

Statistics Impact Grant Project Plan

3/22/2011

Faculty Programs Team, Learning Technology; Statistics Impact Grant

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Project Committee

Statistics lead

Dr. Jackie Miller (miller.203@osu.edu)

Statistics constituents

Allen Coleman (coleman.153@osu.edu)

Mike Kaylor (kaylor.1@osu.edu)

Tom Marker (marker.11@osu.edu)

GTA assigned to Dr. Miller (TBD)

External evaluators

Michelle Everson, University of Minnesota (gaddy001@umn.edu)

Michael Posner, Villanova University (michael.posner@villanova.edu)

External consultant

Laura Fathauer (fathauer.4@osu.edu) (EHE Connect consultant)

Kythrie Silva (silva.14@osu.edu)

Project Lead

Robert Griffiths (griffiths.44@osu.edu, Itgrants@osu.edu)

LT constituents

Tom Bell (bell.21@osu.edu)

Liv Gjestvang (gjestvang.1@osu.edu)

Andy Kuhar (kuhar.2@osu.edu)

Steve Lieb (lieb.21@osu.edu)

John Pryzbylek (pryzbylek.1@osu.edu)

Travis Ritter (ritter.18@osu.edu)

Joni Tornwall (tornwall.2@osu.edu)

Justin Troyer (troyer.48@osu.edu)

Executive Summary

Too Many Students:

After semester conversion, student enrollment in Statistics 145 is anticipated to climb from 350 students per quarter to 500 students per semester. Finding large lecture halls on campus at times when students want (and are able) to attend class will be increasingly difficult.

- Solution: Give students choices. Students will choose between face-to-face lecture or on-line lecture.

Too Little Time:

Time in lecture will increase by 6.9% (1440 min per quarter, 1540 min per semester), while time in recitation will decline by 20% (960 min per quarter, 770 min per semester). Currently, a typical recitation includes a brief review of important concepts from lecture, an in-class activity, and question and answer time (covering the in-class activity, homework problems, and/or lecture questions).

- Solution: Given that we have 20% less time in recitation, lecture review seems like a luxury we can't afford. To tackle this issue, we will have an on-line lecture review and assessment that is due after every lecture and before recitation. The on-line materials and assessment could also 'set-up' the recitation activity helping students be better prepared to immediately dig-in to the recitation activity. Recitation time can be spent on activities and questions

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instead of lecture review. We also want to record and publish all the streamed/on-line lectures allowing all students to review the lectures, any time/any place.

Problem / Opportunity

Semester conversion will necessitate increased enrollment in courses across the university. GEC courses (like Statistics 145) could see enrollment per term increase by 50%, ignoring any increase that comes from the current growth of the course. Larger classes will be competing for the few large lecture halls on campus (currently only five lecture halls on main campus can seat 250+ students). Many courses taught with the lecture/recitation format will have time issues similar to Statistics 145, including several in our department (e.g., Stat 133 and Stat 135).

We plan to make Statistics 145 a model for our department and the university by leveraging technology to solve semester conversion problems, while also providing rich and flexible learning opportunities for students.

Project Goal(s)

The main goal of this project is to determine processes for managing a course concurrently delivering online and face-to-face content. Other goals include:

- Increase student participation and engagement through a process that is scalable to larger lecture size and more students per lecture.
- Increase concept understanding and course satisfaction.
- Incorporate solution to allow students to attend face-to-face or online.
- Provide opportunities for students to ask questions to the TA or instructor.
- Determine process for core requirements for facilitating similar courses in the future.

Project Objectives

At the end of this project, we will have:

- Taught lecture materials simultaneously to students online and face-to-face.
- Selected a webinar solution to receive lecture online and to provide archive of lecture.
- Provided students anytime access to archived lectures.
- Provided online activities to reinforce lecture concepts and provided students with timely feedback.
- Used Quality Matters guidelines in all course adjustments.
- Used accessibility policies and guidelines in all course adjustments.
- Selected a medium for backchannel conversation.
- Selected a process for taking attendance (both face-to-face and online) and accessing learner analytics about viewership of recorded lectures.
- Used the Learning Styles Inventory (LSI; <http://www.engr.ncsu.edu/learningstyles/ilsweb.html>) for students to take prior to pilot course to select face-to-face or online lecture delivery
- Adjusted lectures to incorporate student feedback and interaction (backchannel).
- Recorded lectures and made them available to students.
- Assessed course design focusing on concept understanding, and student engagement and satisfaction.
- Collected post experience data to determine if a Hyflex model course is desirable and/or feasible.
- Completed the CITI program (<https://www.citiprogram.org/Default.asp?>).
- Completed the IRB Exempt form (<http://orrrp.osu.edu/irb/exempt/index.cfm>).

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In-Scope

- Using Media Services to host lecture recordings.
 - Create MOU (memorandum of understanding) with Media Services for settings.
- Using Carmen LMS to deliver lecture recordings and course materials.
- Paying for a backchannel solution.

Out-of-Scope

- Provide students technology so they can attend online rather than face-to-face. It's out of scope to make it mandatory to attend online.
- Determine SIS process for allowing students attending a face-to-face recitation to also be able to register for a face-to-face or online version of the course.
- Determine process for letting students view what is being communicated via text messaging from other students.
- Determine concept review solutions dependent upon order of lecture and recitation after the semester conversion.
- Determine long-term funding for backchannel solution. Technology fee for the course?
- Have TAs look at homework item analysis in MyStatLab to also get an idea of how students are doing in the course.

Success Criteria

With the help of our external evaluators, we hope to be able to clearly and objectively evaluate the project's successes. We also think an external evaluator is a good example for others seeking LT impact grants in the future. Our definition of success would include stable or increased student grades, no increase in course drop rate, increased interest and enrollment in the course, and positive student views toward the course.

- Students complete the lecture review activities on time.
- Students feel like they have a choice in how to access lecture material.
- Student improvement from pre-test to post-test (START test) is statistically significant.
- Student attitude toward the course is high.

Project Assumptions

A locally supported (either through Nursing or OCIO) webinar solution will be available for the pilot. It is assumed this project team will be included as part of the Summer pilot of Connect for testing to become familiar with the interface. There is a risk Connect isn't adopted after the pilot, which means we could also go our own way and pay for a webinar solution.

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Projects Risks

Risk Description	How Likely 1=low 2=med 3=high	Impact 1=low 2=med 3=high	Score likely x impact	Mitigation
Adobe Connect not working	1	3	3	<ol style="list-style-type: none"> 1. Test software in room 2. Train instructor and in-class TA 3. Support person on-hand for first few classes 4. Lecture recording available after class
Backchanneling not working	2	2	4	<ol style="list-style-type: none"> 1. Test software heavily before use 2. Train instructor and in-class TA 3. Support person on-hand for first few classes 4. Encourage use of webinar chat window and hand-raising for those in-class.
Problem with lecture recording	1	2	2	<ol style="list-style-type: none"> 1. Thoroughly test all equipment, microphones, computers, software, while also running web conferencing software 2. Train instructor and in-class TA 3. Support person on-hand for first few classes
Lecture review materials inaccessible on server, either server error or corrupt file.	1	1	1	<ol style="list-style-type: none"> 1. Possibly provide lecture notes to everyone rather than simply those identified through the ODS office.
OSU streaming problems (Adobe Connect, Elluminate is hosted by Elluminate)	2	2	4	<ol style="list-style-type: none"> 1. Consult streaming server personnel 2. Create MOU with Media Services
Wi-Fi, wireless connectivity problems	1	2	2	<ol style="list-style-type: none"> 1. Contact Ryan Holland if there are issues with Wi-Fi connectivity in the room. 2. Contact James Walton by August 1 should there be cellular coverage issues. Worst case, install data jack for femtocells. Box is around \$150-\$250. There might be a cost to install the data jack, and a monthly osunet fee.
Not enough time for technology set-up between class ending in UH at 9:18 and class beginning in Stillman 100 at 9:30	2	2	4	<ol style="list-style-type: none"> 1. Train departmental TA/RA 2. Coordinate MOU (memorandum of understanding) with OCIO classroom support team for course support during AU11

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Obstacles / Constraints

Classroom requirements (Stillman 100):

- cellular coverage
- wireless coverage for students
- plug-in for instructor tablet computer
- dual projectors and screens
- seats - 150

Technology requirements:

- must be reliable, maintainable, and affordable for department and no or very little cost to students
- easy to use for students (online and face-to-face) and lecturers
- easy to incorporate into lecture format, for both lecturer and assisting TA

Schedule Considerations / Other Projects / Related Projects

Statistics

- Jackie Miller - out of town April 4-5, May 19-22, June 23-27, July 10-13, November 17-20
- Michelle Everson (evaluator) - low availability during spring
- Michael Posner (evaluator) - out of the country for two months over the summer
- Kythrie Silva - will act as consultant, not staff member, beginning in March

LT

- Innovate! (April 25-29)

Project Milestones and Major Deliverables

Milestone/Deliverable	Target Week	Responsible	M/D
Decision on Adobe Connect versus Elluminate	Feb 28	Jackie Miller, Kythrie Silva	M
Decide on backchannel product	Feb 28	Jackie Miller, Kythrie Silva	M
IRB to use START, a standard Statistics assessment measure	Feb 28	Jackie Miller	D
Initial meeting with Joni to discuss QM concerns	March 21	Jackie Miller, Joni Tornwall, Rob Griffiths	M
Jackie to get training on Carmen Quiz Tool	March 23	Jackie Miller	M
START to be entered into Carmen Quiz Tool	March 25	Jackie Miller	D
Process for lecture capture delivery to students	March 28	Jackie Miller, Tom Marker, OSU Streaming Services	M
Discuss physical classroom needs in Stillman 100	April 11	Jackie Miller, Rob Griffiths, Tom Bell, Tom Marker	M
Identify RA(s) to work over the summer	May 9	Jackie Miller	M
Testing of systems in Stillman Hall	May 23	Rob Griffiths, Tom Marker	M
Conference call to Michelle Everson and Michael Posner (external evaluators)	May 30	Jackie Miller, Michelle Everson, Michael Posner	M

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Course Notes, PowerPoint slides, Carmen quiz questions for Contingency Tables	June 6	Jackie Miller, RA	D
Identify student needs from an online versus face-to-face course	June 13	Jackie Miller, Michelle Everson, Michael Posner	M
Course Notes, PowerPoint slides, Carmen quiz questions for Chapters 3-5 - revise examples/notes - add poll questions - embed text feed from backchannel (see August 15 below) - add quiz questions to Carmen (see September 5 below)	June 13	Jackie Miller, RA	D
Identify RA to work during 2011-2012 academic year	June 27	Jackie Miller	M
Course Notes, PowerPoint slides, Carmen quiz questions for Chapters 14-15	June 27	Jackie Miller, RA	D
Establish evaluation plan - student content knowledge - student engagement - student satisfaction	July 4	Jackie Miller, Michelle Everson, Michael Posner	D
Course Notes, PowerPoint slides, Carmen quiz questions for Chapter 6	July 4	Jackie Miller, RA	D
IRB for pilot and future terms	July 11	Jackie Miller	D
Course Notes, PowerPoint slides, Carmen quiz questions for Chapters 12-13	July 18	Jackie Miller, RA	D
Course Notes, PowerPoint slides, Carmen quiz questions for Chapter 18	July 25	Jackie Miller, RA	D
Purchase backchannel product	Aug 1	Tom Marker	M
Hardware decision and purchasing, e.g. microphones, receivers, tablet PC, notebook PC, etc.	Aug 1	Tom Marker, LT	M
Course Notes, PowerPoint slides, Carmen quiz questions for Chapter 19	Aug 1	Jackie Miller, RA	D
Course Notes, PowerPoint slides, Carmen quiz questions for Chapters 20-21	Aug 8	Jackie Miller, RA	D
Course Notes, PowerPoint slide, Carmen quiz questions for Chapter 22	Aug 15	Jackie Miller, RA	D
Create text feed sessions on backchannel product	Aug 22	RA	D
Course Notes, PowerPoint slides, Carmen quiz questions for Chapters 7-9	Aug 22	Jackie Miller, RA	D

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Complete lecture review assessments- - questions written - put in Carmen quiz library (as individual questions) - multiple choice questions auto-graded to provide immediate feedback	Sept 5	Jackie Miller, RA	D
Determine a way to find out who attends lecture each day (to compare attendance of face-to-face, online, recordings)	Sept 5	Jackie Miller, Tom Marker, LT	M
Create How-To document regarding the technology needs for classroom support personnel	Sept 5	Rob Griffiths	
Have students take Learning Styles Inventory and START test during first recitation	Sept 19	Jackie Miller, TAs	D
Have students take START test and GEC Data Analysis learning objectives accomplishment survey during last recitation	Nov 28	Jackie Miller, TAs	D
START pre- and post-test results and GEC survey to external evaluators	Dec 5	Jackie Miller	D
Evaluators complete evaluation	Jan. 2012	Michelle Everson, Michael Posner	D
Check Quality Matters and Accessibility guidelines when making course adjustments	ongoing	Jackie Miller, Tom Marker, LT	M

Project Resource Summary

Statistics

- GRA/GTA (3 quarters) (\$17,500)
- Tom Marker support (\$3,700)
- Kythrie Silva consultation (\$1,600)
- Laptops (\$3,000)
- ASC IT support (\$5,000)

LT

- Poll Everywhere license (\$700)
- Assessment consultation (\$4,000)
- Derek Bruff consultation (\$500)
- Tom Marker support (\$4,000)
- Kythrie Silva consultation (\$800)
- Conference attendance (\$3,000)
- Undergraduate salary (\$2,000)

Statistics total: \$30,800

LT total: \$15,000