

Department of Biological Sciences

Unit-Level Assessment Liaison Report - Farah Movahedzadeh

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In recent years, most higher education institutions have increasingly begun to focus on student success. One of the ways that student success is being measured is retention rate, where first-year students continue their education to their sophomore year. In the query done over two years ago by the assessment committee, we asked our students about their experiences at HWC: What can be done to help them feel comfortable, safe, valued, and/or able to be yourself in all HWC physical and virtual spaces. 30.31% of student responses addressed the theme of teaching modality. 76.96% of students felt safe because classes were remote, while 23.5% said they were having a difficult time learning online or were missing in person collaboration. While about three years ago teaching remotely was the only option for our students, they now have the additional opportunities of in-person or hybrid learning. Students come to our college with unique learning styles, needs, and life experiences. Because of this array of experiences presented by our students, administrators, advisors, and faculty need to be aware of the new questions facing these students in regard to the best method of learning that will benefit each student the most (online, in-person, or hybrid).

Additionally, after being away from a formal classroom for a couple of years, a good portion of our students may have a difficult time connecting with peers and professors. So, I wonder, do we know our students, are we advising and supporting them correctly, and are they aware of the differences in the three modalities? We need to understand our students' perceptions of their own learning processes. Have they chosen the right classes, what kind of learning opportunities are most helpful to them, and have we been helping them to understand which modality is best for their learning style?

I. Department Buy-In and Outcome Definition

The Bio121 course is one of the most popular courses in the department of Biological Sciences at Harold Washington College that requires a laboratory component and is a prerequisite for several courses in our department. During the Covid shutdowns we were forced to teach remotely, but since the Fall 2021 semester we started offering only face-to-face or hybrid modalities for this course. Although the Biology department at HWC no longer offers a fully remote option for this course, some of our sister colleges have continued offering remote courses.

We struggle to know whether the online simulations and virtual labs have been as effective as the face-to-face laboratory sections. For instance, can students be successful in higher level classes like microbiology if they have only taken online classes and never used a microscope? If not, is a reorganization of online or hybrid learning modalities necessary for advanced classes to be accessible to students who have only taken college courses online? As we have the ongoing conversations about enrollment, retention, and student success, we must also consider students as individuals, their learning style, and the modalities each student uses. We need to take a fresh look at what the realities are for different students and think about how we should be responding to their needs. In order to make progress toward these goals, I developed an indirect assessment of Biology students, starting with Bio 121 classes offered in Fall 2022.

II. Assessment Research and Design

To better understand our students' perceptions, a 10-question survey was prepared using a Google Forms document. The link was distributed to students who took Bio121, one of the most popular courses at HWC, during the Fall of 2022. Out of 140 students who enrolled in this course, we received 88 responses. In Spring 2023, responses were analyzed with assistance from Professor Phil Vargas, who is the Research Analyst of Assessment committee. The respondents' survey, 77 provided valid and unique IDs.

Further analysis was determined, when sample size allowed, whether there is a meaningful correlation among the responses.

Some of the questions:

Was it your choice to take a face-to-face, hybrid, or online course?

Why did you choose the type of course (hybrid, online, F2F) delivery?

What time of day do you prefer to have your classes?

I am well-advised by the college advisors to choose the right courses: True or False

Do you have access to a computer with internet at home when and wherever you need it?

What format of a book do you prefer?

How often did you work on problems or study with a classmate or group of classmates outside the classroom?

What component of the biology course do you like the most?

Do you think students can learn microscopy in a remote modality?

III. Pilot Assessment Tools and Processes

Due to the simplicity of the survey, we determined that a pilot was unnecessary and that we could move directly to deployment of the assessment measure.

IV. Administer Specific Assessment

Bio121 is one of the most popular courses, and a prerequisite for several higher-level courses in our department. On average, we offer ten sections of this course each

semester. A ten-question survey, using Google Forms, was designed and sent to the students who participated in all the sections of this course during Fall 2022 semester at HWC. The faculty was also reminded to ask all participating students to complete the survey. We accepted completed surveys by the end of Fall 2022 semester.

V. Data Analysis

There were 140 students enrolled in Bio 121 that fall. Of those enrolled, 88 responded to the survey, however 77 provided unique answers, with valid IDs. Out of 140 students who enrolled on this course, we had a good response rate of 62.8%. 85% said it was their choice of choosing the modality and 58% were science majors. 52 (68%) of the students finished the course with an A or B grade. Since the City Colleges of Chicago considers an A, B, or C as a success, with that criteria 67 (87%) students were successful. Out of the students who responded to the survey, 64 students were retained, 4 students graduated, and 9 students dropped out. Additionally, 41 students in this group enrolled in a biology or microbiology course in Spring 2023.

VI. Supporting Evidence-Based Change (Use of Findings)

The very positive aggregate results suggested the majority (69%) said they loved the lab portion of the course the most. However, 76% (agree or somewhat agree) indicated that someone can learn a microscope in a fully remote session! The majority, 73% (agree or somewhat agree), indicated that they were well-advised by the college advisors to choose the right course, however there was no correlation between advising and student success. Unfortunately, due to insufficient data we could not conclude any correlation between being well advised and taking future classes or transfer.

Because of the insufficient sample size, we couldn't come up with a clear correlation between some of the important student responses to the survey; for instance, finding correlation between number of students who liked the labs and taking future classes,

but there was a moderate correlation (0.4) between liking labs and student success. In addition, there was a slight correlation (0.23) between students liking labs and believing you can learn a microscope online.

Success Factors

The survey was straightforward, so a decent number of students participated. The assistance of Professor Phil Vargas was very helpful in further analysis of the survey. The good response rate suggests that the survey design and methods are sound, and we are optimistic that a second attempt will yield the information we hope to gather. However, more collaboration from faculty, mainly our adjunct professors who teach most sections of this course, will be needed to increase the rate of participation further.

Recommendations

I recommend that we attempt this assessment again in the fall semester of 2023. It was surprising that there was no correlation (0.13) between advising and student success. Because of this lack of correlation, it is curious to know whether students think advising is more about guidance to 1) good professor fit, 2) class section that fits their schedule, or 3) a class that fits their academic/career plan, instead of only their ability to complete the work. Therefore, we should be assessing what students need on an individual basis and responding with the best modality for each student.

Moreover, since the survey was designed to collect student IDs, we were hoping to do intended analysis like seeking correlations, however, there was not enough information to find some of the correlations. Therefore, more data needs to be collected in future semesters for further analysis.