

**University of Louisiana Monroe**

**QEP Annual Impact Report**

**Summer 2021**

**Section 1: A succinct list of the initial goals and intended outcomes of the Quality Enhancement Plan**

*FOCUS on Biology*, the Quality Enhancement Plan (QEP) of the University of Louisiana Monroe (ULM), seeks to increase student success and critical thinking skills in two introductory science courses through instructional enhancement. Sixty-one percent of incoming students to ULM are required to take either Fundamentals of Anatomy and Physiology I (BIOL 1014) or Principles of Biology (BIOL 1020). FOCUS sessions will be integrated into all sections of these courses. The primary goal of ULM’s QEP is to improve performance and success of STEM and pre-health sciences freshmen students in these two gateway biology courses. The QEP will use high-impact practices to implement an innovative strategy focused on improving student learning by enhancing critical thinking.

**Initial Overarching QEP Goal**: To improve academic performance in the two gateway science courses that all STEM and pre-health sciences majors must take, BIOL 1014 and BIOL 1020. This goal will be monitored by student success rates in the two courses as well as success in subsequent science courses.

**Initial Learning Outcome 1**: To improve critical thinking skills as defined by the Critical Thinking Assessment Test (CAT) developed at Tennessee Tech.

**Initial Learning Outcome 2**: To develop discipline-specific knowledge aligned with a locally developed mneumonic: **F**ormulate, **O**bserve, **C**ommunicate, **U**se, and **S**ynthesize.

**Section 2: A discussion of changes made to the QEP and the reasons for making those changes**

**COVID-19:** The global pandemic COVID-19 continued to cause disruption to normal operations in higher education during the Fall 2020 and Spring 2021 semesters. FOCUS sessions were held virtually during the Fall 2020 semester with some activities being done synchronously over Zoom and some being done asynchronously in the Moodle Learning System. During the Spring 2021 semester, FOCUS sessions remained 100% online for one section and were face-to-face for three sections. To comply with COVID-19 guidelines, the face-to-face sections were split into two classrooms and socially distanced. This modality seemed to be more conducive to the spirit of the FOCUS sessions but was still limited in the types of group work that could be done. Finally, the CAT tests for both semesters were still administered remotely due to the lack of a facility on campus that could accommodate all students in a section on a computer at the same time. Although this academic year saw many improvements over Spring 2020, the continued restrictions as well as personal challenges faced by students significantly impacted their ability to learn, engage with the material, and excel.

**FOCUS Content and Activities:** FOCUS activities were re-designed in innovative ways to accommodate the evolving circumstances with the pandemic. In the Fall 2020 semester, activities were adapted to an all-online environment. In Spring 2021, the activities were adapted again to an face-to-face environment that was conducive to the social distancing regulations.

**Diagnostic Questions:** Final exams, including the diagnostic questions for the QEP for both courses, were administered online during the Fall 2020 semester. In Spring 2021, the decision was made to shift to a pre-test post-test model for the diagnostic questions. The diagnostic questions were given in a FOCUS session at the beginning of the semester. Due to many class interruptions during this semester including weather closures, the post-test diagnostic questions had to be administered online.

**Administration of the CAT test**: The QEP states, “The CAT will be administered during the final FOCUS session to a statistically significant number of students selected at random from each course section. The students who do not participate in the CAT test will be given a locally developed computerized critical thinking test.” Students in three online sections in Fall 2020 and the three face-to-face sections in Spring 2021 took the CAT test online remotely due to the remaining capacity and distance restrictions of the pandemic. A locally developed computerized critical thinking test was administered to students in sections that did not take the CAT.

**Section 3: QEP impact on the environment and student learning**

The impact of the QEP on student learning remained difficult to measure due to the impact of COVID-19. The implementation of the FOCUS sessions has still been a learning process, and we have continued working with instructors and students to identify key areas of the FOCUS activities that can be improved in future semesters.

**Achievement of identified goals and outcomes**: FOCUS sessions were fully implemented into all sections of BIOL 1020 and BIOL 1014.

* **Overarching goa**l: To improve academic performance in the two gateway science courses that all STEM and pre-health sciences majors must take, BIOL 1014 and BIOL 1020. This goal will be monitored by student success rates in the two courses as well as success in subsequent science courses.
  + BIOL 1014 (Fall 2020): 76% of students received an A, B, or C
  + BIOL 1014 (Spring 2021): 62% of students received an A, B, or C
  + BIOL 1020 (Fall 2020): 56% received an A, B, or C
  + BIOL 1020 (Spring 2021): 58% received an A, B, or C
* **Learning Outcome 1**: To improve critical thinking skills as defined by the Critical Thinking Assessment Test (CAT) developed at Tennessee Tech. Tennessee Tech has issued a statement that they have seen an overall decline in performance on the CAT test due to the impacts of COVID-19. It is again important to note that the test was given remotely during both Fall 2020 and Spring 2021 semesters due to Covid-19 and weather events; therefore, the commitment and effort of students may have been impacted by this administration modality. There are 38 possible points on the test, and the national average has historically been around 15. ULM students across sections in BIOL 1014 and BIOL 1020 achieved the following average scores.
  + Fall 2020: 12.24
  + Spring 2021: 12.25
* **Learning Outcome 2**: The changes related to the diagnostic questions are important to note here. Review and revision of the diagnostic questions for BIOL 1020 in Fall 2020 improved course outcomes. Review and potential revision of diagnostic questions for BIOL 1014 will occur before Fall 2021.

Participation responses for diagnostic questions for Spring 2021 were low due to having to move administration of the questions online. Participation was encouraged by offering extra credit, which may have led students in need of extra credit to be the ones to participate. The following percentages of students answered 75% or more of diagnostic questions correctly.

* + BIOL 1014 (Fall 2020): 2%
  + BIOL 1014 (Spring 2021): 2%
  + BIOL 1020 (Fall 2020): 22%
  + BIOL 1020 (Spring 2021): 17%

**Section 4: A reflection on what the institution has learned as a result of the QEP experience**

At the beginning of the 2020-2021 academic year, the implementation committee conducted a comprehensive review of the diagnostic questions. This review yielded some important considerations for topic coverage and consistency across sections of a course. As a result, delivery of the FOCUS material improved. As the depth of implementation of the QEP has increased at ULM, we have continued to learn more about the ways that we not only teach students but also the ways that we assess students. When looking at student performance in a course compared with performance on the diagnostic questions, we were able to examine whether our class assessments were a good measure of what we want students to learn from a course.

Additionally, this review provided some insight into the level of thinking skills that we are encouraging in our students based on the design of assessment instruments. We have learned that it may be more difficult than first anticipated to build critical thinking skills in our students at this point in their educational process. As a result of this QEP, however, we have also had the opportunity to learn more about diverse ways to encourage these skills. The QEP coupled with the necessary changes brought about by the pandemic have created an impetus for us to explore and learn more about innovative methods of pedagogy, better practices of diversity and equity in the classroom, and more impactful methods to encourage critical thinking. Since different modalities can be used in face-to-face sessions, more success has been noted when compared to online FOCUS sessions. This success is related to the student-instructor and student-student connections that occur in face-to-face groups. As the world and academic institutions return to the provision of more courses face-to-face, we anticipate that these connections will be enhanced.