Core Assessment Project 2015, Results-Expanded

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The Core Assessment Project (CAP) is a collaborative process among the Core Curriculum Steering Committee, faculty and faculty librarians, and the Office of Assessment to conduct institution-wide assessment of select core skills to see where these skills are occurring naturally in the classroom and to what degree students are performing at various stages of their degree pathway. Results may guide the introduction, reinforcement, mastery, and assessment of the core skills.
How are students performing in core skills?

Sample papers (n=174) of 1,145 total students enrolled drawn from Writing Designated in the Major Courses (total n=36), Spring 2015

The numbers 2-8 represent the sum of scores from 1 to 4 for two faculty raters using holistic rubrics with 4 as the highest score. Rubrics were created, adapted, or adopted by faculty teams.

WHAT WE KNOW
Written Communication is ranked third by employers as a highly valued skill.* Written communication formally assessed since 2006 with sustained funding for faculty development (i.e., Writing Across the Curriculum). Greatest amount of core course requirements ranging from first year to senior year. Of the 50 assignments collected, 46 explicitly called for the use of written communication.

HOW DID STUDENTS DO?
• Scored the highest mean of the four core skills assessed for the CAP (mean=6.01)
• Performed higher than in the last administration conducted in 2010 (mean=5.29, n=126)
• Students with a GPA of 3.0 and above scored higher than those with GPA below 3.0

WHAT WE KNOW
Quantitative Reasoning is ranked ninth by employers as a highly valued skill.* In 2013, the Quantity Across the Curriculum Advisory Group (QuAC) was formed to increase student and faculty engagement with quantitative reasoning. Of the 50 assignments collected, 17 explicitly called for the use of quantitative reasoning. Quantitative reasoning is not required as part of the Writing Designated in the Major final assignment.

HOW DID STUDENTS DO?
• Scored the lowest mean of the four core skills assessed for the CAP (mean=4.02)
• Forty-eight percent (n=61) of students performing at the lower range of the rubric
• Performed lower than in the last administration conducted in 2012 (mean=4.40, n=67)

WHAT WE KNOW
Information Literacy is ranked sixth by employers as a highly valued skill.* Disciplines naturally vary in asking students to demonstrate the required use of information literacy (i.e., APA, MLA, Chicago) making this skill a challenge to assess. Information literacy rubric developed and test piloted in spring 2015. No faculty advisory group exists for information literacy. Of the 50 assignments collected, 38 explicitly called for the use of information literacy.

HOW DID STUDENTS DO?
• Sixty percent (n=104) of students are in the middle range of the rubric
• Twenty-one percent (n=36) are performing at the lowest end of the rubric
• Most agreement in raters assigning the same score for student work

WHAT WE KNOW
Critical Thinking is ranked fourth by employers as a highly valued skill.* While critical thinking is not currently part of the Core Curriculum, the institution is field testing a rubric to align with state and national initiatives. No faculty advisory group exists for critical thinking. Of the 50 assignments collected, 36 explicitly called for the use of critical thinking. Critical thinking is not required as part of the Writing Designated in the Major final assignment.

HOW DID STUDENTS DO?
• Performed the same in Critical Thinking in 2011 (mean=4.66, n=67)
• Fifty-three percent (n=93) of students scored in the middle range of the rubric
• Thirty-one percent (n=54) of students scored in the lower range of the rubric

NOTE: There were no statistically significant differences between 300/400 level courses, juniors/senior status, gender, first generation, low income, race and ethnicity, and transfer status. No benchmarks exist indicating where faculty expect upper level students to perform in a core skill.

+The sample size is smaller for QR due to the two-step selection process of assessment. Papers with no potential to use QR are removed.
OVERALL RESULTS FOR SAMPLE PAPERS FROM WRITING DESIGNATED IN THE MAJOR, SPRING 2015

**Written Communication** - Students will compose effectively in response to an assignment, in voice appropriate for the target audience, effectively narrowing the focus, supporting it with evidence, and organizing the text in such a way as enhances the message.

- **BARTLETT COLLEGE**
  - Mean = 5.96, n = 23

- **COLLEGE OF EDUCATION & ALLIED STUDIES**
  - Mean = 5.23, n = 22

- **COLLEGE OF HUMANITIES & SOCIAL SCIENCES**
  - Mean = 6.26, n = 111

- **LOUIS M. RICCIARDI COLLEGE OF BUSINESS**
  - Mean = 5.44, n = 18

**Quantitative Reasoning** is the degree to which the use/mis-use of QR naturally forwards or fails to forward an argument. In high-scoring papers, QR enhances the argument or effectiveness of the paper. In low-scoring papers, the ineffectiveness or absence of QR weakens the paper.

- **BARTLETT COLLEGE**
  - Mean = 4.05, n = 22

- **COLLEGE OF EDUCATION & ALLIED STUDIES**
  - Mean = 3.47, n = 19

- **COLLEGE OF HUMANITIES & SOCIAL SCIENCES**
  - Mean = 4.24, n = 70

- **LOUIS M. RICCIARDI COLLEGE OF BUSINESS**
  - Mean = 3.67, n = 18

**Quantitative Reasoning**

<table>
<thead>
<tr>
<th>Skill</th>
<th>Mean</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Communication</td>
<td>6.01</td>
<td>174</td>
</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>4.02</td>
<td>129</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>4.67</td>
<td>174</td>
</tr>
<tr>
<td>Information Literacy</td>
<td>4.51</td>
<td>174</td>
</tr>
</tbody>
</table>

**Overall Results**

The sample size is smaller for Quantitative Reasoning due to the two-step process of assessment. Papers with no potential to use QR are removed and not scored.

**NOTE:** The numbers 2-8 represent the summed final score from two faculty scores on a scale of 1-4 (see Rubrics in Appendices) with 8 as the highest score.
OVERALL RESULTS FOR SAMPLE PAPERS
FROM WRITING DESIGNATED IN THE MAJOR, SPRING 2015

WRITTEN COMMUNICATION
Mean = 6.01, n = 174

QUANTITATIVE REASONING
Mean = 4.02, n = 129

CRITICAL THINKING
Mean = 4.67, n = 174

INFORMATION LITERACY
Mean = 4.51, n = 174

NOTE: The numbers 2-8 represent the summed final score from two faculty scores on a scale of 1-4 (see Rubrics in Appendices) with 8 as the highest score.

Critical Thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion (AAC&U Critical Thinking LEAP VALUE Rubric).

Information Literacy is a set of skills that enables individuals with the ability to search for, locate, and evaluate information resources in order to support arguments, communicate effectively, and make evidence-based decisions (italics indicates the focus of the CAP assessment).

NOTE: Critical thinking, while not identified as a BSU core skill, is undergoing its second pilot.

Information literacy is a BSU core skill. A holistic rubric for information literacy was piloted tested as part of CAP 2015.
CORE ASSESSMENT PROJECT DESIGN AND DATA COLLECTION

The purpose of the Core Assessment Project (CAP) is to advance BSU’s systematic and sustainable model of institutional assessment. The Bridgewater Assessment Method (BAM) uses one set of student papers for assessment of multiple skills using holistic rubrics in a one-day scoring session, except for quantitative reasoning which requires an additional day due to the two-part nature of the rubric.

TARGETED SKILLS
- Written Communication
- Quantitative Reasoning
- Critical Thinking (2nd pilot)
- Information Literacy (pilot)

SAMPLE
- Writing Designated in the Major Courses (CWRM) in Spring 2015
- Stratified random sample
- 34 CWRM courses represented
- 21 Undergraduate departments submitted products
- 174 samples of 1,145 possible students
- 50 assignments prompts

METODOLOGY
- Holistic rubrics
- Faculty team leader for each skill
- Cross-disciplinary scoring teams
- One-day norming and scoring
- Final score is sum of two scorers
- Online scoring system

ANALYSES
- Significance testing
- Trend analysis
- Faculty feedback

TARGETED SKILLS
In fall 2015, the Core Curriculum Steering Committee approved the Office of Assessment to oversee the assessment of critical thinking (2nd pilot), quantitative reasoning, and written communication. Information literacy was piloted in the 2015 administration.

SAMPLE
A stratified random sample of student papers (n=276) was collected from the Writing Designated in the Major (CWRM) spring 2015 courses (n=34) from a total population of n=1,145 possible students. All Studio Arts (ARTS404) sections with six or fewer students were combined and treated as one section for sampling purposes. Spanish Composition (LASP300) and Seminar in Dance Education (DANC494) were excluded along with group papers for a total of 174 usable samples. Papers were scrubbed of all identifying components (name of student, professor, section, course, client, and any other identifying properties). Course assignments (n=50) were also collected and scrubbed of all identifying components. Team leaders reviewed assignments for the explicit call for the use of the skill area in the paper and noted any model assignments.

METHODOLOGY
Scoring Instrumentation: Holistic rubrics were adapted from the AAC&U VALUE rubrics for critical thinking and information literacy. Carlton College’s Quantitative Inquiry Reasoning and Knowledge (QuIRK) rubric was used for Quantitative Reasoning. The CONNECT rubric was adapted for written communication assessment. Scoring was completed electronically using Qualtrics.

Team Leaders and Scorers: Four team leaders facilitated the norming and scoring sessions for each team (i.e., critical thinking, information literacy, quantitative reasoning, and written communication). Cross-disciplinary scoring teams totalling 53 faculty and 6 administrators participated in a full-day scoring session and a prior Quantitative Reasoning initial scoring session. Faculty and staff scorers were assigned to a core skill group totaling 14 scorers (7 pairs) each for critical thinking, information literacy, and written communication and 10 scorers (5 pairs) for quantitative reasoning.

Inter-rater reliability: If scoring teams differed by more than one point, they conferred to come to within one point, then entered scores into Qualtrics. Team leaders ran an initial training session with sample papers, and were available throughout the actual scoring for any questions or difficulties that arose.

ANALYSIS
Faculty input on preliminary drafts of the CAP results were provided by the CAP faculty team leaders (see above), members of the Core Curriculum Steering Committee, the Academic Affairs Assessment Council, the Writing Across the Curriculum Advisory Committee (WAC), and the Quantity Across the Curriculum (QuAC) Advisory Committee along with faculty feedback at the December 2015 and January 2016 Teaching and Learning Professional Development Days. Statistical significance tests and trend analyses were used to identify any notable differences (i.e., differences for gender, part-time or full-time status, GPA, low income, first generation, and transfer status).
**BSU WRITTEN COMMUNICATION RUBRIC**

**Definition:** Students will compose effectively in response to an assignment, in voice appropriate for the target audience, effectively narrowing the focus, supporting it with evidence, and organizing the text in such a way as enhances the message.

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<th>3</th>
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<tr>
<td>Writing is fully responsive to the specific demands &amp; rhetorical situation of the assignment &amp; demonstrates appropriate content-area knowledge. Voice and vocabulary are effective and appropriate for the purpose and the audience. Thesis or focus is clear, appropriate for the length of the text, responsive to the assignment, thought-provoking, &amp; supported by evidence where appropriate. The writing's structure is effective, organized in a manner than enhances the message, and makes good use of visual signposting to guide the reader, having an introductory element, a body which supports the central point, and concluding section. Some sentences may have minor structural difficulties which do not distract from the meaning of the text.</td>
<td>Writing is generally responsive to the specific demands and the rhetorical situation of the assignment and demonstrates generally appropriate content-area knowledge. Voice and vocabulary are generally effective and appropriate for the purpose and the audience. Thesis or focus is generally clear, appropriate for the length of the assignment, and supported by evidence where appropriate. The writing's structure is generally effective, organized in a manner appropriate to the writer's message, and makes some use of visual signposting where appropriate, with an identifiable introductory element, a supportive body and a concluding element. Some sentences may demonstrate structural difficulty, but this does not distract from the meaning of the text.</td>
<td>Writing is somewhat responsive to the specific demands and the rhetorical situation of the assignment but occasionally fails to demonstrate appropriate content knowledge. Voice and vocabulary are not always functional and appropriate for the audience. Thesis or focus is present but may be too broad or too narrow for the length of the text, or there is insufficient evidence, or the evidence is not specific. The writing's structure is somewhat effective in relaying the writer's message, having a sketchy introduction, body and conclusion; somewhat orderly paragraphs, and some use of visual signposting to provide some sense of beginning, middle, and end. Sentence structure problems may sometimes obscure the meaning of the text.</td>
<td>Writing fails to respond to the demands and the rhetorical situation of the assignment and/or demonstrates a lack of awareness of appropriate content-area knowledge. The voice and vocabulary demonstrate a lack of awareness of audience and/or purpose. Writing exhibits no central idea, or shows a disconnect between central idea and supporting evidence. The writing's structure distracts from the writer's message, in that the introduction, body and/or conclusion may be poorly focused or non-existent; or ideas may be arranged illogically. Structural difficulties in sentences obscure the meaning of the text in several places.</td>
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*The BSU Written Communication Rubric was developed and field tested starting in 2006 with minor revisions in 2015.*
## BSU Quantitative Reasoning Rubrics*

### Rubric for Potential Relevancy to Quantitative Reasoning

<table>
<thead>
<tr>
<th>Central</th>
<th>Peripheral</th>
<th>None Or Incidental</th>
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<tbody>
<tr>
<td>Potential uses of numbers to address a central question, issue, or theme.</td>
<td>Potential uses of numbers to provide useful detail, enrich descriptions, present background, or establish frames of reference.</td>
<td>No potential uses of numbers or miscellaneous uses only.</td>
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### Rubric for Extent of Quantitative Reasoning in the Paper

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<tr>
<td>Explicit numerical evidence or quantitative reasoning is used throughout the paper.</td>
<td>One or two instances of explicit numerical evidence or quantitative reasoning (perhaps in the introduction to set the context), but no more.</td>
<td>No explicit numerical evidence or quantitative reasoning. May include quasi-numerical (e.g., “many,” “few,” “most,” “increased,” “fell,” etc.).</td>
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### Rubric for Quality of Use for Those Papers with Central Relevance

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<tr>
<td>The use of numerical evidence is consistently of the highest quality. When appropriate, source credibility is fully explored and methods are completely explained. Interpretation of the numerical evidence is complete, considering all available information. There are no errors such as confusion of correlation and causation. This paper would be an excellent choice as an example of effective central QR to be shared with students and faculty.</td>
<td>The use of numerical evidence is good throughout the argument. Only occasionally (and never in a manner that substantially undermines the credibility of the argument) does the paper fail to explore source credibility or explain methods when needed. While there may be small, nuanced errors in the interpretation, the use of numerical evidence is generally sound. However, the paper may not explore all possible aspects of that evidence.</td>
<td>The use of numerical evidence is sufficient to allow the reader to follow the argument. But there may be times when information is missing or misused. Perhaps the use of numerical evidence itself is uneven. Or the data are presented effectively, but a lack of discussion of source credibility or methods makes a full evaluation of the argument impossible. Misinterpretations such as the confusion of correlation and causation may appear, but not in a way that fundamentally undermines the entire argument.</td>
<td>Use of numerical evidence is so poor that either it is impossible to evaluate the argument with the information presented or the argument is clearly fallacious. Perhaps key aspects of data collection methods are missing or critical aspects of data source credibility are left unexplored. The argument may exhibit glaring misinterpretation (for instance, deep confusion of correlation and causation). Numbers may be presented, but are not woven into the argument.</td>
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### Rubric for Quality of Use for Those Papers with Peripheral Relevance

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<tr>
<td>Throughout the paper, numerical evidence is used to frame the argument in an insightful and effective way. When needed, comparisons are provided to put numbers in context. This paper would be an excellent choice as an example of effective peripheral QR to be shared with students and faculty.</td>
<td>The paper consistently provides numerical evidence to contextualize the argument when appropriate. Moreover, numbers are presented with comparisons (when needed) to give them meaning. However, there may be times when a better number could have been chosen or more could have been done with a given figure. In total, the peripheral use of QR effectively frames or motivates the argument.</td>
<td>Uses numerical evidence to provide context in some places, but not in others. The missing context weakens the overall paper. Or the paper may consistently provide data to frame the argument, but fail to put that data in context by citing other numbers for comparison. Ultimately, the attempt at peripheral use of QR does not achieve its goal.</td>
<td>Fails to use any explicit numerical evidence to provide context. The paper is weaker as a result. This paper shows no attempt to employ peripheral QR.</td>
</tr>
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*BSU uses the Carleton College Quantitative Inquiry Reasoning and Knowledge (QuIRK) model to assess Quantitative Reasoning.*

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2015 Core Assessment Project Results

... 7 ...

How are BSU students performing in core skills?
BSU INFORMATION LITERACY RUBRIC (PILOT)*

Information Literacy is a set of skills that enables individuals with the ability to search for, locate, and evaluate information resources in order to support arguments, communicate effectively, and make evidence-based decisions (italics indicates the focus of the CAP assessment).

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<td></td>
<td>Consistently uses a variety of credible resources to support each claim; synthesizes and organizes ideas into a convincing and coherent whole incorporating writer's own ideas as well as articulating competing theories; in-text and end citations are properly used and formatted; supplemental data are all consistently identified.</td>
<td>Uses a range of credible resources to support claims; acknowledges differing viewpoints or competing theories; effort is made to paraphrase rather than quote; cites and presents sources most of the time; in-text and end citations show few errors; supplemental data are mostly identified.</td>
<td>Uses limited or inappropriate resources to support claims; analysis is superficial; citations are mostly incomplete, missing, do not follow expected format, or do not refer to anything within the text; quotations are overused; efforts towards in-text and end citations are present with some errors or inconsistencies; supplemental data are not identified.</td>
<td>Informational sources are not credible, do not serve the intended purpose, or are not used; no distinction between fact and opinion; information may not be analyzed or is misrepresented; citations are missing; paper is (or parts of it) may be plagiarized.</td>
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<tr>
<td></td>
<td>Paper is not impeded at all by missing citations or data (close to 100% accuracy) and would be an excellent example to share with faculty and students.</td>
<td>Use and analysis of information resources are strong throughout the paper, but may miss some aspects of information.</td>
<td>Paper is impeded at least 50% of the time by missing data and/or inappropriate use of citations.</td>
<td>Lack of citations or data severely impedes paper and/or missed opportunities to incorporate sources to strengthen argument.</td>
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*Parts of this rubric were adapted from a modified version of the Association of American Colleges and Universities (AAC&U) LEAP Information Literacy VALUE rubric, the Mount Wachusett Community College and Fitchburg State Quality Collaborative rubric for Information Literacy, and the Carleton College’s QuIRK framework. Reference to the new ACRL Information Literacy Framework was also included in this adaption of the CAP assessment.
**BSU CRITICAL THINKING RUBRIC (2ND PILOT)**

**Definition:** Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion (AAC&U Critical Thinking LEAP VALUE Rubric).

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<tr>
<td><strong>Issue/problem to be considered critically is clearly stated, described, and clarified so that understanding is not impeded by omissions. Information from source(s) is taken with enough interpretation/evaluation to develop a thorough and coherent analysis or synthesis of the source material. Viewpoints of experts are subject to questioning. Student's own and others' assumptions are analyzed, and the relevance of contexts when presenting this position is addressed to a large extent. The specific position (perspective, thesis/hypothesis) takes into account all or most of the complexities of an issue. The limits of this position are acknowledged. Others' points of view are synthesized within the position. Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in a logical order of priority.</strong></td>
<td><strong>Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions. Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis of the source material. Viewpoints of experts are subject to some questioning. Student's and others' assumptions are identified, as well as several relevant contexts when presenting this position. The specific position (perspective, thesis/hypothesis) takes into account many of the complexities of an issue. The limits of this position are not acknowledged. Others' points of view are acknowledged within this position. Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.</strong></td>
<td><strong>Issue/problem to be considered critically is stated, but the description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown. Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis of the source material. Viewpoints of experts are taken as mostly fact, with little questioning. Some assumptions may be questioned; student may be more aware of others' assumptions than her/his own (or vice versa). One or two contexts relevant when presenting this position are identified. The specific position (perspective, thesis/hypothesis) acknowledges that there are different sides of an issue. Conclusion is logically tied to information because the information is chosen to fit the desired conclusion; some related outcomes (consequences and implications) are identified.</strong></td>
<td><strong>Issue/problem to be considered critically is not stated with clarification or description. Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question. An emerging awareness of present assumptions is shown; sometimes assertions are labeled as assumptions. Begins to identify some contexts when presenting a position. The specific position (perspective, thesis/hypothesis) is stated, but is simplistic and obvious or is treated as obvious by the student. Conclusion is inconsistently tied to only some of the information discussed or is not logically tied to any of the information; related outcomes (consequences and implications) are oversimplified.</strong></td>
</tr>
</tbody>
</table>

*BSU uses a holistic version of the Association of American Colleges and Universities (AAC&U) Critical Thinking LEAP VALUE Rubric.*