Process Evaluation of REACH Initiative

(abbreviated)

Submitted to
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June 15, 2019

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Executive Summary

This report presents an empirical evaluation of an active learning model: REACH, implemented in high enrollment undergraduate courses at the University of Wisconsin Madison. The insights gained from data collected from multiple sources (i.e., students, faculty, instructional designers, academic staff members) through document reviews, surveys, meetings, interviews and focus group studies indicated, following a well-planned structured approach to transforming traditional courses to REACH-'active learning' courses, the REACH model has been successfully implemented in many departments and colleges. The data supports REACH's acceptability and future sustainability across departments. The report reveals specific strengths of the model as well as the areas to improve. It also provides specific recommendations on how to improve the model and ensure its sustainability.

EVALUATION PURPOSE

The REACH (*RE-designing for ACtive learning in High-enrollment Courses)* project was initiated in 2015, which is focused on changing the learning experiences from passive participation to active and engaged learning experiences in high enrollment undergraduate courses at the University of Wisconsin-Madison. The project has three objectives:

- Transform high-enrollment courses to be more active and inclusive for students and sustainable by departments.
- Inspire greater student responsibility for learning by increasing student inquiry and engagement with the subject matter
- Improve student learning.

To reflect on the first two objectives of REACH, we conducted a year long process evaluation of the project, hence, our evaluation did not cover the third objective ('Improved student learning'). We had two evaluation questions:

- How has the 'Active Learning' model been implemented in the courses?
- What are the experiences of faculty and students on the model implementation?

EVALUATION SCOPE / LIMITATIONS

- The evaluation focused only on the first two objectives of the project and did not cover the third one ('improved student learning').
- We prepared this evaluation report based on a one-year evaluation of the REACH project, so the findings may not reflect the project from its inception. Therefore, the findings must be considered with caution
- We did not collect data from all of the REACH courses (except to conduct the faculty and student survey). We only evaluated some of the components of two of the thirteen REACH courses, and interviewed only three REACH faculty members. Therefore, generalizations of the evaluation findings to all REACH courses may not be appropriate

PROJECT BACKGROUND

The REACH project has multiple stakeholders: faculty, students, Teaching and Learning Specialists (TLSs) and academic staff members with specific roles in the project. The project follows a five-step process (see Figure 1) to transfer the traditional lecture-based courses into active learning-oriented courses. In the 'Overview' phase, the project engages deans, department chairs and key instructors to collaboratively discuss on possible courses to be transformed and then in the 'Discovery' phase they decide on a course to be transformed. In the 'Design and Build' phase, the project team, in collaboration with key instructors and TLSs, jointly develop the course objectives, course map, course materials, assessments, activities and timelines for each of the transformed courses. In the 'Teach and Tweak' phase, the transformed courses are taught and adjusted as needed. Then the courses move to 'Sustain' stage, which ensures the courses would continue to be taught in the transformed 'active learning' way.

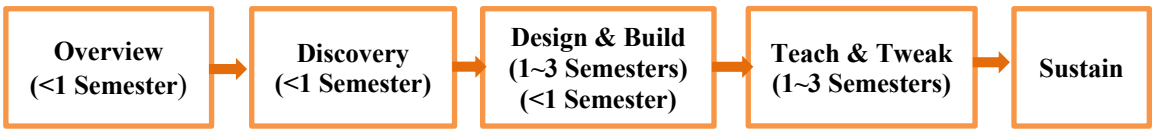

Figure1: Transformation Phases of a traditional course to Active Learning Course

So far, the project included 34,387 students, 75 instructors and 446 Teaching Assistants (TAs). Thirteen unique undergraduate courses had been transformed to active learning courses and were offered 58 times. The courses were in the fields of Anthropology, Chemistry, Communication Arts, Kinesiology, Anatomy & Physiology, Math, Material Science & Engineering, and Physics.

EVALUATION METHODOLOGY AND DATA SOURCE

To learn about the project, its underlying objectives, and how it had been implemented, we, the evaluation team, worked closely with the project team for a year. Using a data triangulation methodology (see Figure 2), we collected empirical data from multiple sources. To gain perspectives from stakeholders on various aspects of the project, we interviewed the project sponsors and staff and reviewed the project documents as needed. We conducted a focus group interview with all of the TLSs involved in this project. To understand the experiences of the faculty and students in the active learning courses, we conducted a student survey and a faculty survey. The survey items were adapted from prior studies but re-worded to make them relevant to our study context. We also interviewed one faculty member who taught one of the active learning courses. We conducted two classroom observations for one of the active learning courses to examine how teaching had been implemented using the project's principles and practices.

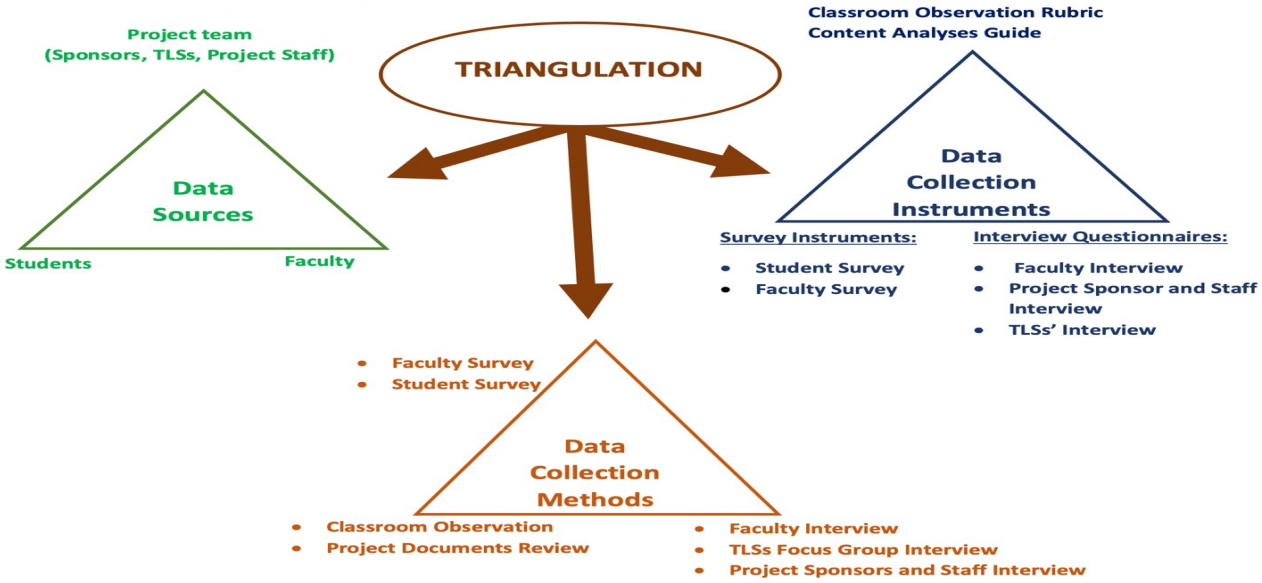

Figure 2: Evaluation Methodology

To develop a comprehensive understanding of the project, we triangulated the data we gathered from multiple sources which complemented each other and ensured both reliability and validity of the findings and increased the credibility of the overall evaluation. Table 1 summarizes the supporting data we used to answer the evaluation questions.

Table 1. Data used to answer the evaluation questions	
Evaluation Purpose/ Questions	**Supporting Data**
Overall evaluation of the project	Document reviews, faculty and staff meeting observations, classroom observations, students and faculty surveys, REACH staff interviews, TLSs focus group study

Evaluation Question 1: How has the REACH model been implemented in the REACH courses?	Two classroom observations and one faculty interview (we utilized case-study approaches and examined one of the initial REACH courses and one newer course which is in the 'Design and Build' stage)
Evaluation Question 2: What are the experiences of faculty and students in REACH courses?	Faculty and student surveys

**To answer the evaluation questions, we also relied on data collected from REACH sponsors, and REACH staff (i.e. tri-Leads, TLSs)*

DATA ANALYSES AND EVALUATION FINDINGS

Using a mixed method approach, we analyzed the quantitative data and evidence-based experiences, perspectives and suggestions of instructors, project staffs and students on this active learning initiative. We used SPSS to analyze the quantitative data. We content analyzed and coded the qualitative data to summarize themes. Our analyses revealed a detailed picture of how the active learning initiative was viewed from multiple stakeholders, where the initiative needs improvement and how the stakeholders think the initiative could be refined in future.

Key Findings from Student Survey

The student survey was sent to 6500 students who were enrolled in at least one of the active learning courses, 803 students completed the survey with a response rate of 12%. Students reported their experiences in the active learning courses by responding to 5-point Likert Scale items (with 1 being the lowest point and 5 being the highest point).

Students' attitudes toward REACH courses:

- Students possess positive attitudes about active learning courses (M=3.83) and instructors (M= 4.08)
- Students actively participated in class activities (M=4.31) and they have lower in-class distractions (1.84). Students reported that instructors used more passive (M= 4.06) and constructive instruction (M= 3.52) than active (M=3.20) or interactive instruction (M=3.10).
- During instruction, facilitation strategy (M= 3.99*) was used significantly more than the explanation strategy (M= 3.85) [t (-5.700, p<.01, r=.713].
- Students were neutral on reporting inclusive learning practices in class (M=3.575) and neutral to positive on evaluating the course (M= 3.79)
- 66% of the survey participants responded to an open-ended question about what they liked most in REACH courses. They reported the following: (i) well planned structure, content and design of the courses (41%) (ii) caring, engaged and motivated instructors (28%), (iii) students felt empowered, engaged and active in course activities and enjoyed the course (24%), (iv) inclusivity in class (5%), (v) grading policy (graded on several parts: quiz, exams, group activities.) (3%).

Key Findings from Faculty Survey

To understand faculty attitudes about the active learning courses, a survey was sent to 521 faculty members [75 instructors and 446 Teaching Assistants (TAs)], who taught in at least one of the active learning courses, 151 of them responded to the survey with a response rate of 29%.

Faculty attitudes towards active learning courses:

Faculty-members described their experiences teaching in active learning courses by responding to 5-point Likert Scale items (with 1 being the lowest and 5 being the highest). The key findings from the faculty survey are:

- **Instruction types used:** Faculty-members reported using both active (M=3.44) and passive instruction (M=3.18) in class. They also reported they mostly use inclusive learning practices in their active learning classes (M=4.18)
- **Changes in teaching practices:** Faculty-members reported various positive changes in their teaching after they participated in the project. The mostly mentioned changes were:
    - More active and student-oriented teaching, less lecturing and more student facilitation (52%)
    - Facilitate discussion sessions in a more organized way, ensure more in-class interactions (40%)

- Follow more uniform, learning-objective based, efficient course structure (6%)
- Assess students in multiple ways (2%)

Faculty attitudes towards the supports provided by TLSs: Faculty members were asked if they interacted with one or more TLSs while developing or teaching their REACH courses. 54% reported they did interact, while 46% reported they did not. For those who interacted with TLSs, they reported the interaction was mostly positive (M=4.25). When explaining the types of supports they received from the TLSs, the major areas mentioned include: (i) guidance on teaching strategies for active learning environment, (ii) guidance on how to interact with students, how to run discussion sessions (55%), (iii) Course Design (25%) and (iv) Technology and other supports (20%)

Faculty Participation in Training and Professional Development (PD): Faculty members were asked about their participation in training and PD events in last three years. As reported by the faculty members, faculty participation in formal professional development events (i.e., workshops or training on teaching strategies) was low. 22% of the instructors reported they never attended any workshop or training about teaching strategies; 38% reported they joined workshops three or more times, the rest 46%, either joined once (24%) or twice (16%) in last three years.

Recommendations from Faculty and Students to improve Active learning instructions:
In the surveys, faculty and students were asked to provide their recommendations on how to improve the REACH courses. The responses included the following:

Faculty Recommendations	Student Recommendations
48 instructors (32% of the survey participants) provided recommendations. The most frequently stated areas are: • Simple, planned and connected course structure with active learning and lecturing both, less but relevant homework (49%) • Providing training and Professional Developments to instructors and TAs (20%) • Increasing student motivation through building awareness of Active Learning (16%) • Less workload for students (10%)	522 students (62% of the survey participants) provided recommendations. The most frequently stated areas are: • More organized and connected activities, less work load, less emphasis on pre-class activities and more focus on concept building (52%) • Better prepared Instructors (specially TAs) to run the active learning sessions (discussions, whole class question answer sessions, etc.), more help from and easier communication to the instructors (31%) • More relevant exams and more reasonable grading policies (14%)

Key Findings from Other Data Sources

The insights gained from classroom observation, meeting observations, stakeholders' interviews and document reviews produced the following:

Insights:

- The project follows a well-planned structured approach to transforming traditional courses to active learning courses. The active learning model has been successfully implemented in many departments and colleges and is expanding to more departments and courses at the university.
- The project stakeholders believe in the potential for active learning to improve student engagement and consequently, student learning. They also value the idea of a common syllabus and course structure and appreciate the collaborative process of transferring traditional courses into active learning courses.

Challenges:

- Although the active learning courses were always designed collaboratively by the lead instructors, TLSs, and the leadership/ executive team, all of the instructors and teaching assistants (TAs) who teach the active learning courses (partially or fully) were not involved in the design phase.
- Out of the 521 instructors, 446 (86%) were teaching assistants (TAs). TAs often had little to no teaching experience in active learning environments but they taught a significant portion of the courses (i.e., lab classes,

group discussions, etc.). The TAs do not know which course they are going to teach in the next semester until the very end of the current semester. Therefore, it becomes challenging for them to start teaching an active learning course without knowing much about the underlying principles and practices of in active learning classrooms.

- Implementing active learning courses in large traditional lecture halls with over 200 to 300 students was a continuing challenge.

EVALUATION RECOMMENDATIONS

The evaluation findings suggest that the REACH program has been implemented successfully as evidenced by the positive attitudes of a majority of faculty and students. Moreover, the successful transformation of traditional courses to REACH courses by different departments indicates its acceptability across departments and the future sustainability of the courses. However, innovation in teaching and learning is a process and needs continuous improvement. To improve the REACH initiative, the faculty, students and TLSs provided their recommendations, which are mostly consistent and indicated some areas of improvement. After the overall evaluation of the project, we see one of the greatest needs to be in the offering of Professional Development about REACH instructional practices and strategies. In summary, the following are suggested recommendations:

- **Training and Professional Development about Active Learning:** In the REACH project, most of the pedagogical, instructional and technical support that TLSs provide to the instructors are treated as training and professional development (PD). This may not be enough, as instructors are mostly experienced in traditional teaching and it is hard for them to move to an instructional practice without having adequate formal training on it. By offering regular training and PD events to all REACH instructors, they can be made fully aware of the REACH course design, such as the underlying objectives and active learning strategies.
- **Special Training and PD for TAs**: Because a significant portion of the REACH instructors are TAs who may not have teaching experience, special training and PD events should be offered on a regular basis for the TAs about facilitating discussion sessions and active learning classes so that they are prepared before they start teaching. They could also learn about how to utilize technology and design overall REACH courses, similar to what faculty learn in consultation with the TLSs.
- **Examples of 'Active Learning':** While organizing training or PD events, emphasis should be given on what active learning looks like in practice. It is important to provide a variety of accessible and clear examples (e.g., articles, video clips, etc.) of successful active learning activities for instructors in high enrollment classes in large, traditional setting classrooms.
- **Regular Communication between TLSs and Instructors:** The REACH team should stress the importance of utilizing the TLCs' skills and expertise to better design the course. It is also important that trust, accountability and responsibility are built between the instructors and the TLCs.
- **Course Structure:** To ensure student learning, REACH courses should be designed such that the course does not overload students, faculty members or TAs.
- **Continuous Evaluation of REACH processes:** REACH should make evaluation an integral and ongoing part of its implementation. Continuous evaluation of REACH would help to monitor progress towards its goals more effectively and efficiently by periodically identifying problematic areas and the challenges in designing and implementing REACH courses.

CONCLUSION

Our evaluation revealed that the project has gained acceptance from the faculty and students. Also, it revealed some challenges that could be addressed. By working on the problem areas identified above, the project team could refine the development of the courses to ensure successful implementation in future. That said, the evaluation is limited by the short timeline and small scale of the project. As such, we are unable to identify discipline-specific needs and problem areas for each of the active learning courses under this project, and are also challenged by the inability to generalize. Our hope is that our findings provide some awareness and recommendations that can be used to improve the implementation of active learning initiative.