

# **University of Wisconsin System**

## **FY16 Innovation Program Final Project Report**

### ***Using iClicker to Enhance Students' Learning in Large Classes***

*Yunhong "Tom" Tu  
Raymond Reinertsen  
University of Wisconsin-Superior*

#### **Executive Summary**

This report reviews how the UW-Superior team designed and implemented the iClicker and Reef Polling technology to an HHP 102 large class offered at UW-Superior in the fall semester of 2015. The report shares the findings and recommendations based on the students' feedback regarding their experience using the iClicker technology.

#### **Purpose and Objectives**

Many instructors who teach large college classes with more than 100 students often feel challenging to effectively engage the students' learning in class. Research showed in addition to improved teaching strategies, instructional technology can assist to engage the students during the lecture and discussion time in class. iClicker response system is an innovative learning technology that can increase student attendance and performance in large classes.

As part of the General Education requirements, HHP 102 class offered by the Department of Health and Human Performance at the University of Wisconsin-Superior usually has large enrollment. Multiple class sections are offered each semester. There are still more than 90 students in each section. The HHP 102 instructor is a veteran with more than 20 years of experience teaching the course. The instructor has been actively seeking pedagogical and technological support to continuously improve the students' learning. With the support of the UW System Innovation Fund, the project team expected to achieve the following objectives:

- To assess the student understanding of course topics in real-time and make the adjustment to the lectures if needed.
- To enhance class attendance and student performance.
- To better engage student learning in large classes.
- To make it easier for the instructor to collect and manage individual student participation in class and providing just-in-time feedback.
- To promote mobile learning to the campus

## **Organization and Approach**

In Fall 2015 Semester, the HHP 102 instructor teamed up with the campus Instructional Designer and Technology Services unit to implement the iClicker and Reef Polling technology in one HHP 102 class with 99 students enrolled. The instructor used the technology constantly to poll or quiz the students during the class meetings throughout the semester. The students participated in the polling and quizzes using Reef Polling app on their own mobile devices or laptops. The team surveyed the students regarding their experience using the technology at the end of the semester. The survey results were studied and analyzed.

### *Role Identification*

The team identified the role and responsibilities for the team members:

The Instructional Designer:

- provides ideas and insight to the design of learning activities using iClicker response system in large classes;
- communicates with iClicker company;
- provides technical support to the instructor on how to set up iClicker and use it to create and manage polls and quizzes; how to manage and collect individual student participation and grades;
- promotes iClicker use to more instructors for both large and small classes;
- works with the instructor to design and implement pre-test, post-test, student survey;
- collects and analyzes data as well as preparing project report to measure the success of the project.

The instructor:

- integrates iClicker response system in teaching HHP 102 large classes;
- creates polls and quizzes to be used in classes to engage student learning;
- manages and collects individual student participation and grades;
- works with the instructional designer to design and implement pre-test, post-test, student survey;
- assists to collect and analyze data as well as preparing project report to measure the success of the project.

Technology Services:

- provides general technological support and resources;
- manages the Innovation Fund account.

### *Project Implementation*

**1. Set up iClicker response system and Reef Polling System for the instructor and students:**

With the support of the UW System Innovation Fund, the team was able to provide the iClicker Reef Polling student subscription to all of the 99 students enrolled in this HHP 102 class session. The students followed the instructions prepared by the instructional designer to download Reef Polling App to their mobile devices and activated their accounts.

The Instructional Designer worked with iClicker support staff to set up the instructor's online account on iClicker and Reef Education website. Downloaded and installed the required software to the instructor's computer station in the lecture hall serving as the HHP 102 classroom.

**2. Designed learning activities using iClicker in large HHP 102 classes:** The instructor and Instructional Designer worked together to design and develop poll and quiz questions to be used in classes throughout the semester.

**3. Implemented iClicker System in the class:** The instructor started implementing iClicker system in HHP 102 class by polling students during the class lecture time and class discussion time. The students participated in the polls with their own mobile devices or laptops. The Instructional Designer and Technology Services staff provided general technological support and resources.

*Quality Assurance and Project Evaluation*

The project team supports the UW System Office of Learning and Information Technology Services' efforts in promoting the quality of the Innovation Grant funded projects. Throughout the project duration time, the project team submitted three reports (60-day, 90-day and 120-day) to not only keep the system closely updated but to use the reports to assure quality.

During a class session in the Final Week of Fall 2015 Semester, the project team surveyed the students on their experience using iClicker System in HHP 102 large class. The instructor distributed a short three-question paper survey to the class. The survey was designed as voluntarily and anonymous. 60 out of 99 students returned the survey. A survey response rate of 60% was recorded. The student's responses to the survey questions were collected and analyzed.

### **Analysis and Findings**

The project team asked three questions in the student survey:

- List 2-3 most helpful benefits you saw Reef Polling technology brought to your learning.
- What are the areas you expect us to improve?

- Would you like to try Reef Polling technology again next semester? Why or why not?

Responses from the student survey were collected and analyzed. The team found 83% of the students who returned the survey stated at least one helpful benefit iClicker and Reef Polling technology brought to their learning. 83% students indicated their interest and willingness to use the technology again in the ensuing semester. 44% of students provided some suggestions to the project team on how to improve the iClicker and Reef Polling use.

The students' responses to the survey questions are collected and shared below. Responses with similar meanings are not repeated recorded here.

- List 2-3 most helpful benefits you saw Reef Polling technology brought to your learning.
  - *"Easy access"*
  - *"Fun, interesting and more interactive"*
  - *"Everyone participated"*
  - *"Don't need to raise hands; answered the questions without being embarrassed"*
  - *"Make class more engaging"*
  - *"See other students' opinions and thoughts with anonymity"*
- What are the areas you expect us to improve?
  - *"Not free; Be Cheaper than \$9.99"*
  - *"Need to improve the app's quality"*
  - *"Improve the account sign up experience"*
  - *"Need the Android version of the app"*
  - *"Allow enough login time before the polling"*
- Would you like to try Reef Polling technology again next semester? Why or why not?
  - *"Yes, it was cool to see results"*
  - *"Yes, it was easy to use"*
  - *"Yes, we were able to answer questions without identifying the kid"*
  - *"Yes. Made class more interactive"*
  - *"Yes, if it is free"*
  - *"Yes, it was fun and useful"*
  - *"Yes, I thought it was a good way to learn"*
  - *"Sure but no classes we could get clickers"*
  - *"Yes, because it helped improve attention and engagement in the class"*

- “Yes, it was a good way to anonymously pool”
- “Yes because it’s way easier to use Reef Polling than paper”
- “I don’t care”
- “I would if I had class like this but I don’t”
- “No, not impressed”
- “No, because not everyone knows how to use it and no everyone has technology with them during class”

## **Conclusions and Recommendations**

The project team concluded the promotion of iClicker use in both large classes supports the achievement of the learning technology and UWS Operations objectives. It directly impacts instruction and students’ learning and helps promote a technology-enriched learning environment.

The project team recommended the continuous promotion of the iClicker use on UW-Superior campus. The good news is with the support of the vendor, another HHP 102 class has the opportunity to use iClicker Reef Polling app for free in Spring 2016 semester.

## **Appendix**

Final Budget:

Total Expense: Reef Polling Student App Subscription:  $100 \times \$9.99 = \$999$

Team Members:

Yunhong “Tom” Tu  
[ytu@uwsuper.edu](mailto:ytu@uwsuper.edu)  
 715-394-8463  
 University of Wisconsin-Superior

Raymond Reinertsen  
[rreinert@uwsuper.edu](mailto:rreinert@uwsuper.edu)  
 715-394-4621  
 University of Wisconsin-Superior