Texas A&M University Core Curriculum
Empirical & Quantitative Skills Analytical Rubric

Definition

The Texas Higher Education Coordinating Board states that the Texas Core Curriculum objective of Empirical & Quantitative Skills is "to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions."[1] Further, the American Association of Colleges & Universities (AAC&U) notes that quantitative literacy "is not just computation" and includes "a way of thinking about the world that relies on data and on the mathematical analysis of data to make connections and draw conclusions."[2]

Framing Language

This rubric is designed to be applied to student-produced work (artifacts), from a range of disciplines and a variety of genres. Ideally, the artifact assessed with this rubric will be produced by an individual student; however, this rubric may also be applied to group projects.

Glossary

The following definitions clarify terms and concepts used in this rubric only.

Analysis: Detailed and careful examination in order to understand, explain, or critique. This process often involves breaking the subject matter into parts to better understand the whole. This rubric assesses the products of analysis rather than the process itself.
Conclusions: Synthesis of key findings drawn from research, evidence, and/or analysis.[3]
Methods: Theories/principles underlying design, subjects, instruments, data collection, and analyses. Scorers only apply this rubric category when the student generates their own data set; otherwise, no score (as opposed to zero) is recorded.

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[1] 19 Tex. Admin. Code §4.28 (2021).
[2] American Association of Colleges & Universities. (2009). *Quantitative literacy VALUE rubric*. https://www.aacu.org/initiatives/value-initiative/value-rubrics/value-rubrics-quantitative-literacy
[3] American Association of Colleges & Universities. (2009). *Inquiry and analysis VALUE rubric*. https://www.aacu.org/initiatives/value-initiative/value-rubrics/value-rubrics-inquiry-and-analysis

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	Advanced 8	7	Competent 6	5	Developing 4	3	Beginner 2	1	Not Present 0
Presentation of Numerical Data/ Observable Facts	Synthesizes numerical data/observable facts with the specific problem/topic being investigated. Results are presented in a concise and efficient manner demonstrating a deep understanding of the problem/topic as a result of the data.		Connections between numerical data/observable facts to the problem/topic being investigated are explicit and appropriate. Results are organized and demonstrate a data-informed understanding of the problem/topic.		Connections between numerical data/observable facts to the problem/topic being investigated may be implicit. Results are loosely organized and demonstrate a simplistic understanding of the problem/topic.		Limited or ineffectual presentation of sufficient data/observable facts in order to make a connection to the problem/topic.		No results presented.
Analysis/Conclusions	Draws meaningful, independent *conclusions* based on numerical data/observable facts. *Conclusions* demonstrate a sophisticated understanding of the problem/topic.		Draws appropriate, independent *conclusions* based on numerical data/observable facts. *Conclusions* demonstrate a sufficient understanding of the problem/topic.		Presents independent *conclusions* based on numerical data/observable facts. *Conclusions* demonstrate a surface-level understanding of the problem/topic.		Presents limited or weak *conclusions* based on numerical data/observable facts. *Conclusions* may include obvious judgements about the problem/topic rather than drawing independent *conclusions*.		No attempt to draw *conclusions*.
Methods (This category is only applied when the student generates their own data set.)	*Methods* (theories/principles underlying design, subjects, instruments, data collection, and analyses) are formed from a theoretical framework and are organized and described with sufficient clarity.		*Methods* (design, subjects, instruments, data collection, and analyses) are organized and described with sufficient clarity.		*Methods* (design, subjects, instruments, data collection, and analyses) are organized.		Missing or loosely organized *methods* used to describe research design, subjects, instruments, data collection, and analyses.		No *methods* presented.

Italicized words appear in the glossary.