The HumAn Learning Project:

Humanities, Analytics, & Learning in a Multi-Section General-Education Course

Phase 2 Proposal

Submitted by
Jennifer Meta Robinson, PhD
Department of Anthropology
College of Arts and Sciences
jenmetar@indiana.edu

to the
Learning Analytics Fellows Program
Indiana University
IULearningAnalytics@oncourse.iu.edu
Abstract.

The HumAn Learning Project (Humanities, Analytics, & Learning in a Multi-Section General-Education Course) uses learning analytics to triangulate on student success in a multi-section, general education course. Phase 1 of the project, completed in 2015, uncovered important demographic trends in success among the 800-1000 students and 9-10 AIs involved per year. Phase 2, proposed here, (1) refines our understanding of these trends with multivariate modeling and by comparing them to student success in other IU general education courses, (2) assesses variability of student success across sections of course, (3) analyzes student performance over time, and (4) begins to implement interventions based on Phase 1 findings. As with all big courses, the stakes are high in A122. The course represents significant investments by the sponsoring departments, their schools, the graduate student section leaders, and the undergraduate students who hope to lay a foundation for successful college and professional careers. This study has broad implications for teaching and learning at IU because it locates campus-wide trends in a single course where they can be actively disrupted for greater student learning and overall success. In Phase 3 (with additional funding, later), successful interventions that are transferable to other multi-section courses will be shared across campus and more widely. The goal is to pilot an integrative, humanistically-informed portrait of successful, large-scale teaching/learning that marries qualitative and quantitative elements so that they can be shared meaningfully with instructors in the humanities and other fields. Anticipated outcomes include identifying ways to attempt to close gaps in achievement based on gender, educational preparation, and race; revising the graduate-student instructor orientation; positing pedagogical recommendations for facilitating High Impact Practices; piloting course-wide interventions in educational indicators (e.g. belonging, grit, motivation).
Project Description (3 page maximum):

- **Purpose of the investigation.** The purpose of the HumAn Learning Project is to leverage the data collection capacity of a large-enrollment course to triangulate on student success (learning ANalytics) and flesh out those quantitative factors with qualitative (HUMANities-based) information. The short-term goal of the project is to establish what is happening in a particular multi-section, general education course, design interventions to facilitate what can be, and then to identify, assess and articulate those innovations so that they can be transferred to other large, multi-section courses.
  - Phase 1 of the project, completed in 2015, uncovered important demographic trends in success among 2719 students and 30 AIs involved in the course.
  - Phase 2, proposed here, (1) refines our understanding of these trends with multivariate modeling and by comparing them to student success in other IU general education courses, (2) assesses variability of student success across sections of course, (3) analyzes student performance over time, and (4) begins to implement interventions based on Phase 1 findings.
  - In Phase 3 (with additional funding, later), successful interventions that are transferable to other multi-section courses will be shared across campus and more widely. The goal is to pilot an integrative, humanistically-informed portrait of successful, large-scale teaching/learning that marries qualitative and quantitative elements so that they can be shared meaningfully with instructors in the humanities and other fields. This effort toward humanizing “big data” represents an important conceptual development of this resource that will allow its ethical and efficacious use in the future.

- **Research objectives.** The primary objectives of the research are to improve student success and instructor experience in a multi-section, general education course in the humanities. In Phase 1, we identified differential success in various student cohorts in the last three years of the Department of Communication and Culture’s C122 Interpersonal Communication, based on single-variate models. In addition, we identified demographic and content-based challenges to those cohorts and identified pedagogical and structural opportunities for improving student engagement and success. As of Fall 2015, the course has successfully transitioned to the Anthropology Department as A122 Interpersonal Communication. In Phase 2, data will continue to be collected and compiled into the existing set. From there, we can begin to track any changes that result from this departmental reorganization. In addition, and more central to our research objectives, the following questions will inform the study:
  - What variations in student and instructor experience occur across sections?
  - What variations occur over time? For example, what courses do students take the following semester? What majors do they enter? What g.p.a. do they maintain? What is time to degree?
  - What opportunities may improve student engagement and success?
  - What opportunities may improve instructor satisfaction and success?
  - How do the “high impact practices” used in this course (i.e., undergraduate research, collaborative assignments, diversity and global learning, social connections) and other course-wide pedagogical moves correlate with student success and instructor experience?
  - What descriptions of student success and instructor work can be developed to communicate meaningfully to new instructors and those in other courses?

Overall, the research design in Phase 2 makes four major moves:

1. It continues to document the performance of students and instructors through important markers of their experience.
2. It seeks patterns in any variability across sections (in terms of instructional design, grade point average, course evaluations, time of day, etc.)
3. It identifies opportunities for leveraging change.
4. It proposes a richer, mixed-method model for describing the teaching and learning experience.

- **The data** gathered to address these objectives will include:
  - Student demographic data (e.g., Registrar data on year, gender, citizenship, transfer status)
Student success data (e.g., BAR and Registrar data on course grade, GPA, major, retention, performance on common exam questions)
Instructor performance data (e.g., survey data from the Center for Postsecondary Research’s pilot “Faculty Survey of Student Engagement for Graduate Student Instructors” (FSSE-G), course evaluations, observations, focus groups)

**Significance and impact on undergraduate learning.** Interpersonal Communication (a.k.a. CMCL-C122 and ANTH-A122) enrolls about 400 students per semester and supports 9-10 graduate student teaching assistantships per semester. As such a large course, it represents an important investment by the sponsoring department, the College of Arts and Sciences, and, not least, first-year students who hope for a good launch to their college career. This project proposes to build on the understanding of student trends made available through single variate learning analytics examined in Phase 1. In Phase 2, we propose to (1) refine our understanding of these trends by comparing them to student success in other general education courses on campus, (2) analyze student performance over time (3) assess variability of student success across sections of the entire course, and (4) begin to implement and assess structural changes based on phase 1 findings. In short, this additional analysis will not only add data from the first year of the course being taught in the Department of Anthropology but also continue to make sense of demographic trends through use of a multi- variate model that should find points of greatest opportunity to effect better student success rates. Interventions will then be designed and assessed. Longer-term, the project will impact learning and teaching by disseminating findings and interventions, in ways that are meaningful and actionable, to administrators, graduate students, and faculty members, particularly in the humanities – with the goals of greater undergraduate learning and retention. Phase 1 and 2 are essentially fact finding learning analytics while Phase 3 will exploit assessments for dissemination—creating an integrative description/analysis of the relationships between teaching and learning that expresses the richness of the human experience of teaching and learning in a particular course with important transferable lessons. In this way, the project in the long term seeks will not only make quantifiable gains on learning and teaching but also triangulate on a complex, humanistic portrait of them in action.

**Anticipated outcomes and their contribution to the success of student learning at IU.** By the end of Phase 2, we expect to have a better understanding of student cohort learning across sections of this large course. Based on those findings, first, we expect to identify ways to attempt to close gaps in achievement based on gender, educational preparation, and race. Interventions will not only be applied throughout all sections of this large course, but we will actively seek to identify interventions that are transferable to other large classes and other general education classes at IU. Second, we will revise the graduate-student instructor orientation for the course in ways designed to disrupt concerning trends and enhance mobility of student achievement. Third, we will posit pedagogical recommendations for facilitating High Impact Practices already included in the course (i.e., undergraduate research, collaborative assignments, diversity and global learning, social connections). Fourth, we will pilot course-wide interventions in such factors as belonging, motivation, critical thinking, and benchmarking.

**Research methodology.** This research has IRB approval. This is a mixed method study. Phase 2 will rely largely on quantitative data—from the Registrar and BAR, the FSSE-G, course evaluations, and learning outcomes data—to group and compare cohorts of students, instructors, teaching methods, and class sections. These will be compared internally and with other large general education courses.

We plan to build upon the results from Phase 1 of the study to examine student performance over time in Phase 2. Phase 1 identified several demographic markers such as race, gender, first- generations status, and international student status that were individually associated with student withdrawals and performance (GPA). However, there is reason to hypothesize that the various risk factors jointly impact student outcomes as well. Thus, we will conduct multiple regression analyses to explore the variation in student outcomes across time using multiple demographic markers in the same model. Specifically, we will use panel data techniques to analyze students’ outcomes over time.
Our primary outcomes of interest are GPA, fulltime course enrollment status, course withdrawals, persistence, and graduation rates of students enrolled in A122 in the years 2012-2015.

\[(1) \quad Y_{it} = \alpha + \beta X_i + \varepsilon_{it} \]

In separate specifications, the dependent variable \( Y \) will capture the various outcomes of interest at the end of each semester (starting with the semester of the student’s enrollment in A122). The variable \( X \) denotes the vector of student demographic markers such as race, gender, first-generation status, and baseline high-school GPA, SAT/ACT scores that influences student outcomes, as evidenced by the results obtained in Phase 1 of the study. \( \varepsilon \) denotes a random error term. Analyses of non-continuous outcomes will be treated appropriately using linear probability models or other techniques for limited dependent variables.

We will also examine the variation in student outcomes across the various sections of the multi-section class. We will explore the use of fixed effects to account for the time invariant observed and unobserved differences across the various sections/instructors of the class that might influence student outcomes differentially. We will use the following model specification to explore such variations in student outcomes.

\[(2) \quad Y_{it} = \alpha + \beta X_i + \theta_j + \varepsilon_{it} \]

Similar to equation (1), equation (2) includes the same student characteristics (\( X \)) that have been shown to influence the various outcomes of interest (\( Y \)), as described earlier. In addition, the variable \( \theta \) represents section/instructor fixed effects that captures all time-invariant characteristics of the section/instructor that the student is exposed to when enrolled in A122, which might influence his/her outcome differentially.

In sum, our research team, which includes the PI (Robinson), a talented graduate student statistician from SPEA, and a talented associate instructor of A122 from CMCL, will explore the academic trajectories and contexts of students who enroll in this class using the rich student-level data available in the administrative records at IU.

- **Measures of success.** Success will mean we have (1) refined our understanding of demographic trends in learning and teaching in CMCL C122/ANTH A122, especially as compared with other large general education courses, (2) identified patterns in comparisons of sections of the course, (3) identified and begun to implement scalable interventions to address areas of concern, and (4) identified opportunities for transfer to other courses.

- **Previous research results.** Phase 1 of the project, completed in 2015, uncovered important demographic trends in student success within the course, though with little to no comparison to student populations outside of it. Among the most important findings were that first-generation, male, African-American, and nonresident alien students tended to have lower GPAs than students who describe themselves as white, Hispanic, Asian, two or more races, or having at least one parent with a bachelor of arts degree. Although these findings echo trends on our campus, the important questions to ask in follow-up are: To what extent does this course not only reflect but reify these campus demographic trends? What high impact points of intervention can be identified with multi-variate intersections? And What interventions can we make that will disrupt generic projected outcomes, such that students have more opportunity to distinguish themselves, reorder themselves, based on ability, effort, and insight rather than demographic association?
- Short CV - maximum of 4 pages, see attached.
- Nominating letter - from Professor Jeanne Sept, Chair of the Department of Anthropology, under separate cover.
EDUCATION

Ph.D. in English, Doctoral Minor in Folklore. Indiana University 2001.

ACADEMIC AND PROFESSIONAL APPOINTMENTS

Indiana University, Bloomington
Professor of Practice, Department of Anthropology, 2015-present.
Co-Director, Graduate Certificate for College Teaching, 2015-present.
Affiliated Faculty, Integrated Program on the Environment, 2013-present.
Affiliated Faculty, Center for the Study of Global Change, 2007-present.
Affiliated Faculty and Advisory Board, Sustainable Food Systems Working Group, 2014-present.
Professor of Practice, Department of Communication and Culture, 2013-2015.
Course Director, Interpersonal Communication, 2008-2015.
Senior Lecturer, Department of Communication and Culture, 2008-2013.
Adjunct Assistant Professor, Department of Communication and Culture, 2000, 2006-2008.
Director, Campus Instructional Consulting, Indiana University, 2002-2008.
Director, Instructional Consulting, Indiana University, 2000-2002.
Associate Director, Instructional Consulting, Kelley School of Business, 1999-2000.

PUBLICATIONS, Selected

Books

Book Series Editor

Articles and Book Chapters—Performance and Anthropology—redacted for short CV
Articles and Book Chapters—Scholarship of Teaching and Learning, Selected


Robinson 2
PRESENTATIONS AND CONFERENCE PAPERS, Selected

Keynote and Plenary Presentations


Plenary Panel with Mary Taylor Huber and Jacqueline Dewar. International Institute for SOTL Scholars and Mentors, Loyola Marymount University, Los Angeles, June 1, 2012.

“Stories from the Field: Space, Place, and the Performance of Self.” Association for the Study of Literature and Environment biannual meeting, Bloomington, IN, June 2011.

“Faculty Inquiry Networks in the Scholarship of Teaching and Learning” SOTL Commons Conference, Statesboro, GA, March 2011.

“Building Faculty Development Networks.” International Symposium, Future of Faculty Development in Japan: Building the Core in Faculty Development, Kyoto University. January 2009.


“Expanding the Scholarship of Teaching and Learning.” Continuous Improvement Symposium of the Association for the Advancement of Collegiate Schools of Business, St. Louis, October 2001.

Invited Presentations, Selected


Conference Papers and Presentations (Peer Reviewed), Selected


---

**GRANTS, Selected**


---

**AWARDS, Selected**


Theodore M. Hesburgh Faculty Development Award, for the Scholarship of Teaching and Learning Initiative. Sponsored by TIAA-CREF. Initiative director and proposal co-author. $30,000. 2003.

---

**SERVICE, Selected**