First Year Seminar Learning Outcomes

“A First Year Seminar is ... designed to introduce critical thinking skills...

Upon completing this requirement, students will be able to:
• Describe the importance of critical thinking and information literacy and apply the associated skills.”

FYS Learning Outcomes approved by the Faculty Senate of UWSP.
What Critical Thinking Is (and Isn’t)

Critical thinking is a set of skills that can help us to…

1) evaluate the acceptability of claims through
   a) assessing the sources of the claims
   b) analyzing and evaluating the arguments (chains of reasoning) in support of the claims

2) discover new acceptable claims by
   a) engaging in scientific reasoning
   b) constructing arguments

3) demonstrate to someone else that a claim is acceptable (or unacceptable) by communicating arguments

Critical thinking doesn’t include many important things, like the practice of simply believing claims without conscious deliberation or investigation, the exercise of pre-reflective creativity or intuition and engagement in non-persuasive communication.

Critical Thinking and Learning Outcomes

[Diagram showing the overlap between Critical Thinking Skills and Learning Outcomes, with sections for Critical Thinking Skills that aren’t Learning Outcomes and Learning Outcomes that aren’t Critical Thinking Skills.]
Some Elements of Critical Thinking

An argument is a unit of reasoning that attempts to establish that an idea (the ultimate conclusion) is acceptable by citing other ideas as evidence.
Some Elements of Critical Thinking

Distinguish between important and unimportant ideas and understand how the important ideas work together to establish the acceptability of the ultimate conclusion.

RECOGNIZE Arguments
CONSTRUCT Arguments
ANALYZE Arguments
EVALUATE Arguments

Some Elements of Critical Thinking

Evaluate the premises (They should be true and acceptable to the argument’s audience.)

Evaluate the inferences (The truth of the reason should make the truth of the conclusion more likely.)

Understand what bearing the argument has upon the acceptability of the ultimate conclusion (Good arguments mean that the conclusion is acceptable. Bad arguments tell us nothing about the acceptability of the conclusions.)
Some Elements of Critical Thinking

Ask a question
Do Background Research: Consider various answers. Learn and think more about the issues involved.

Formulate Answer
Construct an Argument for your Answer: Ask “What are some reasons to think this answer is true?” Once you have some ideas down, determine what argumentative role you intend each of these ideas to serve, decide how you want your inferences to run, and diagram your argument.

Evaluate the Argument: 1. Assess the inferences. If an inference is weak, repair it by adding a dependent reason to plug the gap. 2. Assess the premises. If a premise isn’t true, change it to something that is. If a premise is true but might not be acceptable to the argument’s audience, make the premise a subconclusion. 3. Evaluate the new inferences and new premises, repeating the process until the argument is good, if possible.

If the argument is good then the conclusion is probably true. Report results.
If the argument is bad, seek a better argument, seek a better answer, or seek a better question.

Recognizing Arguments: Example

“Critical thinking is all the rage today, and chances are good that you think critical thinking skills should be integrated into general education courses. Well, you’re wrong. We shouldn’t try to explicitly teach critical thinking skills in our general education courses. For one thing, critical thinking skills are inextricably discipline-specific. This means that they aren’t generalizable, and general education courses should focus on generalizable skills. For another thing, general education courses should teach facts, not how to think. And finally, most of our students will acquire their critical thinking skills without explicit instruction because most of us acquired our own critical thinking skills that way.”
“Critical thinking is all the rage today, and chances are good that you think critical thinking skills should be integrated into general education courses. Well, you’re wrong. We shouldn’t try to explicitly teach critical thinking skills in our general education courses. For one thing, critical thinking skills are inextricably discipline-specific. This means that they aren’t generalizable and general education courses should focus on generalizable skills. For another thing, general education courses should teach facts, not how to think. And finally, most of our students will acquire their critical thinking skills without explicit instruction because most of us acquired our own critical thinking skills that way.”

Analyzing Arguments: Example

Unimportant Ideas
(42.09% / 81.7%)

Ultimate conclusion
(80.91% / 92.8%)
Analyzing Arguments: Getting Real

We won’t always diagram an argument.

We will always distinguish important ideas from unimportant ideas and find some way to understand how the important ideas work together to support the ultimate conclusion.

Evaluating Arguments: Example

- Critical thinking skills are inextricably discipline-specific.
  - Premise is False (78.74% / 86%)
  - Critical thinking skills aren’t generalizable

- Gen ed courses should focus on generalizable skills.

- Premise Assumes the Conclusion (9.978% / 9.95%)

- General ed courses should teach facts, not how to think.

- Inference is Weak (19.52% / 57.2%)

- Most of us acquired our critical thinking skills without explicit instruction.

- Most of our students will acquire their critical thinking skills without explicit instruction.

- We shouldn’t try to explicitly teach critical thinking skills in our gen ed courses.
  - Tells us nothing about the ultimate conclusion. (39.91% / 69.7%)
Evaluating Arguments: Getting Real

The goal is to go as far along this path as we can, but no farther.

A general feeling of disquiet about an argument or an ultimate conclusion that’s probably false.

“Something is wrong somewhere, either with me or with the argument.”

“I was mistaken. The argument is okay. The conclusion is probably true.”

“Something is wrong with the argument.”

“Something is wrong in this general area of the argument.”

“Something is wrong right here (with this premise / with this inference).”

Premise Problem

Say something like:

- “P is false because [evidence for P’s falsity].”
- “P assumes the conclusion because [explain how belief in P presupposes belief in U / explain why people who don’t believe U won’t believe P].”

Inference Problem

If you do believe R, say something like:

- “Just because R it doesn’t follow that C because [explain how R can be true and C false at the same time].”
- “R doesn’t mean that C because [explain how R can be true and C false at the same time].”

If you don’t believe R, say something like:

- “Even if R were true, it wouldn’t follow that C because [explain how R can be true and C false at the same time].”
Constructing Arguments

Ask a Question
Should we try to teach critical thinking skills in gen ed courses?

Do Background Research
Consider various answers. Learn and think more about the issues involved.

Formulate Answer
Yes, We should try to teach critical thinking skills in gen ed courses?

Construct & Evaluate an Argument for your Answer

To construct an argument: Ask “What are some reasons to think this answer is true?” Once you have some ideas down, determine what argumentative role you intend each of these ideas to serve, decide how you want your inferences to run, and diagram your argument.

To evaluate the argument: 1. Assess the inferences. If an inference is weak, repair it by adding a dependent reason to plug the gap. 2. Assess the premises. If a premise isn’t true, change it to something that is. If a premise is true but might not be acceptable to the argument’s audience, make the premise a subconclusion. 3. Evaluate the new inferences and new premises, repeating the process until the argument is good, if possible.

Critical thinking will guarantee true beliefs.

Critical thinking skills are important. + Many students don’t have strong critical thinking skills.

We should try to teach critical thinking in gen ed courses.
Construct & Evaluate an Argument for your Answer

To construct an argument: Ask “What are some reasons to think this answer is true?” Once you have some ideas down, determine what argumentative role you intend each of each of these ideas to serve, decide how you want your inferences to run, and diagram your argument.

To evaluate the argument: 1. Assess the inferences. If an inference is weak, repair it by adding a dependent reason to plug the gap. 2. Assess the premises. If a premise isn’t true, change it to something that is. If a premise is true but might not be acceptable to the argument’s audience, make the premise a subconclusion. 3. Evaluate the new inferences and new premises, repeating the process until the argument is good, if possible.

We should try to teach critical thinking in gen ed courses.

Critical thinking helps people to avoid being “taken in.”

Critical thinking skills are important. + Many students don’t have strong critical thinking skills.

We should try to teach critical thinking in gen ed courses.

Critical thinking helps people to avoid being “taken in.”

Critical thinking skills are important. + If many students don’t have important, learnable skills, then gen ed courses should try to teach students these skills.

Many students can learn critical thinking skills. + We should try to teach critical thinking in gen ed courses.
Construct & Evaluate an Argument for your Answer

To construct an argument: Ask “What are some reasons to think this answer is true?” Once you have some ideas down, determine what argumentative role you intend each of these ideas to serve, decide how you want your inferences to run, and diagram your argument.

To evaluate the argument: 1. Assess the inferences. If an inference is weak, repair it by adding a dependent reason to plug the gap. 2. Assess the premises. If a premise isn’t true, change it to something that is. If a premise is true but might not be acceptable to the argument’s audience, make the premise a subconclusion. 3. Evaluate the new inferences and new premises, repeating the process until the argument is good, if possible.

Critical thinking helps people to avoid being “taken in.”

Pre-test results demonstrate shaky critical thinking skills.

Post-test results demonstrate improved critical thinking skills.

If many students don’t have important, learnable skills, then gen ed courses should try to teach students these skills.

We should try to teach critical thinking in gen ed courses.

Construct & Evaluate an Argument for your Answer

To construct an argument: Ask “What are some reasons to think this answer is true?” Once you have some ideas down, determine what argumentative role you intend each of these ideas to serve, decide how you want your inferences to run, and diagram your argument.

To evaluate the argument: 1. Assess the inferences. If an inference is weak, repair it by adding a dependent reason to plug the gap. 2. Assess the premises. If a premise isn’t true, change it to something that is. If a premise is true but might not be acceptable to the argument’s audience, make the premise a subconclusion. 3. Evaluate the new inferences and new premises, repeating the process until the argument is good, if possible.

Argument is Good
This means that the conclusion is probably true.

Report Results
Seek better argument.

Argument is not Good
We haven’t established that the conclusion is true (although it might be true).

Seek better answer.
Seek better question.
Critical thinking skills are important because they help people to avoid being ‘taken in’ by bad reasoning. Pre and post test results demonstrate that although many students don’t have strong critical thinking skills, they can learn these skills in courses that take critical thinking instruction as an important pedagogical objective. If there is a set of important, learnable skills that many students lack, it’s clearly within the purview of general education courses to teach students these skills. Therefore, we should try to teach critical thinking skills in general education courses.

**What Critical Thinking Is (and Isn’t)**

**Critical thinking is a set of skills that can help us to…**

1) evaluate the acceptability of claims through
   a) assessing the sources of the claims
   b) analyzing and evaluating the arguments (chains of reasoning) in support of the claims

2) discover new acceptable claims by
   a) engaging in scientific reasoning
   b) constructing arguments

3) demonstrate to someone else that a claim is acceptable (or unacceptable) by communicating arguments

**Critical thinking doesn’t include many important things**, like the practice of simply believing claims without conscious deliberation or investigation, the exercise of pre-reflective creativity or intuition and engagement in non-persuasive communication.