

Predicting Online Student Outcomes From a Measure of Course Quality: Preliminary Results

Shanna Jaggars
Di Xu

Community College Research Center
Teachers College, Columbia University

Sloan Consortium International Conference on Online Learning
November 11, 2011, Orlando FL

The Study

- Part of larger qualitative study on teaching and learning in the online environment
- Fieldwork at 2 community colleges in Virginia
- Observed 26 online courses (35 sections)
 - Accounting, Business, Chemistry, English, History, Humanities, Information Technology, Math, Music, Psychology, Sociology
 - For all students enrolled in those 35 sections, received demographic & complete transcript data

Creating a Quality Measure

- More holistic, not just checking off items
- Based on:
 - Existing literature and quality measures
 - Faculty, administrator, and student perceptions of quality
- Four areas (each rated 1-3):
 - Organization & presentation
 - Clarity & connection of learning objectives
 - Interaction
 - Technology

Organization & Presentation

- Course has an easy to navigate interface that is generally self-explanatory and helps students identify and manage course requirements
- E.g.: materials consistently & clearly labeled; orientation to course materials; course calendar; assignment overviews

Organization & Presentation

[Course Number] Tools

[Course Number]

- Announcements
- Course Documents
- Course Assignments
- Discussion Board
- Tools
- Technical Help
- SRI

Tools

-  **Announcements**
Create and view Course Announcements.
-  **Blogs**
Create and manage blogs for Courses and Course Groups.
-  **Calendar**
Track important events and dates through the Calendar.
-  **Collaboration**
-  **My Grades**
Shows detailed information about your grades.
-  **Respondus LockDown Browser**
Respondus LockDown Browser
-  **Roster**
View a list of users enrolled in the Course.
-  **Send Email**
Send email messages to different types of users, system

Organization & Presentation

The screenshot displays a course management system interface. On the left is a sidebar with a 'COURSE MANAGEMENT' section containing links like 'Control Panel', 'Course Tools', and 'Course Links'. Above this is a vertical list of course-related links such as 'Announcements', 'Syllabus and Faculty Info', and 'Textbook Info'. The main content area features a top navigation bar with buttons for 'Create Item', 'Build', 'Evaluate', 'Collaborate', and 'More', along with a 'Discover Content' button. The course content is organized into four numbered steps, each with a document icon and a dropdown arrow. Step 1, 'Online Student Orientation to Distance Learning', includes sub-sections for 'What do you need to know before you take an online distance course?' and 'Internet Explorer Active-X issues:'. Step 2, 'Technical Help', provides instructions on computer requirements. Step 3, 'Learn About Netiquette', lists several links and a quiz. Step 4, 'Office 2007 Software', discusses the software used in the class.

Announcements

Syllabus and Faculty Info

Textbook Info.

Discussion Board

Course Documents

Schedules

Project Assignments

SAM 2007

Submit Assignments

My Grades

Technical Help

Communication

External Links

Tools

E-mail

SRI

Email Professor C.

COURSE MANAGEMENT

- Control Panel
- Course Tools
- Course Links
- Evaluation
- Users and Groups
- Customization
- Packages and Utilities
- Help

Create Item **Build** **Evaluate** **Collaborate** **More** **Discover Content**

Introduction - Begin Here

To begin the class, complete all of the steps below. Scroll down to view all of the steps.

Step 1: Online Student Orientation to Distance Learning

Enabled: Statistics Tracking

What do you need to know before you take an online distance course?

Review the important information contained in the online student orientation.

[: Online Student Orientation](#)

Internet Explorer Active-X issues:

Microsoft implemented an update to IE. This update changed the way IE handles some active content. Click here to find out more: [ActiveX and IE Information \(pdf\)](#).

Step 2: Technical Help

Click on the Technical Help button and read the information relative to this topic. Check to be sure that your computer system meets the technical requirements for this online class.

Step 3: Learn About Netiquette

Enabled: Statistics Tracking

Read the do's and don'ts for online conversing contained in the links below. We will be using email and discussion boards throughout our course this semester, so we all need to be aware of what is expected and acceptable for online communications during our course.

- [Netiquette and Group Dynamics.pdf](#)
- <http://www.learnthenet.com/english/html/09netigt.htm>
- <http://www.albion.com/netiquette/corerules.html>

You will have an opportunity to practice what you learn here in a quiz

Before participating in our many online communications this semester, please quiz yourself on your understanding of online Netiquette:

- <http://www.albion.com/netiquette/netiquiz.html>

self-quiz linked below.

Step 4: Office 2007 Software

The MS Office 2007 software is used in this class. We will focus on MS Word, MS PowerPoint, MS Excel, and MS Access.

Students who purchased their textbook at the bookstore received a 180 day trial version of the MS Office 2007 software that includes the four applications to be focused on. Install this software if you do not already have it on your computer.

If you already have MS Office 2007, check to be sure that your version includes MS Access. Sometimes students will have the "home" version of the software and it does not include MS Access.

Organization & Presentation

- Announcements
- Course Calendar
- Syllabus
- Course Information
- Faculty Information
- Course Topics
- MyMathLab
- Virtual Chat Room
- Quizzes
- Group Projects
- Final Exam Review
- Student Lounge
- Tools
- SRI
- Technical Help

View Day **View Week** View Month View Year



Course Calendar: View By Week

Jump to



< Sunday, May 1, 2011-Saturday, May 7, 2011 >

Sunday, May 1, 2011

Monday, May 2, 2011

8:00 AM -11:59 PM Final Exam (Course Event)

Tuesday, May 3, 2011

Wednesday, May 4, 2011

Thursday, May 5, 2011

Friday, May 6, 2011

Saturday, May 7, 2011

Learning Objectives

- Learning objectives and performance standards are clearly specified
- Connections among them are articulated to provide explicit rationale & coherence across instructional activities.

Interaction

- Plentiful opportunities for students to meaningfully interact with the instructor, content, and other students in ways that enhance knowledge development.
- Interactions facilitate knowledge and skill application, not just recitation.
- Types and nature of interactivity are determined by the desired learning goal, not by arbitrary criteria for collaboration or communication.

Interaction

Discussion Board Grading Rubric

Read instructions carefully. To enter the discussion board, click on the title.

Once inside the discussion board, click on the Add Thread button.

Timely posting is essential! Do *NOT* wait until the last minute to post your thoughts and replies.

Waiting until the last minute to post hampers your classmate's abilities to complete *their* work too, as they need to post replies.

Grading Rubric:

10 pts possible for excellent threads	Focus	Specificity	Support	Thoughtfulness	Use of Language
Excellent (2 points for post)	Comments make vividly clear references to specific readings	Majority of comments include specific details	Comments are well-supported and documented	Comments are articulate and show a high level of thought	Writing is well-organized, unified and error-free
Good (1 point for post)	Comments make some reference to readings	Some comments include specific details	Comments are somewhat well-supported	Comments show some thought	Writing is somewhat organized and unified, with some errors
Fails to meet Expectations (0 points)	Comments make no reference to readings	No comments include specific details	Comments are not supported	Comments show no thought	Writing is not organized or unified; errors impair communication

Excellent Reply: (5 points) Reply addresses all points or questions made by the author and draws upon readings to validate their position

Good Reply: (2.5 points) Reply addresses some points or questions made by the author

Reply That Fails Expectations: (0-1 points) Reply basically says "Me, too!" or "I agree with Bob."

Total Possible Points: 10 for each post and 5 for two replies= 20 points

Posts and replies received after the due date will receive a 5 point reduction per day.

Technology

- Technologies are effectively used in service of particular pedagogical goals
- They bolster, not reduce, instructor presence
- They facilitate diversification of instructional activities

Two Colleges' Rubric Scores

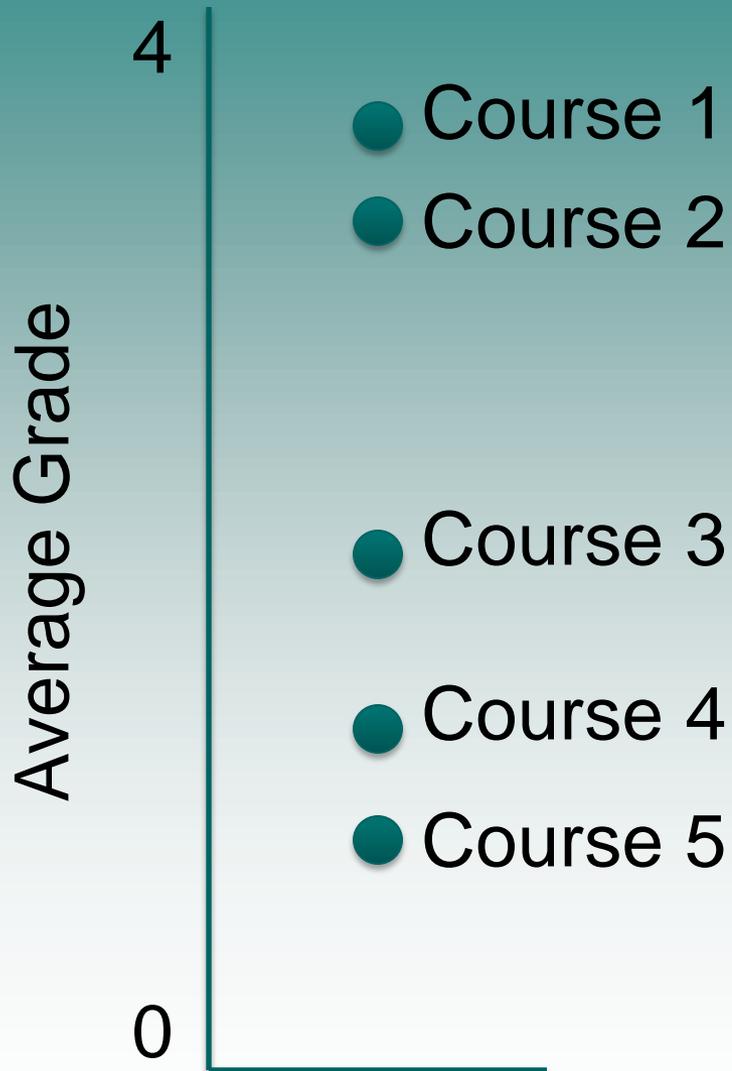
Subscale	College 1	College 2	<i>sig (N = 35)</i>
Org & Pres	1.92	1.29	$p < .001$
Learn Obj.	1.72	1.55	$p < .05$
Interaction	1.85	1.83	<i>n.s.</i>
Technology	1.75	1.38	$p < .001$

- As might be expected, the college with more structured instructor training had higher scores

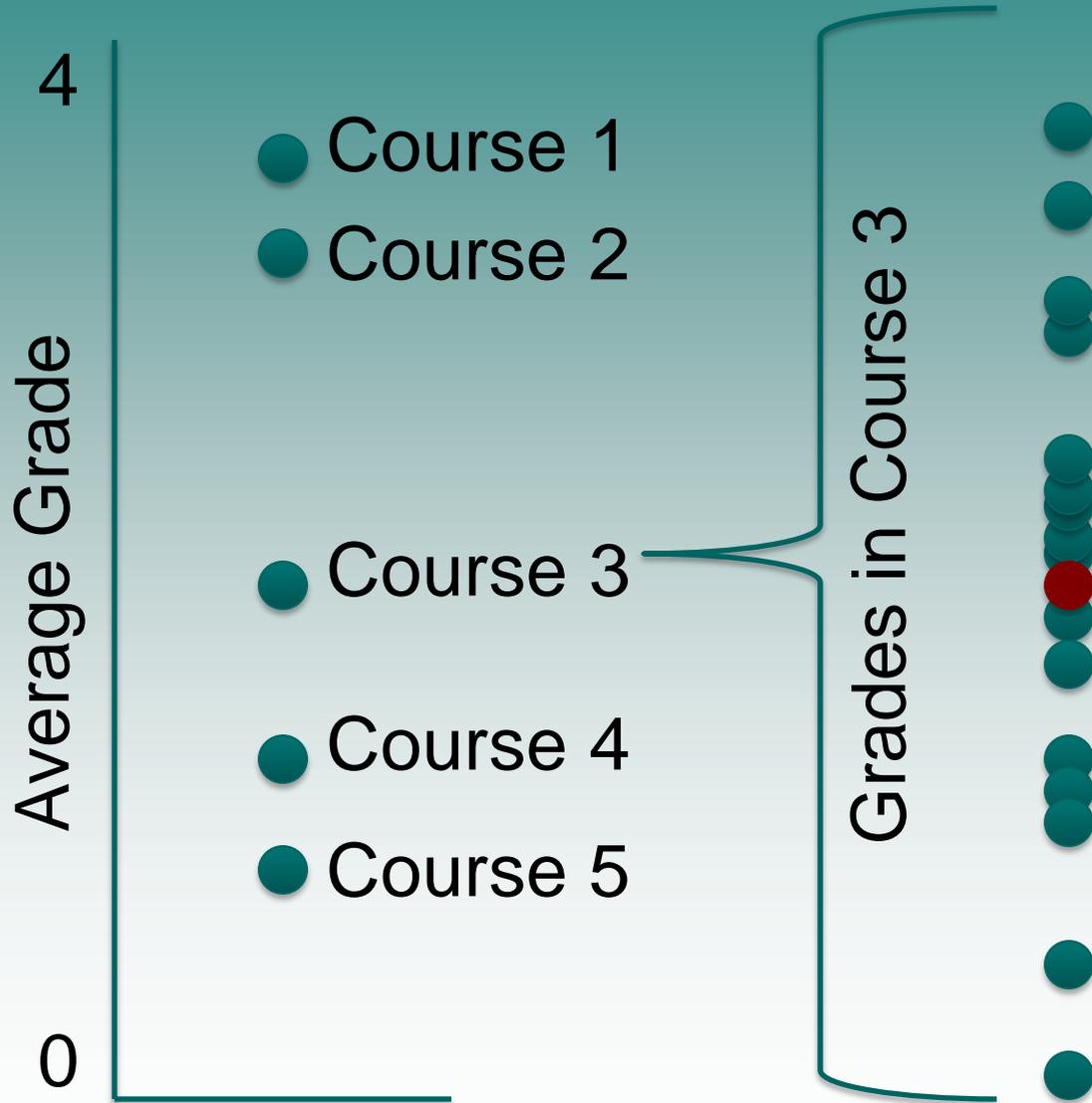
Two Colleges' Student Preparation & Outcomes

Measure	College 1	College 2	<i>sig (N = 35)</i>
Prior credits	24.32	26.67	<i>n.s.</i>
Prior online	0.69	0.63	<i>n.s.</i>
Prior GPA (0-4)	2.66	2.82	$p < .10$
Credit load	10.50	10.58	<i>n.s.</i>
Completed	0.84	0.78	<i>n.s.</i>
Grade (completers)	2.29	2.48	<i>n.s.</i>

- However, *other* school had marginally better-prepared students



- We can predict variation in course-level outcomes...
- using course characteristics (like rubric subscales)
- using aggregated student characteristics (like avg. prior gpa)



- We can predict variation in student-level outcomes within a course
- Using student chars (like individual prior gpa)

Variation Across Courses

- Looking at variation in overall student grade across the 35 sections –
- The four subscales together explain 24% of that variation
- However, when controlling for one another, only “interaction” is significant at $p < 0.05$

Covariates

- Section-level:
 - Avg. prior gpa for these students
 - Proportion mid-semester enrollees who dropped
- Student-level:
 - Deviation from class avg. prior gpa
 - Prior credit accrual, prior online, current load
 - Gender, ethnicity, 25 or older
 - Program type (transfer, CTE, unknown)

Final Estimates

Model	Coeff for subscale	Sig.
Org & Pres	0.00	<i>n.s.</i>
Learn Obj.	0.02	<i>n.s.</i>
Interaction	0.31	$p < .05$
Technology	0.07	<i>n.s.</i>

Prior GPA

- Was a powerful course-level predictor
- Related to interaction subscale (raw $r = 0.37$)
- What is its role vis-à-vis interaction?
 - Instructors of more advanced classes build in better opportunities/structures for interaction?
 - More-advanced students participate more fully in opportunities for interaction?

Next Steps

- Rubric
 - Consider splitting ‘interaction’ into separate categories, or moving student-content into another category
- Outcomes
 - Need more precise learning outcomes
- Larger sample
 - At least 100 course sections would be ideal

For more information:

Please visit us on the web at

<http://ccrc.tc.columbia.edu>,

where you can download presentations, reports, *CCRC Briefs*, and sign up for news announcements.

Community College Research Center

Institute on Education and the Economy, Teachers College, Columbia University

525 West 120th Street, Box 174, New York, NY 10027

E-mail: ccrc@columbia.edu

Telephone: 212.678.3091

This study was funded by the Bill & Melinda Gates Foundation