

REVISING INVESTIGATION WRITING – APPLYING BHP CONCEPTS

Purpose

By now, you and your students should be very familiar with these Investigation writing activities. The point of these continues to be to consistently and carefully work on particular elements of writing with your students so that they improve throughout the year. BHP research has shown that students dramatically improve their writing in the first half of the course, but then their progress tends to stagnate to some degree. These activities should help prevent any of your students from plateauing in their writing improvement.

Practices

Reading, claim testing

By now, your students should be familiar with connecting reading and writing as part of these Investigation writing activities. Note that claim testing is mentioned as part of the student essay that is being analyzed. If time allows, discuss the ways in which claim testing was used in the context of this essay, pointing out the connections between how claims and theories are supported.

Process

Tell your students that this is another activity where they will read some student writing, and then analyze and revise it to make sure that the writer is applying BHP concepts in the best ways possible.

Review the elements in the BHP Writing Rubric that are evaluated for Applying BHP Concepts (the rubric is included at the end of this document). To be considered “Advanced” at applying BHP concepts effectively, students should:

- Connect at least two BHP concepts to the argument and/or evidence.
- Avoid misconceptions of the concepts.
- Make no errors of fact when using BHP concepts.
- Draw on knowledge within the Investigation or unit and perhaps include knowledge beyond or outside the Investigation or unit.
- Demonstrate a clear understanding of the topic and the concepts.

Have students review the essay, first highlighting the major claim or thesis. Then, have them underline anywhere BHP concepts were mentioned. From there, they should pick two sentences/areas where they believe the writing could be improved in relation to the use of BHP concepts, and then have them revise that writing. Finally, they should provide the writer with two general comments/suggestions about how the writer could improve upon the essay more generally. You might suggest to students that they focus on other areas of the BHP Writing Rubric that you’ve examined in detail in other lessons, or other areas of writing that you’ve been working on as a class.

After students have finished this work, have a discussion about what they found. Remind them that Investigation 6 is up next, and that this is often used as a midterm assessment. (Note that it’s definitely used by BHP for research—we use it to figure out how to improve student writing.) Of course, students should take all Investigation writing seriously. They should think hard about all they’ve learned about constructing arguments, using evidence to support those arguments, and applying BHP concepts, and make sure to apply what they know in the Unit 6 Investigation essay.

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Directions:

1. Read the essay and highlight the major claim/thesis in the article.
2. Underline anywhere BHP concepts were applied.
3. Pick two sentences that you can improve upon, and label one with the number 1, and the other with the number 2.
4. In the space provided below, rewrite the sentences you chose, correcting anything need in relation to the application of that BHP concept. Make sure you demonstrate an understanding of the concept, that it's connected to the major claim/thesis in the essay, and that you make no errors of fact.
5. Provide two suggestions to the writer about how to improve upon the essay more generally. You might concentrate on Claim and Focus, Analysis and Evidence, Organization, or something else that is an important element of writing that you have discussed with your class or teacher.

Rewritten Sentence #1: **Sample answer: Theories should be easily claim tested – they should provide sufficient evidence, demonstrate proper authority, be logical, and when possible, intuitively make sense.**

Rewritten Sentence #2: **Sample answer: Humans' ability to collectively learn by preserving information, sharing it with one another, and passing it on to the next generation allows this species to build and improve upon the knowledge of their predecessors.**

Suggestions for Improvement

1. **Sample answer: The essay is obviously referring to some of the texts from the Investigation Library, but doesn't cite any of them properly. The author should properly cite the evidence used in the essay (see the BHP Writing Rubric, Analysis and Evidence).**
2. **Sample answer: The BHP concepts used throughout could be explained more thoroughly. They are mentioned in the essay, but rarely explained.**

Note: *This student essay was written in response to the Unit 5 Investigation question, "How and why do theories evolve?" There were nine documents provided in the Investigation Library.*

Plato, Darwin, and Bacon, all thinkers made great by their ability to seek and describe patterns. Francis Bacon even created the scientific method to which we subscribe today: hypothesize, observe, and synthesize. Human brains are programmed to unearth and construct patterns. In an attempt to make sense of the mystifying world around us, philosophers, biologists, sociologists, chemists, etc. discover and establish theories. **As technologies advance and our knowledge expands, so do the theories we possess.**

As with most animals, humans are designed for critical thinking, to meet an obstacle and overcome it. By finding methods or creating tools which can be repeatedly used for survive or convenience, humans were able to evolve and begin to dominate the planet. Agriculture, the printing press, industry, the light bulb, and penicillin are all examples of these critical thinking skills at work. Similarly, theories were created to explain natural phenomena and direct human invention. Evolution, general relativity, heliocentrism, and the laws of motion are all theories which guide modern scientists.

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1

Theories must be testable and falsifiable. Like claim testing, theories must provide sufficient evidence and demonstrate proper authority to support their claim. Every scientist who develops a new theory works in hope of eventually disproving that theory and replacing it with a better one. Scientists are constantly learning new things, so theories are constantly evolving. Theories are not meant to be stagnant or permanent, that's why they are called theories as opposed to laws. Just as species evolve, so do theories. It's survival of the fittest and extinction for the rest.

The origin of a theory does not take root to its credited discoverer. Einstein based his theories of relativity on the theories of Newton, Kepler based his laws of planetary motion on the models of Copernicus, etc., etc. Humans learn collectively, each generation builds off of the knowledge of their predecessors. The beauty of the human mind is not just the ability to solve an isolated, individual problem but to synthesize and build off of the accomplishments of others.

2

All too frequently, theories go unquestioned or untested by more modern methods. Galileo was ostracized by the Church for criticizing the pope when he published his support of Copernicus' theory of heliocentrism. Nowadays it would be crazy to propose that the Earth is the center of the solar system, let alone the universe. It is important to not only question the predominant theories of your time but also to question everything that you think you know.

Turnitin Scoring: “Developing” for Claim and Focus; “Emerging” for Analysis and Evidence; “Proficient” for Organization; “Proficient” for Language and Style.

Teacher Comments for Applying BHP Concepts: While you used at least two BHP concepts in your essay, you did not define or adequately connect these concepts to your thesis and/or evidence. In order to improve the essay, you should define each BHP concept (claim testing and collective learning in this case) and make sure that these concepts are interwoven throughout the essay, connecting back to the thesis and the evidence.

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Purpose

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Practices

Reading, claim testing

By now, you should be a pro at connecting the elements of reading and writing as part of these Investigation writing activities. Note that claim testing is mentioned as part of the student essay that you are going to analyze. Think about, and discuss with your class if possible, the connections between how claims and theories are supported.

Process

You are about to do another activity in which you will read some student writing and then analyze and revise it to make sure that the writer has applied BHP concepts in the best ways possible.

With your class, review the elements in the BHP Writing Rubric for Applying BHP Concepts (you'll find the rubric at the end of this document). To be considered "Advanced" at applying BHP concepts effectively, you should:

- Connect at least two BHP concepts to the argument and/or evidence.
- Avoid misconceptions of the concepts.
- Make no errors of fact when using BHP concepts.
- Draw on knowledge within the Investigation or unit and perhaps include knowledge beyond or outside the Investigation or unit.
- Demonstrate a clear understanding of the topic and the concepts.

Now that you've reviewed the criteria for Applying BHP Concepts, read the sample essay on the next page and follow the directions. You'll be asked to first highlight the major claim or thesis in the article. Then, underline anywhere BHP concepts were applied. After that, pick two sentences/areas where you believe the writing could be improved in relation to applying BHP concepts, and then revise that writing. Finally, provide the writer with two general comments/suggestions about how the writer could improve upon the essay more generally. You might focus on other areas of the BHP Writing Rubric that you've examined in detail in other lessons, or other areas of writing that you've been working on as a class.

After you're done, discuss what you did with your class. Remember, Investigation 6 is up next, and your teacher may use it as a midterm assessment (it's definitely used by BHP for research so we can keep figuring out how to improve student writing). Of course, you should take all Investigation writing seriously. You should think hard about what you've learned about constructing arguments, using evidence to support those arguments, and applying BHP concepts, and make sure to apply what you know in the Unit 6 Investigation essay.

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Name:

Date:

Directions:

1. Read the essay and **highlight** the major claim/thesis in the article.
2. Underline anywhere BHP concepts was applied.
3. Pick two sentences or areas that you can improve upon, and label one with the number 1, and the other with the number 2.
4. In the space provided below, rewrite or add to the sentences you chose, correcting anything needed in relation to the application of that BHP concept. Make sure you demonstrate an understanding of the concept, that it's connected to the major claim/thesis in the essay, and that you make no errors of fact.
5. Provide two suggestions to the writer about how to improve on applying BHP concepts in his writing.

Rewritten Sentence #1:**Rewritten Sentence #2:****Suggestions for Improvement**

1.

2.

REVISING INVESTIGATION WRITING – APPLYING BHP CONCEPTS

Name:

Date:

Note: *This student essay was written in response to the Unit 5 Investigation question, “How and why do theories evolve?” There were nine documents provided in the Investigation Library.*

Plato, Darwin, and Bacon, all thinkers made great by their ability to seek and describe patterns. Francis Bacon even created the scientific method to which we subscribe today: hypothesize, observe, and synthesize. Human brains are programmed to unearth and construct patterns. In an attempt to make sense of the mystifying world around us, philosophers, biologists, sociologists, chemists, etc. discover and establish theories. As technologies advance and our knowledge expands, so do the theories we possess.

As with most animals, humans are designed for critical thinking, to meet an obstacle and overcome it. By finding methods or creating tools which can be repeatedly used for survive or convenience, humans were able to evolve and begin to dominate the planet. Agriculture, the printing press, industry, the light bulb, and penicillin are all examples of these critical thinking skills at work. Similarly, theories were created to explain natural phenomena and direct human invention. Evolution, general relativity, heliocentrism, and the laws of motion are all theories which guide modern scientists.

Theories must be testable and falsifiable. Like claim testing, theories must provide sufficient evidence and demonstrate proper authority to support their claim. Every scientist who develops a new theory works in hope of eventually disproving that theory and replacing it with a better one. Scientists are constantly learning new things, so theories are constantly evolving. Theories are not meant to be stagnant or permanent, that’s why they are called theories as opposed to laws. Just as species evolve, so do theories. It’s survival of the fittest and extinction for the rest.

The origin of a theory does not take root to its credited discoverer. Einstein based his theories of relativity on the theories of Newton, Kepler based his laws of planetary motion on the models of Copernicus, etc., etc. Humans learn collectively, each generation builds off of the knowledge of their predecessors. The beauty of the human mind is not just the ability to solve an isolated, individual problem but to synthesize and build off of the accomplishments of others.

All too frequently, theories go unquestioned or untested by more modern methods. Galileo was ostracized by the Church for criticizing the pope when he published his support of Copernicus’ theory of heliocentrism. Nowadays it would be crazy to propose that the Earth is the center of the solar system, let alone the universe. It is important to not only question the predominant theories of your time but also to question everything that you *think* you know.



WRITING RUBRIC

	Advanced	Proficient	Developing	Emerging
Claim and Focus* Make a clear claim about the topic early in the essay and focus on proving it.	The essay makes a precise and significant claim based on the topic and/or source(s). The essay maintains a strong focus on defending a directly stated position, using the whole essay to support and develop the claim and counterclaims while thoroughly addressing the demands of the prompt.	The essay makes a clear claim based on the topic and/or source(s). The essay maintains focus on defending an identifiable position, using most of the essay to support and develop the claim and counterclaims while addressing the demands of the prompt.	The essay makes a claim based on the topic and/or source(s), but it may not fully address the demands of the prompt. Counterclaims may not be acknowledged, and the essay may not stay focused on the purpose and task.	The essay makes an overly simplistic or vague claim, or a position on the topic and/or source(s) may not be stated. Counterclaims are not acknowledged, and the essay does not address the purpose, task, or demands of the prompt.
Analysis and Evidence Choose the right evidence and explain how it supports the claim and analysis.	The essay cites the most appropriate and valid evidence to support its claim, drawing information substantively from multiple sources to defend its position and effectively refute counterclaims. The essay demonstrates insightful reasoning and careful understanding of the sources, acknowledging inconsistencies or weaknesses in evidence, and fully explains the relationship between claims and support.	The essay cites sufficient and appropriate evidence to support its claim, drawing information from multiple sources to defend its position and refute counterclaims. The essay demonstrates reasoning and understanding of the sources, potentially acknowledging inconsistencies or weaknesses in evidence, and adequately explains the relationship between claims and support.	The essay cites evidence to support its claim, but it may be insufficient or draw unevenly from available sources. Support may be inadequate in defense of the position and refutation of the counterclaim or rely too heavily on summary. The essay demonstrates some reasoning and/or understanding of the sources, though explanations of the relationship between claims and support are not always clear.	The essay cites minimal or irrelevant evidence to support its claim. Support may rely primarily on opinion, reasoning, or summary of the source(s) without clear cited evidence. The essay demonstrates little to no reasoning and/or understanding of the sources. An explanation of the relationship between claims and support is not present.
Organization Present ideas in a structure that enhances the analysis. Use transitions throughout the essay to make connections clear.	The essay incorporates precise transitions within a sophisticated organizational structure that enhances the relationships between and among ideas and promotes cohesion and clarity. A well-executed, logical progression of ideas is clearly constructed, including an effective introduction and a conclusion which follows from and supports the claim and analysis.	The essay employs an organizational structure that shows the relationships between and among ideas, yielding a cohesive analysis. Clear transitions support a logical progression of ideas, including an effective introduction and a conclusion which follows from and supports the claim and analysis.	The essay uses a simplistic organizational structure, though relationships between ideas may not be consistently clear. Use of transitions is sparse, repetitive, and/or does not show the connections among sections of the text. A progression of ideas is evident, however, the introduction and/or conclusion may not be fully developed or follow from and support the claim and/or analysis.	An organizational structure is not evident, and relationships between ideas are not consistently clear. The essay may read as a series of unrelated ideas, as the absence of transitions makes it difficult to see connections among sections of the text. An introduction and/or conclusion is missing from the essay.



WRITING RUBRIC

	Advanced	Proficient	Developing	Emerging
<p>Language and Style</p> <p>Use specific, interesting language and clear sentence structure to communicate ideas.</p>	<p>The essay has an established, formal style and objective tone that is maintained throughout. The essay uses varied sentence structure, precise language, and domain-specific vocabulary in a way that addresses the complexity of the topic. Few errors are present, and they do not interfere with meaning.</p>	<p>The essay has an established, formal style that is maintained throughout. The essay uses mostly correct, varied sentence structure and generally uses precise language and domain-specific vocabulary in a way that generally addresses the complexity of the topic. The essay may have some errors, but they do not interfere with meaning.</p>	<p>The essay attempts to establish a formal style that may not be maintained throughout. The essay attempts to vary sentence structure and uses some precise language that may be domain-specific at times but may address the complexity of the topic inconsistently. The essay contains some errors that may interfere with meaning.</p>	<p>The essay does not establish and/or maintain a formal style. The essay uses little variety in sentence structure, and the language is general and not domain-specific. The essay contains errors that interfere with meaning.</p>
<p>Applying BHP Concepts†</p> <p>Choose and accurately apply the relevant BHP concepts in a way that shows understanding, and further supports the argument and evidence presented in the essay.</p>	<p>The essay effectively applies at least one BHP course-level concept and/or unit-level concept or content. The concept(s) or content are connected to the argument or evidence in the essay, and misconceptions are avoided. There are no errors in applying BHP concepts or content, and the essay draws on both knowledge within the Investigation and the unit as well as knowledge beyond or outside the Investigation or unit. The essay demonstrates a clear understanding of the topic, the concepts, and the time period discussed in the essay. The essay makes use of broader historical or scientific knowledge than is located in the course.</p>	<p>The essay applies one BHP course-level concept and/or unit-level concept or content. The concept or content is connected to the argument or evidence in the essay, and misconceptions are avoided. There are no errors in applying BHP concept or content to illustrate or support concepts and claims, or to inform the essay. The essay draws on both knowledge within the Investigation and the unit as well as knowledge beyond or outside the Investigation or unit. The essay might draw on broader historical or scientific knowledge than is located in the course to make claims, but might contain some inaccuracies.</p>	<p>The essay tries to apply at least one BHP course-level or unit-level concept or content, but does not fully articulate the concept's meaning or connection to the argument. It does avoid explicit misconceptions of the concept and may make an occasional minor error in applying BHP facts or concepts (that is, ones not found in the Investigation library) to illustrate or support concepts and claims, or to inform the essay. The essay does not draw on broader historical or scientific knowledge than is contained in the course.</p>	<p>The essay incorrectly or inappropriately mentions at least one BHP course-level concept and/or unit-level concept or content, and it may include misconceptions of that concept. The essay may make many minor errors or a major error in applying new BHP facts or concepts (that is, ones not found in the Investigation library). The student fails to use historical content in any meaningful way, and instead simply lists factors or describes elements of the topic.</p>

*Turnitin, LLC, created the first four rows of this rubric for use with their Revision Assistant and Turnitin tools.

†The “Applying BHP Concepts” row of the rubric should be used by teachers and students to assess student learning and understanding in this area. *Teachers should not assess student writing using Turnitin reports exclusively.*



WRITING RUBRIC

Name:

Date:

	Advanced (4)	Proficient (3)	Developing (2)	Emerging (1)	Score
Claim and Focus					
Analysis and Evidence					
Organization					
Language and Style					
Applying BHP Concepts					

Toal Score