



Higher Education
Quality Council
of Ontario

An agency of the Government of Ontario

Measuring Critical-thinking skills of Postsecondary Students Appendix

Ross Finnie, Michael Dubois, Dejan Pavlic,
Eda Suleymanoglu (Bozkurt)



Published by

The Higher Education Quality Council of Ontario

1 Yonge Street, Suite 2402
Toronto, ON Canada, M5E 1E5

Phone: (416) 212-3893
Fax: (416) 212-3899
Web: www.heqco.ca
E-mail: info@heqco.ca

Cite this publication in the following format:

Finnie, R., Dubois, M., Pavlic, D. & Suleymanoglu (Bozkurt), E. (2018). *Measuring Critical-thinking Skills of Postsecondary Students Appendix*. Toronto: Higher Education Quality Council of Ontario.



The opinions expressed in this research document are those of the authors and do not necessarily represent the views or official policies of the Higher Education Quality Council of Ontario or other agencies or organizations that may have provided support, financial or otherwise, for this project. © Queens Printer for Ontario, 2018

Appendix A: HElften Critical Thinking Assessment

Appendix A.1 – HElften Sample Questions

Sample 1:

In a benefit concert, seven solo performers—Harris, Jones, McIntyre, Nelson, Strapp, Trevino, and Williams—will each sing once only and one after another. The order in which the performers will sing is governed by the following conditions:

- Harris must sing at some time before McIntyre sings.
- Strapp must sing at some time before Jones sings.
- Trevino must sing either immediately before or immediately after Nelson sings.
- Williams must sing third.

Question 1: If McIntyre is to sing immediately before Strapp sings, Trevino can sing

- (A) Second
(B) Fourth
(C) Sixth
(D) Seventh

Sample 2:

Questions 2 - 3 are based on the material below (i.e., list of 11 facts and argument 1 and 2).

Facts List:

1. Records indicate that William Shakespeare was baptized on April 26, 1564, and buried April 25, 1616, in Stratford-upon-Avon, England.
2. There is no evidence that William Shakespeare attended school, but had he done so, it would have been the local grammar school, and he would have left by age 14.
3. Documents show that by the early 1590s William Shakespeare was a managing partner of the Lord Chamberlain's Men, an acting company in London that built the Globe Theatre.
4. A total of 37 plays list Shakespeare as the author, including 13 that are set in Italy and several that make references to London politics.
5. There is no evidence that Shakespeare traveled outside of England.
6. In writings by others during Shakespeare's lifetime, Shakespeare was often referred to as a writer.
7. There is no manuscript of any play in William Shakespeare's own handwriting; only print versions of his plays exist.

8. No one questioned Shakespeare's authorship of the plays attributed to him during his lifetime or for centuries after his death.
9. Christopher Marlowe (1564–1593) was a brilliant poet and dramatist, educated at Cambridge University, who pioneered blank verse (unrhymed lines, almost always in the pattern of stressed syllables called "iambic pentameter") for dramatic plays.
10. Blank verse praised for its beauty appears frequently in the works attributed to Shakespeare.
11. Edward de Vere, 17th Earl of Oxford (1550–1604), whose aristocratic crest of arms depicted a lion shaking a spear, was trained in law, was a court poet, and visited Italy extensively.

Argument 1: (an abstract of an academic paper in a literary journal)

Abstract: "William Shakespeare of Stratford Could Not Have Written the So-called Shakespearean Plays"

We all know that there was a real person named William Shakespeare, who was born in Stratford in 1564, the son of a middle-class glove-maker, and who died in 1616. He was also a well-known actor and managing partner of an acting company in London in the 1590s. Beyond that, there is not a shred of evidence linking him to the 37 plays ascribed to him. How could an uneducated actor from Stratford have such intimate knowledge of court politics, legal matters, royalty, and Italy (the setting of 13 plays including Othello, Merchant of Venice, and All's Well That Ends Well)? Clearly, the plays reflect a sophisticated intellect, a familiarity with London politics, and a deep understanding of Latin and Greek literature—all improbable for a mere actor who grew up in Stratford and who had at best a grammar-school education. Either Edward de Vere (who is known to have visited Italy and was a court favorite) or Christopher Marlowe (who was college educated and the pioneer of blank verse for dramatic plays) was the real author of these brilliant and nuanced plays.

Argument 2: The argument below is a rebuttal in the form of a letter to the editor, published in a subsequent issue of the journal that published Argument 1 above.

It is ludicrous to question Shakespeare's authorship of the plays. The argument presented in this journal smacks of elitism. Other arguments for that position rely on conspiracy theory and convoluted logic. There is a historical record of such a man who was connected to London theater and whose name was given as the author of the plays. No one questioned Shakespeare's authorship until hundreds of years after his death. Those who put forward names of the "real" author—over 60 such names have been suggested—have their own agendas, including the elitism already mentioned, or a preference for a particular alternative author. Circumstantial evidence or outrageous ideas such as that Marlowe faked his own death in 1593 and authored some of the plays afterward, or that the real author, for whatever reasons, wanted to keep his own identity hidden, are flimsy and do not hold up under serious scrutiny.

Q 2: Given the information in the facts list, someone wishing to establish that Marlowe is most likely the author of the plays attributed to Shakespeare would be aided in that task if which of the following were found and determined to be authentic? Select all that apply.

- Comparisons of Marlowe's plays with Shakespeare's plays that show strong linguistic parallels and similar range of vocabulary
- Journal entries in Marlowe's handwriting that note plot elements of a Shakespearean play prior to its being performed
- Historical events that continue into the 1600s and parallel key plot elements in the plays

Q 3: From the following facts excerpted from the list, select the two that together most help to support a claim central to Argument 1.

- 2. There is no evidence that William Shakespeare attended school, but had he done so, it would have been the local grammar school, and he would have left by age 14.
- 4. A total of 37 plays list Shakespeare as the author, including 13 that are set in Italy and several that make references to London politics.
- 5. There is no evidence that Shakespeare traveled outside of England.
- 7. There is no manuscript of any play in William Shakespeare's own handwriting; only print versions of his plays exist.
- 9. Christopher Marlowe (1564–1593) was a brilliant poet and dramatist, educated at Cambridge University, who pioneered blank verse (unrhymed lines, almost always in the pattern of stressed syllables called "iambic pentameter") for dramatic plays.

For more sample questions, consult ETS's website or visit <https://www.ets.org/s/heighten/pdf/critical-thinking-sample-questions.pdf>

Appendix A.2 - HElften Performance Level Descriptions

Advanced (173–180 points)

A typical student at the advanced level has demonstrated the ability to:

- Extrapolate implications from multiple pieces of information and argumentation.
- Accurately recognize descriptions of the logic of complexly structured arguments.
- Employ multistep reasoning to identify hidden assumptions.
- Employ multistep reasoning to identify evidence that directly or indirectly supports or undermines a claim, or specify additional information needed in order to resolve a point.
- Identify subtle appeals to emotion and revisions to an argument that would reduce such appeals.
- Distinguish information that may be peripherally or generally relevant to assertions/arguments from information that is directly on-point.
- Employ multistep reasoning to distinguish causation from correlation, and identify possible alternative causes or explanations.
- Engage in reasoning that involves complex interactions among multiple claims, arguments or pieces of information.
- Identify abstract concepts or principles that are implicitly instantiated in an argument.
- Identify the most accurate among competing descriptions of the logical relationships between assertions/arguments and supporting (or irrelevant or undermining) information, even when the required distinctions are subtle or complex.

Proficient (162–172 points)

A typical student at the proficient level has demonstrated the ability to:

- Make inferential connections between points whose relationship is not explicitly given.
- Follow the logic of an argument whose structure is not fully explicit.
- Identify implicit assumptions.
- Identify evidence that directly or indirectly supports or undermines a claim or specify additional information needed in order to resolve a point.
- Identify appeals to emotion and revisions to an argument that would reduce such appeals.
- Distinguish information that is relevant to assertions or arguments from irrelevant information.
- Distinguish causation from correlation, and identify possible alternative causes or explanations.
- Engage in reasoning that involves interactions among multiple claims, arguments or pieces of information.

- Identify abstract concepts or principles that are instantiated in an argument.
- Identify the most accurate among competing descriptions of the logical relationships between assertions/arguments and supporting (or irrelevant or undermining) information.

Developing (150–161 points)

A typical student at the developing level may sometimes:

- Make inferential connections between two explicitly related points.
- Follow the logic of an explicitly structured argument.
- Identify explicit assumptions.
- Identify evidence that directly supports or undermines a claim.
- Identify clear appeals to emotion.
- Mistake evidence that is broadly related to a topic for evidence that is relevant to a specific assertion about the topic.
- Have difficulty distinguishing causation from correlation or identifying alternative explanations.
- Have difficulty understanding or evaluating interactions among multiple claims, arguments or pieces of evidence.
- Have difficulty reasoning about abstract concepts or principles.
- Have difficulty identifying the most accurate among competing descriptions of the logical relationships between assertions/arguments and supporting (or irrelevant or undermining) information.

Source: <https://www.ets.org/s/heighthen/pdf/critical-thinking-performance-level-descriptions.pdf>



Higher Education
Quality Council
of Ontario

An agency of the Government of Ontario