

## Course Transformation of CHMY 161

### *Learning from Experience: Developing Portraits of Practice* Part II

I. **Community Curator(s).** Who has prepared Part II of this Portrait on behalf of your LC? What date was it completed?

Mike Substelny, May 12, 2008

J. **Key Resources.** Who and what are the beneficial people, organizations, materials, websites, and other resources you have utilized? What help/support did you get from instructional designers, IT staff and other tech support personnel? What types of support did you receive from departments, colleges, administration? Of all resources, which were essential and why were they essential?

Lorain County Community College (LCCC) made use of the Giant Revolving Brain for some of the initial simulations. This organization provided software development. The completed simulations can be seen and utilized from that website:  
<http://giantrevolvingbrain.com/>

The math modules were developed by independent simulation developer Morgan Adams.  
<http://adamsi.com/>

The later simulations were built by students in LCCC's Computer Games and Simulation Development (CGSD) program, under the supervision of instructor Doug Reichard. The new simulations include Acid/Base Titration, Chromatography Animation, Equilibrium Animations, and Concentration Animation. The CGSD students involved are David Brattoli, Luke Louder, Jordan Banda, and Nathan Stawicki.

K. **Your Assessment Strategies.** How did you evaluate your work/successes? How did you assess member learning, (including technology learning)? your community's growth over the year? student learning or change connected with your project?

What have you observed or concluded at this point with respect to member learning, your community's growth, and student learning?

We measured student retention, including student success and withdrawal rate. When the first simulations were introduced as of fall 2003 the withdrawal rate did drop. With this Learning Community, we have added more simulations (including remedial math aids). We have also brought all chemistry faculty together to better standardize their use, in the hope of reducing the high variation in success and retention.

To better measure student learning, the community has implemented five common exam questions across all sections of CHMY 161. This improved measurement should also have the effect of stabilizing the success rate, giving us a better picture of our progress.

Cost savings have been estimated based on the expansion of CHMY 161 course seats without the need to build additional on-campus laboratory space, which is extremely costly.

Preliminary results are promising. In fall 2007 we saw a slight drop in withdrawals and a modest improvement in success. We regard this as progress toward our goal of reducing the DFW rate by 50%.

**L. What Others Know About What You've Done.** Beyond your community members, who else is vested in what you're doing? How did you communicate and update these stakeholders on your efforts and successes? What questions do your colleagues have? What have you told your students about your learning community?

Outside the learning community, all faculty and some students in the CGSD program are now intimately involved in the development of new simulations.

As with all projects that fall under the umbrella of course redesign, our progress is regularly monitored and communicated to the LCCC community by the Center for Teaching Excellence. They arrange campus-wide publication and presentation of course redesign efforts, successes, etc.

**M. Dissemination.** What visible bridgework -- structural elements, findings, lessons, ideas, beauties, legacies, processes, relationships, etc -- is your learning community leaving, that inspires others to *build their own bridges as they walk on them*? What digital resources have you developed that you will place into the E-Learning Athenaeum of Ohio? What might members offer, such as informal "brown bag" lunches, research, written

articles, and presentations about your work? What is important to tell others “not to do”?

In addition to the presentation for the Winter Institute, we presented the chemistry class and simulations to a large audience at the 2008 ODCE.

The redesigned course has been nominated for an ANGEL Impact Award. [http://www.angellearning.com/auc/impact\\_awards.html](http://www.angellearning.com/auc/impact_awards.html)

Many of our simulations (digital resources) are available to the public from the Giant Revolving Brain website (see J above).

We expect the special synergy we have formed with LCCC’s new Computer Games and Simulation Development (CGSD) program to lead to more and better simulations across the Science, Technology, Engineering, and Math curriculum. As of this project, four CGSD students have begun helping to produce new simulations in chemistry.

N. **20/20 Hindsight.** If you were to start over again, what would you do differently and why? What key challenges, problems, solutions, struggles, and failures, would you handle differently? To what degree would you change your goals? What additional successes would you enjoy? What worked - or didn’t work -- and why?

The new math modules were designed specifically to assist chemistry students. In hindsight, it would have been possible to make them relevant to physics, biology, nursing, engineering, and other students. As developed, these modules were not tailored to those needs.

O. **What’s Next?** Will your community continue? Formally? Informally? What could be next in another cycle of reflective practice? The next steps may not be totally predictable, yet they may take you in another fruitful direction that builds upon your community’s growth and knowledge.

This learning community must continue in order to perpetuate the use of the simulations and assessment strategies (common exam questions). Our assessment strategy is revolutionary on this campus, and as its benefits become more apparent we expect other instructors in other courses and programs to benefit from the knowledge we have gained.

The community’s idea of developing wiki textbooks, as described in our

Part I POP, has flourished into a major initiative on our campus. An official wiki textbook project is now underway, and it will likely become one or more future Learning Communities.

**This is the end of Part II**  
*Learning from Experience: Developing Portraits of Practice*  
[Submit Part II to [nwlccenter@bgsu.edu](mailto:nwlccenter@bgsu.edu)]