who use it well. Thus, teachers must include in their lesson planning enough time to explain and review how the web-page he/she has created works and review what the students need to complete upon visiting it.

If a teacher can follow this model, of researching, creating and explaining web-related resources for his/her students, not only to students become more engaged in the classroom, but their understanding of the topic will be dramatically increased.

For example, in my Advanced Junior English classroom, we have been recently studying Nathaniel Hawthorne’s *The Scarlet Letter*. To accompany this unit, I created the following site:

http://www.hevanet.com/spruce/scarlet/scarlet.htm
This site contains hyperlinks to outside web-resources, on-line activities and assignments as well as an email link so that students can communicate with me outside of school. In addition to this unit-specific site, I have also purchased and maintain the domain:

http://www.mrburt.com

as a site devoted to all my classes. Although I am still in the process of developing and updating this site, my hope is that it will serve as a sort of clearing house for all my units and classes. It also contains some notes to parents, schedules and some video clips of activities occurring around the school. These extras are designed to encourage students to visit as well as generate a bit of interest in the site.

Additional Web-Resources

The following is a list of some of my favorite sites (and others related to this article) for educational/classroom purposes:

<table>
<thead>
<tr>
<th>Site Address</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.amity.k12.or.us">http://www.amity.k12.or.us</a></td>
<td>Amity High School's website.</td>
</tr>
<tr>
<td><a href="http://www.americaslibrary.gov/cgi-bin/page.cgi">http://www.americaslibrary.gov/cgi-bin/page.cgi</a></td>
<td>A terrific library site to be used as a jumping off point for research and links.</td>
</tr>
<tr>
<td><a href="http://www.tnellen.com/cybereng/#adopt">http://www.tnellen.com/cybereng/#adopt</a></td>
<td>The Cyber English website. Good all-around resource</td>
</tr>
<tr>
<td><a href="http://www.mrburt.com">http://www.mrburt.com</a></td>
<td>My own personal site for my classes.</td>
</tr>
<tr>
<td><a href="http://www.google.com">http://www.google.com</a></td>
<td>In my opinion, the best Internet search engine.</td>
</tr>
<tr>
<td><a href="http://www.mrdowling.com">http://www.mrdowling.com</a></td>
<td>A terrific collection of topical, middle-school oriented geography and world history sites.</td>
</tr>
</tbody>
</table>

References


**Key Words:**
Brain-Based Learning, Integrated Learning, Experiential, Encyclopedia Fallacy, Web Learning resources, Engaged learning, Curriculum, Amity High School

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nigeria entertainment news
on February 4, 2014 at 10:32 AM said:

I have mastered some important items through your website post. A single other subject I need to talk about is that there are lots of games offered on the market created especially for toddler age children. They include pattern acceptance, colors, family members pets, and shapes. These usually focus on familiarization as an choice to memorization. This keeps modest kids engaged without having sensing like they are studying. Thanks
I and also my buddies came looking at the good tips located on the site and prior to extended I had a terrible feeling I never thanked the world wide web internet site owner for people tips. All of the persons are definitely warmed to learn them and have now definitely been doing one of the most of these things. Many thanks for actually getting really type along with for figuring out specific very great themes most men and women are very needing being aware of. My truthful apologies for not expressing appreciation to earlier.