Open QUBES Biology × Math × Community qubeshub.org A Faculty use case of Open Practice

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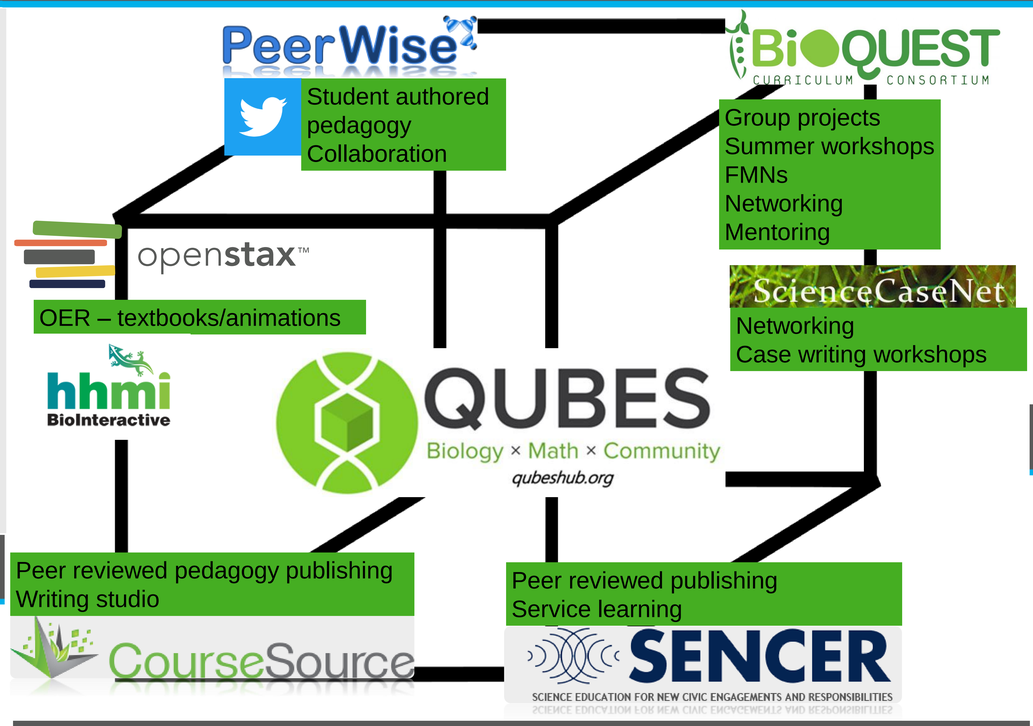
Abstract

One of the challenges faculty face with respect to developing and improving open educational practices is how to find, create and share resources in a central location. Finding resources that provide the infrastructure for online community workspaces to support open practice would be an ideal solution to this challenge. The Quantitative Undergraduate Biology Education and Synthesis (QUBES) project offers a solution as a space for resource sharing, community building, and project work. As part of my journey to and with open practice, I have used QUBES for creating open classroom activities, open publishing, working on group projects, participating in faculty mentoring networks, using new software and other tools, and cultivating a network of collaborators on various ongoing projects. QUBES has been a critical component of my continued success as an open scholar. This poster will detail several of these outcomes with my lived experience working with QUBES as an Open scholar as a case study. It will also discuss how it is a great example of an open community of practice.

Journey to Open

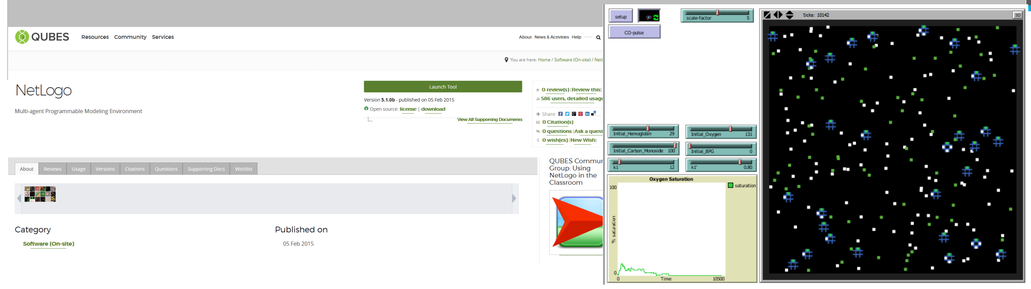
- **Initial (2004-2010) finding resources (not necessarily open)**
  - **Case based teaching activities**
  - **Active learning activities**
  - **Course based research pedagogy –how to bring authentic data into the classroom**
  - **Scholarship of Teaching and Learning (SoTL)**
- **Developing (2010-2014) – creating/sharing content, replacing closed/open materials**
  - **Writing cases, but not publishing**
  - **OER – textbook replacement**
  - **Service learning – Civic Engagement**
  - **Discipline Based Educational Research (DBER)**
- **Advanced (2014-current) – publishing, networking, mentoring, pedagogy**
  - **Creating open lectures, activities**
  - **Publishing classroom activities**
  - **Networking**
  - **Mentoring**
  - **Student authored content**
  - **Peer reviewed open publishing**
  - **Open research**
  - **Evidenced based pedagogy**
- **Future – Open Practice**
  - **Open courses (student generated syllabi, etc.)**
  - **Publish whole open courses**
  - **Publish more activities/cases**
  - **Expand mentoring**

Open Cube of Practice



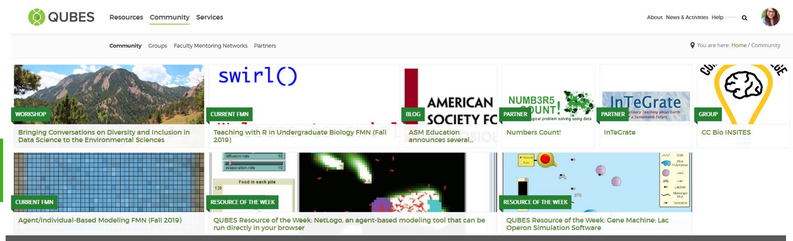
QUBES – Open Pedagogy examples

- Resources and classroom activities – adapt and adopt
  - BioQUEST – active learning activities focused on authentic data – motivated use of cases and problem spaces in teaching
  - HHMI – began utilizing animations and resources in courses (Biochem, Genomics)
  - OpenStax – introduced at BQ Summer Workshop – Chemistry Atoms First
- Software and tools –free downloads or launch from QUBES – collections of resources using apps also available
  - NetLogo - agent based modeling application along with library of resources – designed model of hemoglobin regulation – case adapted to use in Anatomy and Physiology course
- BioQUEST/QUBES Summer Workshops – created classroom activities
  - Collaborated on Sexy Smells case – taught multiple times, submitted to National Center for Case Study Teaching
  - Presented on use of PeerWise and Twitter (multiple workshops) – connected with CourseSource and OpenEd
  - CourseSource – writing workshop – submitting Twitter assignments from entire course for publication



QUBES – Open Practice examples

- Faculty Mentoring Networks (FMN) – Agent Based Modeling and Serenity (R application) – learned new software applications – hope to utilize in courses in future
- Mentoring Leadership/ QUBES Ambassador– designed and directed new mentoring service for newcomers to BioQUEST/QUBES Summer Workshop
  - Positive evaluation outcomes



Professional Outcomes

- **P&T - Presentations, activities, publications**
- **Networking – building collaborations nationally and internationally**
- **Invited presenter externally**
- **On campus leader for Open/Digital Pedagogy**
  - **Collaborate with Academic Technology and Center for Teaching and Learning to give faculty workshops**
  - **Collaborate with Center for Teaching and Learning to give faculty workshops**
- **Resources – active learning embedded in all pedagogy**
- **Support/motivation – valuable network – workshops motivate to continue professional development**
- **Mentoring/Leadership – giving back to community of practice**

Future Work

- Open courses - student generate syllabi and course framework
- Publish more activities/cases and whole open courses on QUBES and other connected sites (CourseSource, SENCER)
- Expand mentoring leadership at QUBES
- Use QUBES for open classroom

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