OPENING GATEWAYS

OPENING GATEWAYS TO COMPLETION: OPEN DIGITAL PEDAGOGIES FOR STUDENT SUCCESS IN STEM

Opening Gateways Seminar 2019-20

Seminar #1, September 6, 2019

Cross Campus Collaboration

- 5 year, $3.2M Collaborative Arrangement grant, 2015-2020

- US Department of Education's Developing Hispanic-Serving Institutions (Title V) program

- Focus on "gateway" mathematics courses for STEM students
  - OER Development
  - Faculty Seminar

Goals

Overarching Goal: Increase the number and proportion of Hispanic and high need students who achieve **timely completion** of a degree.

- o Improve return and completion rates.

Goal 1: **Increase momentum** by reducing course failure and withdrawal in required mathematics courses.

- o Reduce withdrawal and failure rates, improve grades.

Goal 2: **Enhance pedagogical effectiveness** of required mathematics courses.

- o Implement Opening Gateways faculty seminar

Goals

Goal 3: **Reduce financial barriers** to student success and make college more affordable for economically disadvantaged students.
- Increase the quality, availability, and use of Open Educational Resources.

Goal 4: Strengthen students' **intellectual engagement** with their studies.
- Increase student interactions with faculty and peers around coursework (via WeBWorK and OpenLab)

Evaluation

The project will be evaluated by measuring:

◦ Faculty participation in faculty development activities.

◦ Faculty use of WeBWorK, the OpenLab (City Tech only), and other open educational resources in their teaching.

◦ Faculty use of new techniques in their pedagogy.

◦ Student interactions with faculty and peers around coursework (via WeBWorK and, at CityTech, the OpenLab).

◦ Outcomes for students in courses taught by Opening Gateways Fellows.

Project Activities

1. Open Educational Resource (OER) development

2. Faculty development seminar

3. Campus-specific activities
   o WeBWorK/OpenLab integration (City Tech)
   o Supplemental Instruction tutors (BMCC)

OER Development

WeBWorK
- o Free and open source online homework system supported by the Mathematical Association of America and the National Science Foundation

Video
- o Curated video resources
- o Flipped classroom strategies

Projects and other resources
- o Classroom activities
- o STEM applications

Faculty seminar

Integrate OERs

Implement research-proven pedagogical strategies
- active learning, high-impact educational practices, inquiry-based learning, flipped classroom strategies, game-based approaches

Incorporate assessment and advisement best practices

Other Activities

WeBWorK/OpenLab integration (City Tech)

Supplemental Instruction tutors (BMCC)

Timeline

Year 1 (2015-16)
Develop OERs for Course 1, plan seminar & recruit faculty

Year 2 (2016-17)
Faculty seminar 1 (Fall), participants teach (Spring)
Ongoing development of OERs for Course 1

Year 3 (2017-18)
Faculty seminar 2 (Fall), participants teach (Spring)
Refine OERs for Course 1, develop OERs Course 2

Year 4 (2018-19)
Faculty seminar 3 (Fall), participants teach (Spring)
Refine OERs for Course 2, develop OERs Course 3

Year 5 (2019-20)
Faculty seminar 4 (Fall), participants teach (Spring)
Refine OERs for Course 3, institutionalize

Faculty Seminar

Seminar Activities and Deliverables

Fall

- Participate in a seminar series.
- Session topics include: WeBWorK and other OERs, active learning strategies, open digital pedagogies, inquiry-based learning, and assessment and advisement best practices.
- Develop an activity, STEM application, or other OER.
- Develop a detailed plan for implementation in the classroom.
- Participate in evaluation activities.

Spring

- Implement new strategies and resources in your classroom.
- Report back about your progress.
- Revise materials based on lessons learned.
- Participate in evaluation activities.

2018-19 Faculty Fellows

Questions

Thank You!