

CASE STUDY

Peerceptiv® – Peer Assessment in the Sciences

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Peerceptiv, a research-validated peer assessment system, was used at Texas A&M in all three semesters of 2016 in ENTO 322 – Insects in Human Society, in an effort to offer more formative assessments. Each session included as many as 200 in-class students and 300 online students from more than 95 different majors.

The principal driver behind Peerceptiv adoption was the ineffectiveness of traditional multiple-choice assessments in prior courses. With their heavy emphasis on rote learning and the rampant cheating that took place as students shared answers online, it was imperative to find a more suitable way to engage students and assess their performance in the course. The objective was to emphasize higher-level engagement, creativity, and development of critical thinking skills.

With Peerceptiv used for eight writing and critical thinking assessments each semester, quizzes were devalued and all exams were eliminated. Peerceptiv assessments accounted for 60% of the overall grade, which were calculated based on writing, review accuracy & helpfulness, and task completion. All assessments were done online and anonymously, and allowed for upload in a wide range of formats. The assignments included a variety of individual written projects, a video-taped debate, and one group project in which approximately 40 groups of 5 students each selected an order of insects and submitted a web-based Wiki page.

Creating the rubrics was a simple task and began with defining performance standards. In this case, four performance levels were chosen: Beginning, Developing, Accomplished, and Exemplary. These were copied and pasted into the rubric editor in Peerceptiv in standards 1, 3, 5 and 7, respectively. Reviewing students naturally interpolated between these rating values. After setup in the initial course, rubrics were copied across semesters from within Peerceptiv's instructor 'My Library' or the Shared Assignment Library.

Criteria	Scales			
	Beginning	Developing	Accomplished	Exemplary
Hypothesis 15%	Does not identifies and addresses question/ interest/main purpose associated or somewhat related to the research/study.	Identifies and addresses question/ interest/main purpose unrelated to the research/study.	Identifies and addresses question/ interest/main purpose somewhat related to the research/study.	Identifies and addresses question/ interest/main purpose directly related to the research/study.

Image 1: Hypothesis rubrics in original tabular format

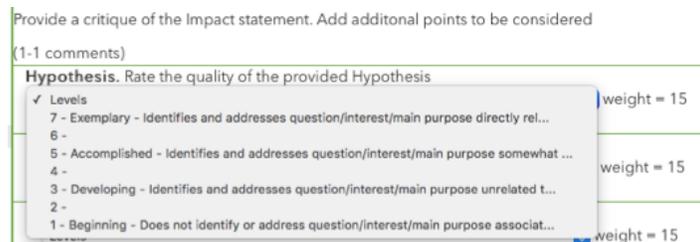


Image 2: Hypothesis rubrics entered into Peerceptiv

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No professor or TA intervention was required in the assessments, although instructors could participate in reviewing selectively if they wished.

The course was configured within eCampus, the Texas A&M Blackboard Learning Management System (LMS). All instructors and students accessed the course from within the LMS, including all document upload and reviewing. The overall assignment grade was automatically entered into the eCampus grade book.

At the completion of the review phase, students could see not just the reviews completed on their submission, but also compare their reviews with the reviews of other students who evaluated that same artifact. This allowed a student to compare the specificity, helpfulness and depth of his analysis with his classmates and, by becoming a better reviewer, develop a better understanding of the material. Students could also view graphically how their numerical ratings compared with the average score on the artifacts reviewed. A close overlay of the reviewer's rating line with the average rating line is an indication of close agreement in scoring, which leads to a higher Accuracy Grade.

Benchmark Grading, a Peerceptiv option offered as an alternative to setting the grade curve and standard deviation, was used for all assignments to provide a more representative grade scale. At the completion of each reviewing phase, the professor is presented with the top 5 and bottom 5 rated peer submissions, and grades those on a 0-100 scale. Peer ratings then determine the grade distribution between instructor set points. No student questioned the grades awarded using Benchmark Grading, and a comparison of the Benchmark Grading graphs between the first and last assignments of the same type, indicated significant performance improvement over the semester.

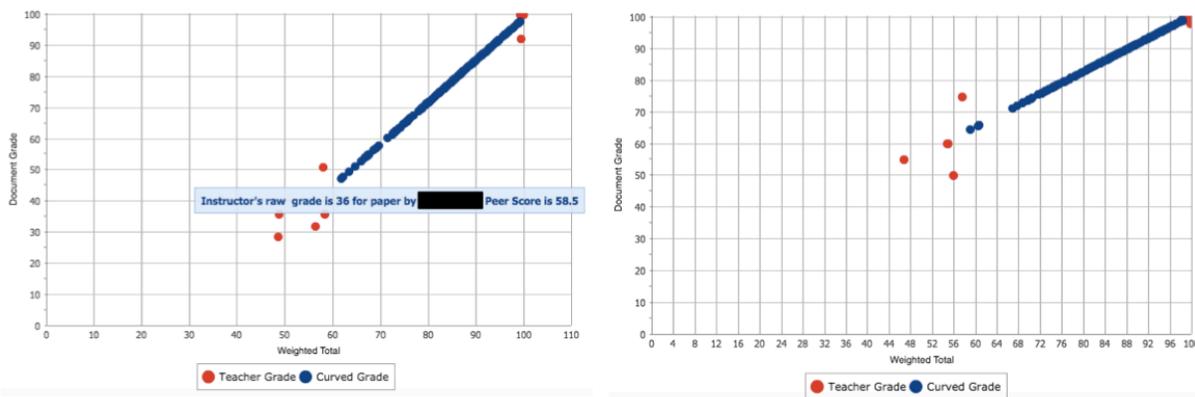


Image 3: Benchmark Grading graphs. A flatter and higher line for the last assignment (on right) compared with first assignment (on left) indicates significant class performance improvement.

Student feedback was consistently favorable. Students commented on the benefits in viewing each other's work products both from a content and creativity perspective. A number of observations spoke to the value in offering more meaningful qualitative assessments instead of multiple-choice exams. One student responded, "I definitely felt engaged to the class and that I took a lot away from it in the end."

In summary, use of Peerceptiv in ENTO 322 was an overwhelmingly positive experience, promoting writing in the discipline despite large class size; building critical thinking skills, and achieving all learning objectives. It was equally effective both in the in person and online sections.