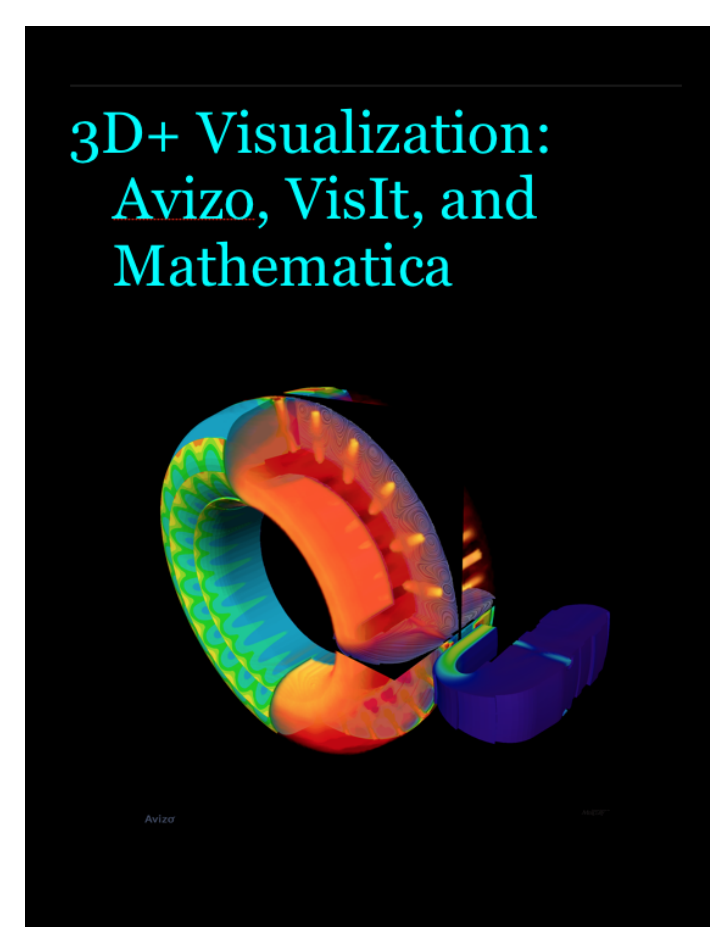


Introduction

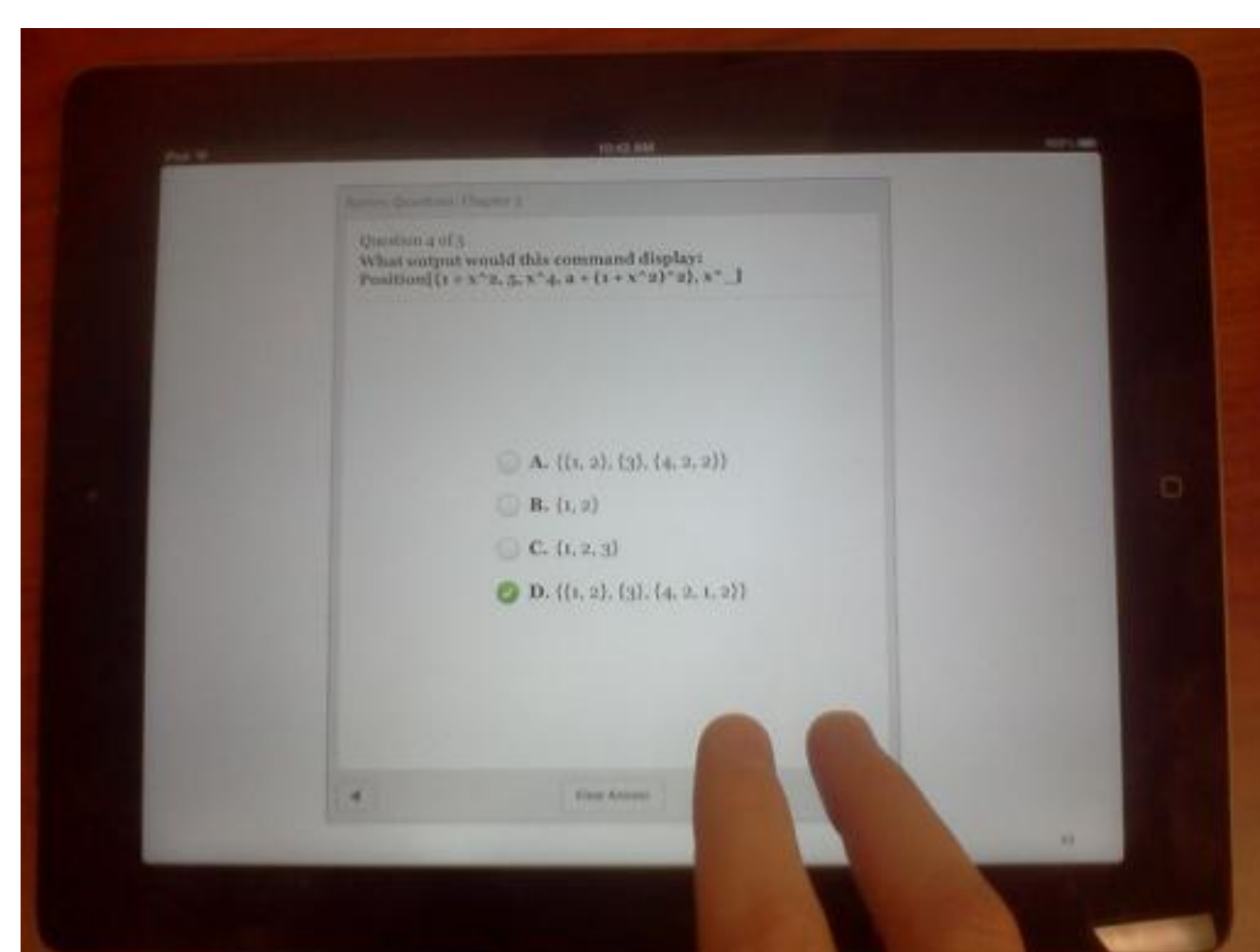
The recent release of Apple's iBooks Author software has created the opportunity to vastly improve the learning environment. The questions now being explored are what separates an iBook from other text and eBooks, and how will they be used when integrated in the classroom. We have created a preliminary copy of a book covering Dr. Les Butler and Jinghua Ge's Chem 4581 course at Louisiana State University on 3D+ Visualization and have explored the many tools currently available for inclusion in iBooks Author. In addition to the iBook, the goal of the high-performance computing (HPC) back-end for the book, and examples of how iBooks and HPC will be used in different teaching environments will be presented.



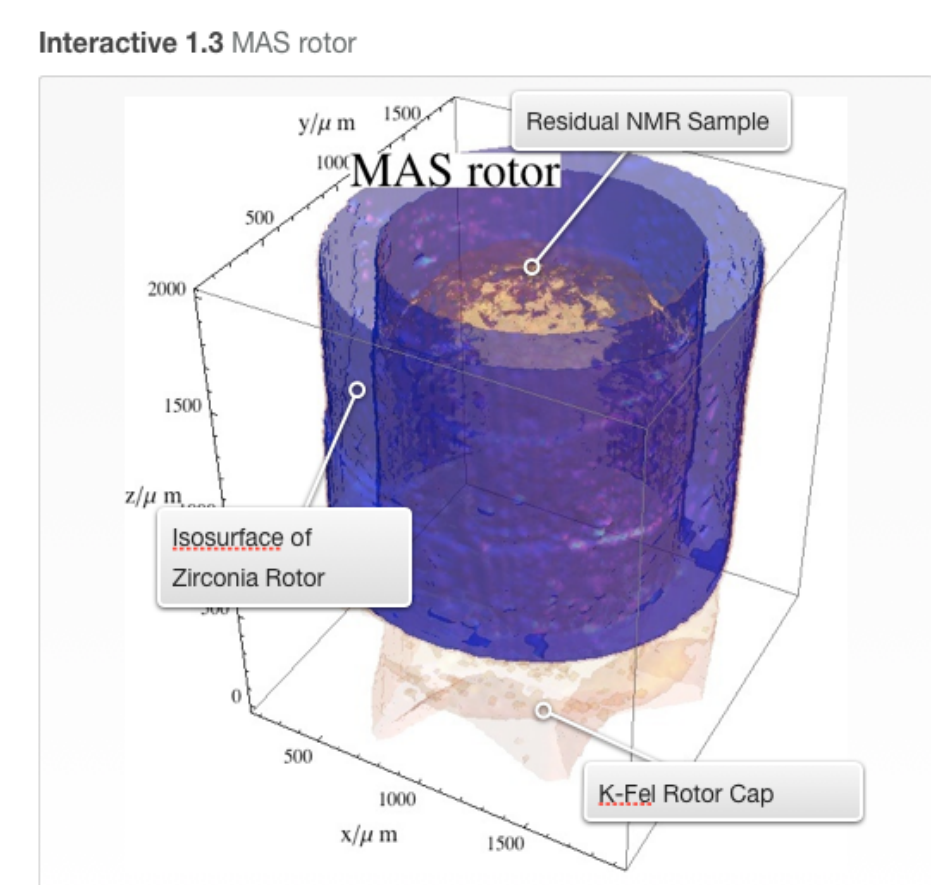
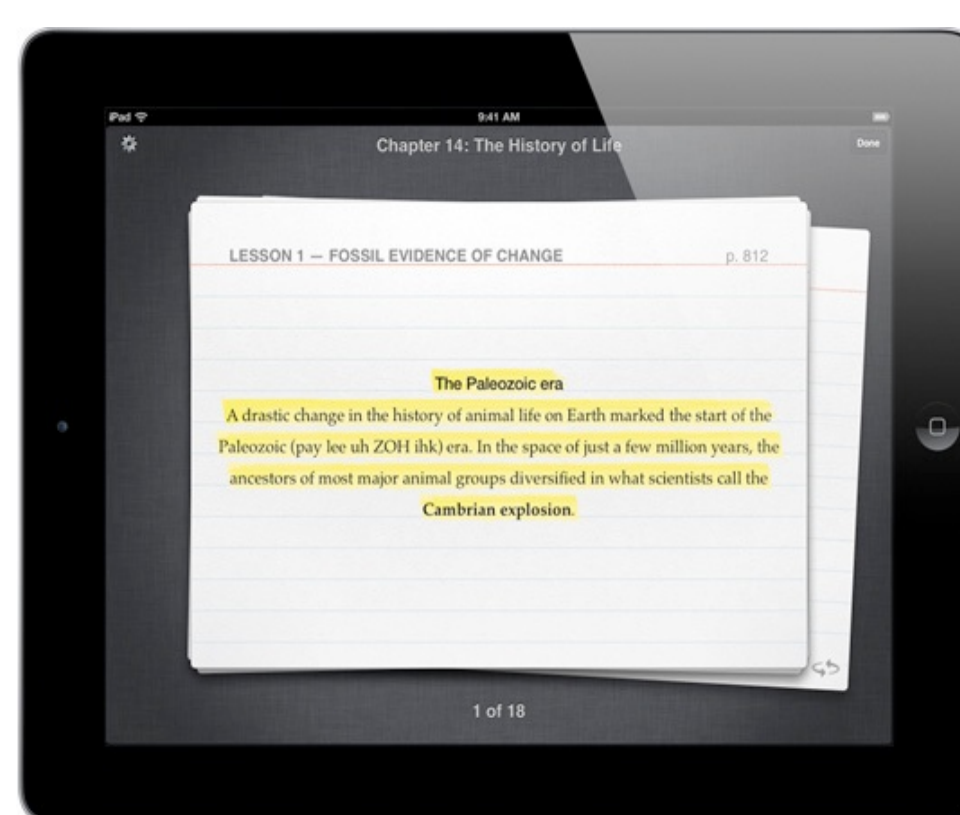
iBook Features

iBooks Author has many features and "widgets" that create a more engaging learning experience.

- glossary
- bookmarks/search
- study cards
- keynote shows
- live Twitter feeds¹
- galleries
- videos
- interactive images
- 3D images
- review sections



interactive questions with instant feedback



Implementing Visualization into High School Curricula

Christopher J. Hynes, Louisiana School for Math, Science and the Arts, Natchitoches, LA



Impetus: Recognition of an emerging skill set: Visualization and HPC

Objectives:

To create a cross-disciplinary course bringing together Visual Art, Science, and Computer Science students and faculty to create visualizations.

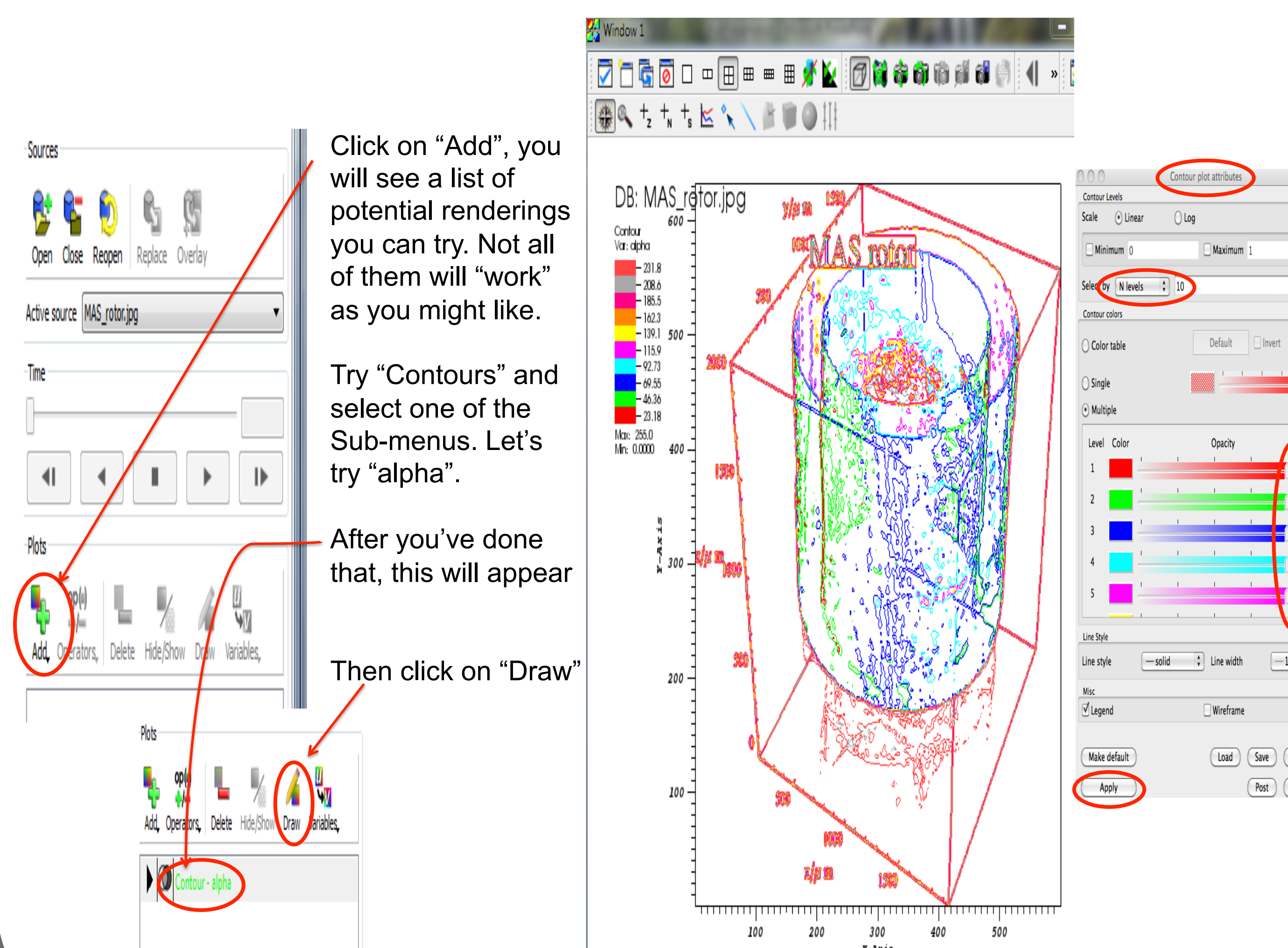
To evaluate the effectiveness of presenting the course in an iBook format especially having access to a high performance computer cluster on the back end.

Target: Louisiana School for Math, Science and the Arts high aptitude and motivated students 25% (on average) accepted to Top 40 colleges²

Instructional material:

- Freeware – VisIt, ImageJ, Sage, LAAMPS, VMD
- Files – various type (h5, jpeg, bin, etc.) and themes
- Hardware – minimum (laptop), optimum (iPad)

Lesson snippet:



Integrating iBook technology into alternative high school science courses

Rayla Hunt, Valley Park Alternative High School, Baton Rouge, LA

Summer 2012: This summer I have been engulfed with the wonderful task of learning how to ultimately create an iBook. I have learned the basics of ImageJ, Mathematica, and the VisIt software. I am carrying away knowledge that I can utilize in my classroom and also assist other teachers in implementing some of the things I have learned through LA-SiGMA in their classrooms as well.

Purpose: To use the iBook to generate student involvement in the course. The iBook will be used as a tutorial, study guide, quiz maker, and project enhancement. The teacher will create mini lessons and individualized plans for students on different learning levels to promote differentiated instruction, which is a priority of the East Baton Rouge Parish School System.

Outcome: The intended outcome is more student involvement therefore increasing in-class engagement and in depth learning. Students will integrate technology into their science lesson and learn themselves how to create an iBook that can be used interdisciplinary.

Future Work and HPC

The next major step in the process is the addition of HPC back-end to support interactive software, such as ImageJ, Mathematica, and VisIt, within the iBook. Through the use of the HTML widget and VisTrails³, an open source server, we will be able to integrate these visualization tools into the iBook for "real time" interaction. The ability to use the iBook as an interface to HPC is a powerful research and teaching tool.

References

- 1) Classwizgets: www.classwizgets.com
- 2) <http://colleges.usnews.rankingsandreviews.com/best-colleges/rankings/national-universities/data>
- 3) Vistrails: www.vistrails.org
- 4) Blender: www.blender.org

Acknowledgements

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