

Quantitative Literacy Authentic Assessment Process

Spring 2019

The Office of Assessment administered the HEIghten Quantitative Literacy Assessment to seniors in colleges that were underrepresented during the spring 2018 data collection cycle. Assessment staff will analyze the data over the summer and return it to the respective colleges for use in Academic Program Assessment.

Fall 2018

The Office of Assessment partnered with the Department of Health and Exercise Studies to recruit 429 first-year students for the ETS HEIghten Quantitative Literacy Assessment. The assessment was administered at the DELTA Testing Center over a two-week period. Results from the fall first-year and spring senior assessments were shared at a meeting of the Council on Undergraduate Education and the Academic Policy subcommittee of the Faculty Senate. The Office of Assessment worked with the Quantitative Literacy Competency Champion, Dr. Justin Post, to share the data with campus stakeholders. In spring 2019, the Office of Assessment will administer the HEIghten Quantitative Literacy Assessment to seniors in colleges that were underrepresented in spring 2018.

Spring 2018

The Office of Assessment administered the ETS HEIghten Quantitative Literacy Assessment to 574 senior students. The Office of Assessment worked with faculty and instructors of primarily senior courses to recruit student participants. Additionally, students volunteered to complete the assessment during a 3 week testing event. The Office of Assessment collaborated with ETS staff to develop a data analysis report at the outcome level. Using this report, assessment staff will work with the Quantitative Literacy General Education Competency Champion, Dr. Justin Post, to share data with campus stakeholders during the fall 2018 semester.

Spring 2017

The Office of Assessment continued to review models and instruments for assessment of quantitative literacy, including a review of QL items which can be gleaned from currently used instruments at NC State, such as at the Critical Thinking Assessment Test (CAT). The Office of Assessment has been in communication with Educational Testing Services regarding tailoring the HEIghten Quantitative Literacy assessment to meet the needs of assessing QL at NC State. Based on these

discussions and the development of this instrument, it appears likely that NC State will implement the ETS *HElghten* Quantitative Literacy assessment moving forward in the 2017-2018 academic year.

Spring 2016

In spring 2016, NC State participated in a pilot assessment of Quantitative Literacy developed by ETS. This assessment is called the *HElghten*TM Quantitative Literacy Assessment. The skills measured on the *HElghten*TM Quantitative Literacy Assessment map well to NC State's definition of Quantitative Literacy. Pending further development of the instrument by ETS as well as an evaluation of reporting of results (we seek results/data reported in a way that provide our institution with detailed, meaningful information), we will consider adoption of this instrument in place of the ETS PP to measure Quantitative Literacy. We expect to have results of this pilot from ETS early fall 2016.

Fall 2014-Spring 2015

Discussions about the definition and subsequent measurement of this competency resulted in the decision to engage in individual discussions across the disciplines of what quantitative literacy may look like (in its current definition) in courses/course products. Discussion began with faculty members regarding this issue, and resulting discussions stemming from these initial conversations have made the team inclined to attempt to assess this competency at the general education level. While this discussion continues, Quantitative Literacy is currently being measured through the ETS PP, which contains quantitative literacy elements which map well to aspects of the institutional definition of Quantitative Literacy.

Spring 2014

In spring 2014, the assessment team will work in coordination with faculty members of each of the undergraduate colleges at NC State to explore the applicability of the upper-level aspects of the rubric across majors, particularly senior-level work and final projects. The assessment team will work to identify raters who are experts in the competency and begin to plan sampling methods to ensure representation from the colleges and class levels.

Fall 2013

In fall 2013, members of the Office of Assessment staff met with a key member of the Quantitative Literacy Assessment team to discuss results of the rubric analysis. This discussion resulted in the following decisions: 1) moving forward, target better

representation from all colleges 2) request that the rubric be used specifically on final projects in the major (for non-STEM majors in particular) 3) recruit raters who are experts in the competency so that while rating they are not mired in the content.

Spring/Summer 2013

A faculty member from each of these disciplines worked with the raters from the Quantitative Literacy Assessment team, aiding them in applying the rubric to student products for norming purposes. The rubric was tested and normed in late spring 2013, and the team applied the rubric to the course product in late spring/early summer 2013. These data were then given to the Office of Assessment, where they were analyzed.

Summer and Fall 2012

Stage One: The General Education Competencies, including Quantitative Literacy, were defined in summer 2012 at a retreat consisting of faculty members representing different colleges and disciplines at NC State. Faculty from Philosophy, Mathematics, Textiles, and Poultry Science worked together to define Quantitative Literacy. Quantitative Literacy was defined in accordance with the AAC&U definition as, “habit of mind, competency and comfort in working with numerical sets” [[link to definitions](#)]. This group of faculty also created a rubric by modifying the AAC&U rubric for Quantitative Literacy.

Stage Two (Pilot): An expert in Quantitative Literacy from the original group was selected to lead the pilot, and other faculty members with expertise in the area of quantitative literacy were selected to be part of the team. These team members represent different disciplines, including Mathematics, Marine, Earth and Atmospheric Sciences, and Parks, Recreation and Tourism Management. The team identified three student products at the general education level which were used to address several lower-level aspects of the rubric. These course products were drawn from Calculus, Geology and Statistics courses at the lower (general education) level.

Faculty members serving on the Quantitative Literacy team:

Dr. John Griggs, Teaching Associate Professor, Mathematics, Coordinator of Classroom

Instruction

Dr. Emily Mann Peck, Adjunct Professor, Mathematics

Dr. Herle McGowan, Assistant Professor, Statistics

Katherine Ryker, Graduate Teaching Assistant, Marine, Earth and Atmospheric Sciences

Dr. Carrie Thomas, Research Associate Professor, Marine, Earth and Atmospheric Sciences

Dr. Candace Vick, Associate Professor, Parks, Recreation and Tourism Management
