Evaluation of Student Learning in the new Core Curriculum

Pilot Project Fall 2017: Critical Thinking and Information Literacy

Submitted by the Core Assessment Team: Debbie Finocchio, Carole Huston, Beth O'Shea

The purpose of this project was to conduct a pilot assessment of student learning in the areas of Critical Thinking and Information Literacy (CTIL) in the new Core Curriculum. To achieve this, a small sample of student assignments was collected from several courses approved for CTIL in the new Core. Student assignments were then scored against a rubric and the summary results are presented here (a full report will be available later).

The main goals of this pilot project were to:

- Establish standard procedures for use during Core assessment (e.g., collecting student assignments, recruiting scorers, testing possible rubrics, etc.), and
- Obtain preliminary data on possible larger trends/results pertaining to the ability of our students to meet desired levels of achievement in CT and IL.

You are receiving this report because suggestions and recommendations from the Core Curriculum Committee (CCC) will inform the design of the full-scale assessment of student learning in CTIL, to be implemented in Fall 2018.

During the CCC meeting on 19 April 2018, the Core Assessment Team (CAT) will present the major findings detailed here and solicit your discussion and feedback. The CCC will then be asked to vote to endorse the recommendations of the CAT listed at the end of this report.

CTIL Goal and Learning Outcomes

In the Area Task Force (ATF) report ratified by faculty vote CTIL has the following goals and outcomes.

CTIL Goal

Students will be able to identify, evaluate, and use information to think critically about issues and claims, including creating an appropriate thesis statement, evaluating evidence, and coming to a conclusion.

CTIL Learning Outcomes

Students will:

1) Support a conclusion or thesis using recognized techniques of argument analysis, argument construction, and the analysis of evidence in a manner appropriate to the relevant discipline of the course.
2) Identify and evaluate appropriate and credible evidence, data, or arguments.
3) Appropriately and ethically acknowledge sources.

Pilot Project Methods

For this pilot project, 55 student essays with identifiers removed were electronically collected from CTIL-approved 200-level courses. These essays were part of the normal course work occurring late in the semester after students had already received feedback on earlier works. Each essay was given a coded file name to ensure student confidentiality.

Volunteer scorers were solicited in late Fall 2018. The seven scorers selected included a diverse group of tenure-line and adjunct faculty across a range of disciplines as well as two librarians.

In January 2018, the seven scorers attended a four-hour norming session to calibrate the scorers to the rubric taken from the CTIL ATF report. Scorers received written and verbal instructions, a copy of the CTIL rubric, a sample scoring sheet, and copies of the assignment prompts from the courses (with course identifiers removed for anonymity). During the initial part of the norming session, scorers realized as a group that the rubric needed some modifying to be usable, and adjustments were made. For examples, the scorers unanimously agreed that Criterion C on the original rubric, "Implements Search Strategies," could not be assessed from the essay assignments alone. This criterion was removed from the original rubric. In addition, some slight rewording of the rubric was done (by the scorers, as a group) in order to clarify certain components. This modified rubric is presented in the Appendices along with the original rubric included in the ATF report. In the end, these four criteria were assessed:

A: Thesis (argument). Comes to an appropriate conclusion or supports a thesis using arguments and evidence. [CTIL LO1]
B: Credibility. Assesses the credibility of claims/arguments/hypotheses. [CTIL LO1]
C: Evaluates Sources. Critically evaluates information sources for relevance to issue, quality, and credibility. [CTIL LO2]
D: Citation Use. Gives credit to the original ideas of others through proper and ethical attribution and citation. [CTIL LO3]

Each essay was read by at least two scorers. Inter-rater reliability was tracked during the scoring process. In cases where scorers differed by two or more points in any of the four criteria, the essay was sent out to a third scorer, and the best pairing between two scorers was used. In the end, each scorer scored a total of 18 – 19 papers.

Findings
Each criterion was scored on a scale of 0-4 with 4 being the highest level of achievement. The mean scores for each criterion are shown in Table 1.

Table 1. Mean score by CTIL criterion.

Criterion	Mean Score (n = 110 reads)
A: Thesis/Argument	2.1
B: Credibility of claims	1.6
C: Evaluates Sources	1.8
D: Citation Use	1.9

The frequency for which students demonstrated scores of 0-4 for each criterion are shown in Figure 1. Given that the rubric used was modified from the AAC&U VALUE Rubrics for Critical Thinking and Information Literacy, and that those rubrics were established for college *graduation* level, the CAT believes these pilot results indicating our students' ability in both CT and IL are in line with expectations for students who are not near graduation, which tends to be the majority of students taking 200-level courses. (Note: 47% of the essays in this pilot project were from first year students.)

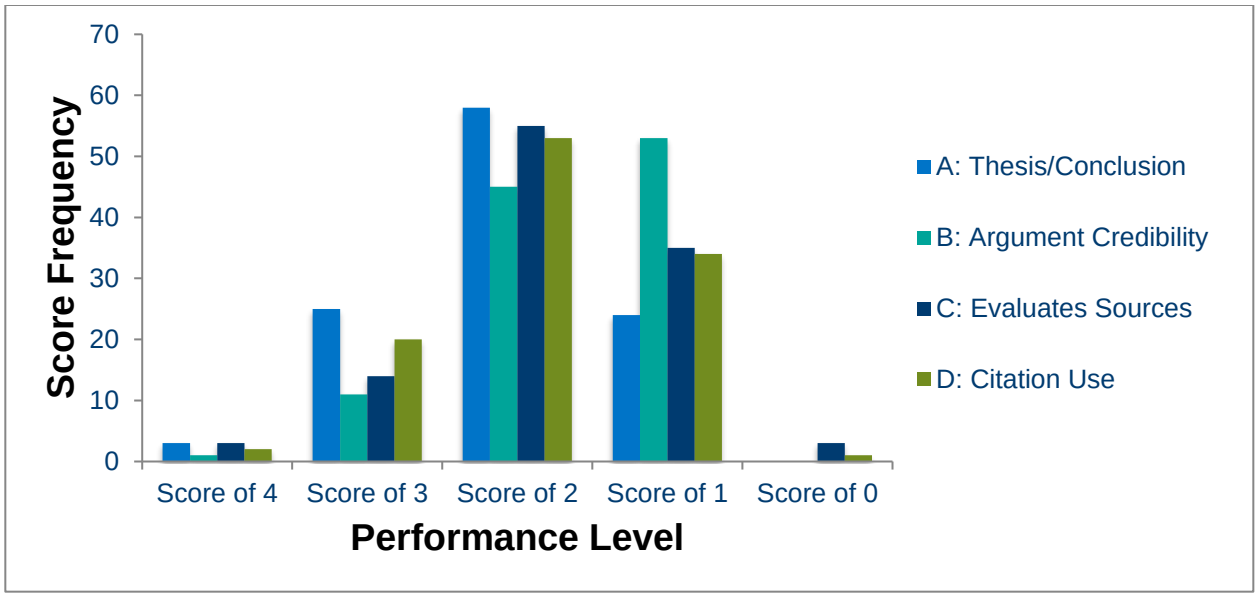

Figure1. Frequency of scores achieved by students across each criterion in the CTIL rubric. Fifty-five student essays, each read by two scorers = 110 reads.

Summary and Recommendations

This pilot project provided important information on the logistics of evaluating student learning in the Core and will inform the CAT's procedures as we move forward to upscale this into a full project evaluating student competency in CTIL in all courses with this core attribute. An important logistical constraint identified by scorers was the need to align the rubric with the CTIL learning outcomes. For reference, some ATF's included an example rubric in their original ATF report, and other ATF reports contain no rubric.

The Core Assessment Team and faculty scorers thus make the following recommendation:

> ***Develop a reliable rubric that aligns with the learning outcomes for each area of the Core.*** *To allow scorers to adequately score student works, and to ensure that rubrics for each Core area align with the learning outcomes proposed by the ATF, the CAT proposes making revisions to rubrics in ATF reports. These revisions will be made in consultation with the Core Area Representative (CAR) and submitted to the CCC for approval. In cases where no rubric exists in the original ATF report the CAT and CAR will work together to produce a suitable rubric for CCC approval. New rubrics will be posted on the CCC website to better assist faculty when making assignment prompts and aligning their courses with the new core curriculum.*

Next Steps

During the course of this pilot project the following questions arose and will be addressed during the full-scale project:

1. Are our students meeting national standards?
2. Are seniors performing better than other students in these courses? Should they be?
3. Should CT and IL be married or should they be taught and assessed independently?
4. Should CTIL be embedded in only one type of course? Or should it be taught across the curriculum?

Appendix A: Rubric From CTIL ATF Report

Given the norms and standards of the discipline, at what level does the work demonstrate that the student:

	1 - Initial	2 - Emerging	3 - Developing	4 - Accomplished
Comes to an appropriate conclusion or supports a thesis using arguments and evidence	Conclusion is inconsistently tied to some of the information discussed, consequences and implications are oversimplified; specific position/thesis/hypothesis is stated but is simplistic and obvious	Conclusion is logically tied to information because information is chosen to fit the desired conclusion; some consequences and implications are identified clearly; specific position/thesis/hypothesis acknowledges different sides of an issue	Conclusion is logically tied to a range of information, including opposing viewpoints; consequences and implications are identified clearly; specific position/thesis/hypothesis takes into account the complexities of an issue	Conclusions and consequences and implications are logical and reflect student's informed evaluation; specific position/thesis/ hypothesis takes into account the complexities of an issue and acknowledges limits
Assesses the credibility of claims/arguments/ hypotheses	Information is taken from sources without any evaluation; viewpoints of experts are taken as fact, without question	Information is taken from sources with some evaluation; viewpoints of experts are taken mostly as fact, with little questioning	Information is taken from sources with enough evaluation to develop a coherent analysis; viewpoints of experts are subject to questioning	Information is taken from sources with enough evaluation to develop a comprehensive analysis; viewpoints of experts are questioned
Plans and implements search strategies that align with information needs	Accesses information randomly, retrieves information that lacks relevance and quality	Accesses information using simple search strategies, retrieves information from limited and similar sources	Accesses information using variety of search strategies and some relevant information sources	Accesses information using effective, well-designed search strategies and appropriate and relevant information sources
Critically evaluates information sources for relevance to issue, quality, and credibility	Chooses a few sources. Uses limited criteria (such as relevance to the research question or problem) to select sources	Chooses a small variety of sources. Uses basic criteria (such as relevance to the research question or problem, currency, primary vs. secondary sources) to select sources	Chooses a variety of sources appropriate to the scope and discipline of the question or problem. Uses a few criteria (such as relevance to the research question or problem, currency, primary vs. secondary sources, authority, audience, and bias/point of view) to select sources	Chooses a variety of sources appropriate to the scope and discipline of the question or problem. Uses multiple criteria (such as relevance to the research question or problem, currency, primary vs. secondary sources, authority, audience, and bias/point of view) to select sources
Gives credit to the original ideas of others through proper and ethical attribution and citation	Infrequently or incorrectly uses citations and references, not generally preserving original integrity of sources; infrequently distinguishes between common knowledge, personal opinion, and ideas requiring attribution	Mostly uses citations and references when necessary, usually preserving original integrity of sources with paraphrasing, summary, and quotation; sometimes distinguishes between common knowledge, personal opinion, and ideas requiring attribution	Usually uses citations and references when necessary, preserving original integrity of sources with paraphrasing, summary, and quotation; sometimes distinguishes between common knowledge, personal opinion, and ideas requiring attribution	Uses citations and references when necessary, preserving original integrity of sources with paraphrasing, summary, and quotation; distinguishes between common knowledge, personal opinion, and ideas requiring attribution

Appendix B: Scorer-Modified Rubric Used for CTIL Pilot Project, Fall 2017

Given the norms and standards of the discipline, at what level does the work demonstrate that the student:

	4 - Accomplished	3 - Developing	2 - Emerging	1 - Initial	0 – Unable to Score
A –Thesis (argument) *Comes to an appropriate conclusion or supports a thesis using arguments and evidence*	Arguments are well constructed and logically support a specific position/thesis/ hypothesis that takes into account the complexities of an issue and acknowledges limits	Arguments are *mostly* well constructed and logically support a specific position/thesis/ hypothesis that *mostly* takes into account the complexities of an issue and acknowledges limits	Arguments are *somewhat* well constructed and logically support a specific position/thesis/hypothesis; information may be chosen to fit the desired conclusion	Arguments are poorly constructed and/or fail to support a specific position/thesis/hypothesis	
B – Credibility *Assesses the credibility of claims/arguments/ hypotheses*	Information is taken from sources with enough evaluation to develop a *comprehensive* analysis; viewpoints of experts are *questioned*	Information is taken from sources with enough evaluation to develop a *coherent* analysis; viewpoints of experts are *subject to questioning*	Information is taken from sources with some evaluation; viewpoints of experts are taken mostly as fact, with little questioning	Information is taken from sources without any evaluation; viewpoints of experts are taken as fact, without question	
C – Evaluates Sources *Critically evaluates information sources for relevance to issue, quality, and credibility*	Identifies and evaluates sources appropriate to the scope and discipline of the question or problem. Uses *multiple* criteria (such as relevance to the research question or problem, currency, primary vs. secondary sources, authority, audience, and bias/point of view) to select sources	Mostly identifies and evaluates sources appropriate to the scope and discipline of the question or problem. Uses *a few* criteria (such as relevance to the research question or problem, currency, primary vs. secondary sources, authority, audience, and bias/point of view) to select sources	Sometimes identifies and evaluates appropriate sources. Uses basic criteria (such as relevance to the research question or problem, currency, primary vs. secondary sources) to select sources	Seldom identifies and evaluates appropriate sources. Uses limited criteria (such as relevance to the research question or problem) to select sources	
D – Citation Use *Gives credit to the original ideas of others through proper and ethical attribution and citation*	Uses citations and references when necessary; sophisticated integration of sources using paraphrasing, summary, and quotation; distinguishes between common knowledge, personal opinion, and ideas requiring attribution	*Mostly* uses citations and references when necessary, effectively integrating sources using paraphrasing, summary, and quotation; *mostly* distinguishes between common knowledge, personal opinion, and ideas requiring attribution	*Sometimes* uses citations and references when necessary, *somewhat* effectively integrating sources using paraphrasing, summary, and quotation; *sometimes* distinguishes between common knowledge, personal opinion, and ideas requiring attribution	*Infrequently* or incorrectly uses citations and references, *ineffectively* integrating sources using paraphrasing, summary, and quotation; *infrequently* distinguishes between common knowledge, personal opinion, and ideas requiring attribution	