What Do You Learn? It Depends on Your Digital Point of View

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Introduction

The perspective from which students view materials has changed over the course of time. During formal education’s early years, students had two options for viewing and understanding visual images: text coupled with a sketch, or the physical world and ecosystem they happened to occupy at the moment. As a result, students had access to limited points of view. I do mean the actual perspective—the physical point of view. But digital tools and the Internet have changed this, and like most changes supported by the Internet, that change has happened quickly during the past two decades.

In this three part series I will explore how different categories of digital tools available to students give them access to three fundamentally different points of view: The micro point of view, the human eye point of view, and the macro point of view. These points of view are differentiated by two elements: physical position and magnification. Each of these views provides educators with a new way to think about how to design learning environments.

A Micro Point of View: Before the advent of digital tools, in a Biology class, the sketch of a cell body or a through a standard microscope was the best a student could do. If they wanted see that image again, they had to remember what it was like. Now, with the advent of digital microscopes students can capture still images and video and share these images over the Internet and in print. As a result, a student has access to a vast array of view points within this microscopic world.

A Human Eye Point of View: Before the advent of digital tools, in a History class, a painting or sketch was often the only visual support for students. Coupled with a strong narrative, the student conjured images. Now, with the advent of digital photography and video, students are
able to create and share history through archived photos by documentaries.

A Macro Point of View: Before the advent of digital tools, in a Geography class, an artist’s rendering of terrain helped students see geographic relief. Now, with the advent of satellite imagery, students can now view changing geographic relief in real images and almost in real time.

As you can see, what students learn depends on which point of view they are taking. But, the real change in learning for students will depend on a teacher’s ability to design learning environments that use all three of these points of view. These points of view provide a new way to help students develop deeper understandings across all subjects. For each of these points of view I will explore the digital tools and materials and the impact they have on learning environments and communities.

The Micro Point of View: Digital Tools and Materials

In science the advent of the standard microscope gave students views that seemed surreal and magical. Every year students all over were surprised to see a snake skin magnified at 100x. After class they were left with their memory of the event. But in today’s classrooms digital microscopes are helping students see and record things anywhere from 50x-200x. The ability to record a magnified digital image has become a popular learning edge for students.

One of the most portable, reliable, and useful digital microscopes available is made by Proscope \[1\]. The Proscope offers students and teachers a portable and durable digital microscope that hooks directly into a laptop. It comes with easy to use software that allows the user to capture a picture or a movie. The software even lets the user set the microscope on a stand and program it to take time lapse mpegs or jpegs. The user can also alter the fps (frames per second). A gallery of sample shots provides is available to see on the web \[2\].

New Learning Environments and Communities

One of the most important developments for digital microscope use in the classroom has been the creation and sharing of digital microscope lesson plans and activities \[3\] that are free and available for any teacher to use. As of now, you can choose from a range of lessons and activities that are linked to national and state science standards \[4\]. They include titles like: Comparing Animal and Plant Cell Structure, Analyzing Soil Samples, and Mystery Powders.

To create a community of learners, the Proscope people have use the CSI (Crime Scene Investigation) television show as a model for some of their curriculum and activities. Teachers can even purchase crime scene investigation hats and lab coats.

As of now, the quantity of lessons and activities remains small, but as more teachers develop a web presence and the companies that make digital microscopes understand that teachers will
be more likely to buy and use their products if they have lessons and activities to use right away. This is a lesson that educational software and hardware companies are learning. Teachers often avoid using new digital tools because the learning curve is too steep and time commitment is too much.

**Conclusion**

The micro point of view is one example of how digital tools and the Internet are expanding our students’ points of view. Increasingly students and teachers are becoming the authors with their own points of view. A recent study by the Pew Charitable Trusts [5] found that more than half of teens in the US have created content for the Internet. The content includes: blogs, websites, photography, stories, and videos. Considering this along with the digital tools available to capture different points of view, it seems we are on the cusp of some image driven changes.

**References:**


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