A Tale of Two 1st year Biology courses - The BioFlex Approach
Collaborative and Evidence-Based Approaches Towards Improving Student Learning and Experiences

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INTRODUCTION
What is BioFlex?
Learning- and Learner-centered course transformation pilot of two large-enrolment and multi-section 1st year Biology courses (BIOL 112 and BIOL 121) - which unified the teaching methodologies among the different sections of the courses within the "BioFlex Learning Path" framework.

Questions we asked:
• What do the learning- and learner-centered course transformations look like?
• What is the effect of such course transformations on:
  - student learning?
  - student perception of their learning experiences?
  - Faculty experiences?

Project Assessment Strategies:
What we documented:

RESULTS
Assessment Results from Diagnostic Questions
Pre- and post-test matched responses to select concept diagnostic-questions

A comparison of student performance in the courses between pre- and during/post-BioFlex pilot.
The comparison revealed interesting and encouraging shifts in student final grades. The mean course grade significantly increased in both BIOL 112 (69.9% to 74.0%) and BIOL 121 (67.5% to 74.4%).

Grade shifts in BIOL 112
• reduction in the proportion of grades below 60% and 76-79%.
• increase in grades in the 68-71% and 80-100% ranges.

Grade shifts in BIOL 121
• reduction in the proportion of grades below 68%.
• increase in grades above 68%.

Classroom Observations using COPUS® and BERI®
What do our transformed classrooms look like?
Summary of data collected during one lecture using the COPUS and BERI tools

Most students are engaged in their learning during most of the class time.

Student Experiences Survey and Focus Group Data
A subset of questions from the Students Experiences Survey

A subset of topics from Student Focus Groups - 2014W1

CONCLUSIONS

• Enhanced student performances were observed as a result of the course transformations.
• Active Learning approaches in the classroom were valued and perceived as more beneficial to learning and the learning experiences both by students and faculty.
• Collaboration was key to the success of the BioFlex both on student learning and student-learning experiences.
• The project’s outcome was much more than a collection of course content - it was also a model for large-team, cross-campus collaboration.

Faculty Experiences Quotes from End of Term Survey
Faculty reported a substantial workload increase. However, irrespective of rank and stream, they also emphasized that the experience was well worth their effort and time.

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