Cluster One uses a nationally available Critical-Thinking Assessment Test (CAT) to evaluate student learning.

The CAT is a 15-item open-ended performance assessment, to which students respond to scenarios and questions about real-world scenarios and graphical information. During February 2014 JMU Assessment Day, 232 Sophomore-Junior students (45-70 credits) completed the CAT.

The CAT is rated by faculty who participate in a day-long train-the-trainer rating session. In addition to information about student learning, the process provides opportunities for faculty members to directly encounter and discuss students' performance on the test.

Critical Thinking Objectives

Evaluate claims in terms of their clarity, credibility, reliability, and accuracy.

Demonstrate the ability to identify, analyze and generate claims, arguments and positions.

Apply these skills to one's own work and the work of others.

Identify and evaluate theses and conclusions, stated and unstated assumptions, and supporting evidence and arguments.
The 15 open-ended CAT questions address skills that can be directly mapped to the Cluster One learning objectives. The above graph portrays JMU students’ percent correct on 14 of the 15 skills, sorted in descending order. For example, students scored highest on the question that asked them to identify relevant information related to a scenario. JMU students also performed well on a basic mathematics problem, situated in a real world context. Students were most challenged by questions requiring them to provide additional necessary information when making a data-based decision and to evaluate correlational data.

Interested in learning more about these competencies? Join us in a CAT rating session.

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1 One item was redundant and not included on the above graph.
Course grades in *Human Communication* ($r = .23$ to $.54$) and *Writing* ($r = .17$) significantly predicted CAT scores.

Do Cluster One course grades relate to students’ CAT scores?

Does the effort students put forth on the CAT relate to their scores on the test? Yes.

Students’ self-reported effort for the A-day testing session significantly correlated with CAT scores ($r = .23$).

**How does JMU compare?**

We might be disappointed that out of a possible 38 points, JMU averaged 18.3 points (48% correct).

Don’t be disheartened. JMU students are performing above national average for their class level.
Students who completed Cluster One requirements outperformed non-completers in two CAT summary skill areas.

Creative Thinking & Effective Communication

How do JMU students perform by skill areas? JMU students’ ratings are reported by skill area, above. Each skill area maps to the JMU Critical Thinking objectives. Note that students attained the most points related to the JMU objective “Evaluate claims in terms of their clarity, credibility, reliability, and accuracy.” Most challenging were the questions related to the JMU objective “Identify and evaluate theses and conclusions, stated and unstated assumptions, and supporting evidence and arguments.”
Ten sophomore-juniors (six females and 4 males) participated in a focus group during spring 2014 Assessment Day. Cluster One courses completed by the students were representative of the breadth of Cluster One courses (GBUS \( n = 2 \); GWRIT \( n = 6 \); GHIST \( n = 2 \); GPHIL Ethical Reasoning \( n = 3 \); GPHIL Logic and Syllogisms; \( n = 1 \); and there was one transfer student). Eight of the ten participants had completed their GCOM course.

The focus groups helped us understand the student experience of taking the test. We were also interested in understanding whether the CAT items aligned well with Cluster One objectives and Cluster One course work. In this sense, the focus groups provided validity evidence for inferences that we draw from the CAT scores.

It took a lot of critical thinking....

It's more stressful than the typical multiple choice (4 out of 6)

I had to think backwards

I had to think harder. It wanted me to reason.

It forced me to think.
How can we best use the CAT findings to promote JMU student critical thinking?

For examples of assignments to promote critical-thinking competencies, contact the Cluster One Coordinator.