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Living and Loving Biology: A Learning Community with Research for College First-Years

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Living and Loving Biology: A Research-Based Learning Community at James Madison University
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The Trelawny Learning Community
JMU’s Biology Learning Community started as a group of 24 students who lived in one dorm and took intro courses together as well as a seminar. I changed “TLC” to a research-based experience where students entering college could begin research right away and explore their interests in Biology. The group is small (10-12) so each student can join a department research lab. Often TLC’s shadow a lab team and then progress to hands-on research.

Main Objectives of TLC:
1) Provide research for first-year Biology majors
2) Increase student/department connection
3) Build teamwork skills

A Trelawny Year
Application & Selection

Interchange with Mentors: Another Generation of Learners
Past TLC’s enroll as mentors. About 5 mentors from different research labs guide the first-years in lab and in seminars. They also read journals (examples to right). They gain insight and experience by teaching their peers.

How to Assess Learning Outcomes?
This data represents the first application of qualitative techniques to TLC. To start, student journals are theme-coded with NVivo to assess what students learn from their first-year experience. Themes are coded in the context of research, and include:

Motivation/Eagerness
I am eager to finish training quickly...and I am looking forward to our first experiment and finding out what kind of role the other team members and I will play.

Revelation/Discovery
I realized that this research includes a lot of down time while things are processing. The experiment took place till the next day and possibly longer.

Realization of Failure leading to Growth
Today didn’t go too well...he looked at my results and noticed that they were wrong! ...On the other hand, now that I’ve had all that practice, I’m a lot faster at interpreting the data.

Emotions
I am a little disappointed that there is nothing hands on that I am allowed to do this semester.

Connection with Department
Benefits
Connection with Department: Preliminary surveys suggest TLC’s know significantly more faculty and graduate students than fellow majors.

Benefits: Without prompting, students cited similar benefits of TLC.

Gender as Attribute: In this early data, only male expresses excitement and females express motivation 50%-more often than males. Otherwise, themes appear similar.

Coding for Nodes: Each node occurs with 18.7-28.8% coverage, with Realization of Failure having least and Emotion the most.

With establishment of some recurrent themes, in-depth analysis of journal/survey data can begin along with application of SoTL theories relevant to this type of program.

Data also shows students expectations of the program, which aids its development.

Fallbacks of this New Program
Many students don’t receive research because they CAN’T:
Dr. C is concerned about the lack of space he has in the new building and doesn’t know how many people he can take on.

The comment above describes the biggest hurdle to the TLC program: Difficulty placing each student in a lab where they can have a reasonably active role and stay on if they wish. Competition for research is high. In 2014, we will target labs with graduate students who can train new students while increasing their own productivity.

Faculty involvement is a challenge:
The same individuals tend to take on TLC students - and so far, the only faculty incentive is a Service credit.

Future Plans for Assessment
Teamwork and Mentor Learning Outcomes:
In Fall 2013, mentors will continue their journals in their new teaching/learning role. Their writing will provide a source of coded themes for comparison with first-years. Teamwork skills will be assessed in the near future as well.

Add a Control:
Now that a few semesters of data from TLC are being collected, data can begin along with application of SoTL theories relevant to this type of program.

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