

McGraw-Hill Education

POWER OF PROCESS: PSYCHOLOGY

An Online System for Learning Information
Literacy and Practicing Research Analysis

2018 Pedagogical Guide

*Incorporating Learning Science and Best Practices Pertaining to
Higher-Order Thinking and Critical Analysis of Research*

**Mc
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Hill**
Education

POWER OF PROCESS: PSYCHOLOGY

Learning Science-Based Program for Information Literacy and Research Analysis

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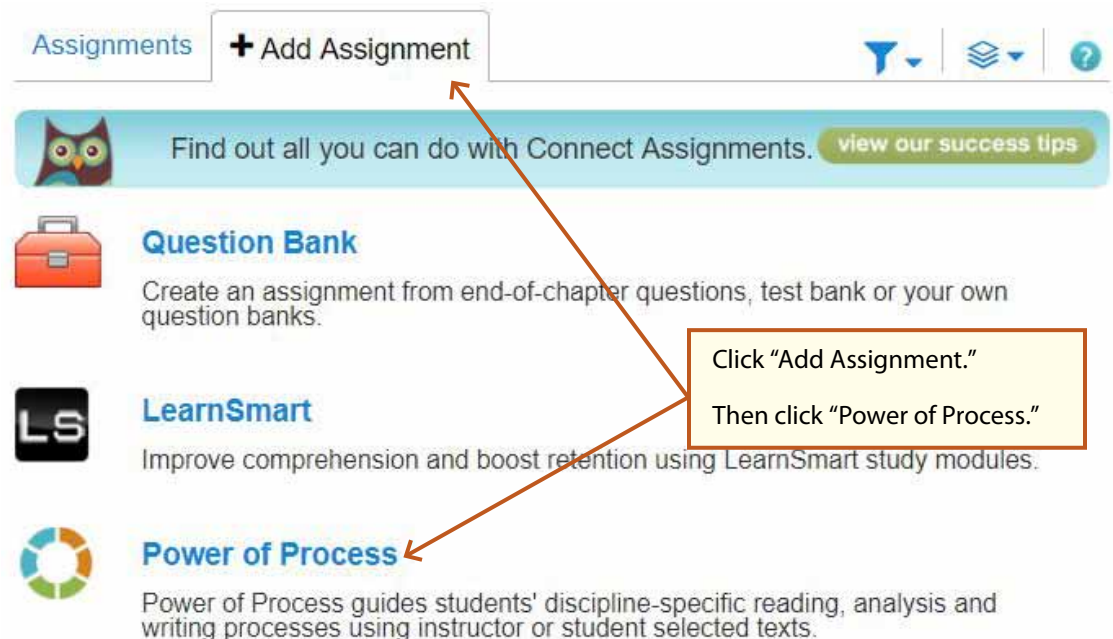
Make an Assignment



To make a Power of Process assignment, go to the course's home page, click "Add Assignment," and then click "Power of Process."

FIGURE QS 1

Screen for instructors to add a Power of Process assignment to their Connect Psychology course



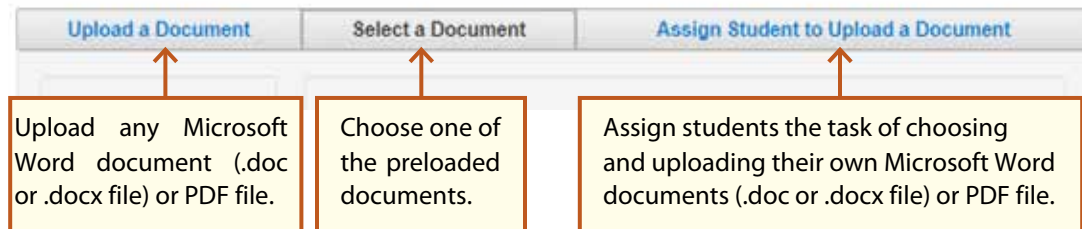
Choose a Document



From the “Choose Document” page, three options are presented. Instructors can Select a Document from preloaded research articles in Power of Process. They can Upload a Document using .doc, .docx, or .pdf files. Or they can Assign Students to Upload a Document, which means students will be instructed by Power of Process to upload their own .doc, .docx, or .pdf files when they are starting their assignment.

FIGURE QS 2

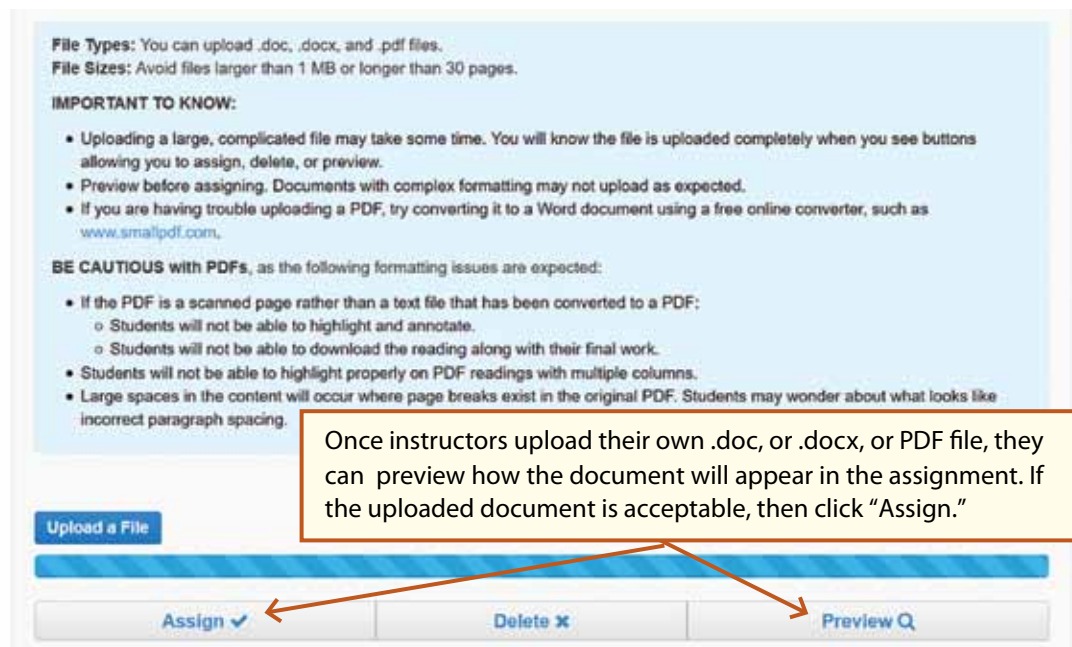
Screen for Instructors to upload their own document, select a preloaded document, or assign students to upload a document.



If instructors upload their own .doc, .docx, or .pdf file, they will be prompted to assign the selection.

FIGURE QS 3

Screen for instructors to assign, delete, or preview an uploaded document



Important to Know about File Types and Sizes

- Avoid files larger than 1 MB or longer than 30 pages.
- Uploading a large, complicated file may take some time. They will know the file is uploaded completely when they see buttons allowing them to assign, delete, or preview.

- Preview the file before assigning it to students. Documents with complex formatting may not upload as expected.
- If they are having trouble uploading a PDF, try converting it to a Word document using a free online converter, such as www.smallpdf.com
- If the PDF is a scanned page rather than a text file that has been converted to a PDF, students will be able to use the text box response tool (but not the highlight and annotate tools). Using a scanned page PDF also means the students will not be able to download the reading along with their final work at the end of the Power of Process assignment.
- PDFs with multiple columns pose issues with highlighting.
- Large spaces in the content will occur where page breaks exist in the original PDF. Students may wonder about what appears to be incorrect paragraph spacing.

Choose Preloaded Documents



If instructors are selecting one of the preloaded documents, they will see the list of research articles available to assign. They can filter by subject to narrow down the list. Each preloaded document can be previewed.

The screenshot shows a web interface for selecting documents. At the top, there are three tabs: 'Upload a Document', 'Select a Document' (which is active), and 'Assign Student to Upload a Document'. On the left side, there are filter categories with checkboxes:

- Abnormal Psychology**
 - ☐ Anxiety
 - ☐ Autism-Spectrum Disorder
 - ☐ Depression
- Cognition**
 - ☐ Cognition
- Consciousness**
 - ☐ Alcohol
 - ☐ Marijuana
- Educational Psychology**
 - ☐ Educational

On the right, a list of documents is shown with their titles and two buttons: 'Preview Q' and 'Assign ▶'. The documents listed are:

- A Self-affirmation Exercise Does Not Improve Intentions to Vaccinate among Parents with Negative Vaccine Attitudes
- Blink and You'll Miss It: The Role of Blinking in the Perception of Magic Tricks
- Cultural Effects on the Association between Election Outcomes and Face-based Trait Inferences
- Diet-induced Impulsivity: Effects of a High fat and a High-sugar Diet on Impulsive Choice in Rats
- Do Student Samples Provide an Accurate Estimate of the General Public?

Two orange arrows point from a yellow callout box to the 'Cognition' filter and the 'Preview Q' button for the document 'Cultural Effects on the Association between Election Outcomes and Face-based Trait Inferences'.

Preview any document before assigning it.
Filter selections according to topic or through the preloaded documents.

Assign Students to Upload a Document



If instructors choose to have students upload their own documents, they will still create the Power of Process assignment for students to follow and complete using their own choices. When students open the assignment, they will be prompted to upload a .doc, .docx, or .pdf document. Then students will use their own selection to complete the assignment the instructor has created.

Choose Strategies



After choosing a research article for the assignment, the instructor will be presented with the Power of Process “default circle”. The same default process circle appears every time an instructor makes an assignment.

FIGURE QS 5

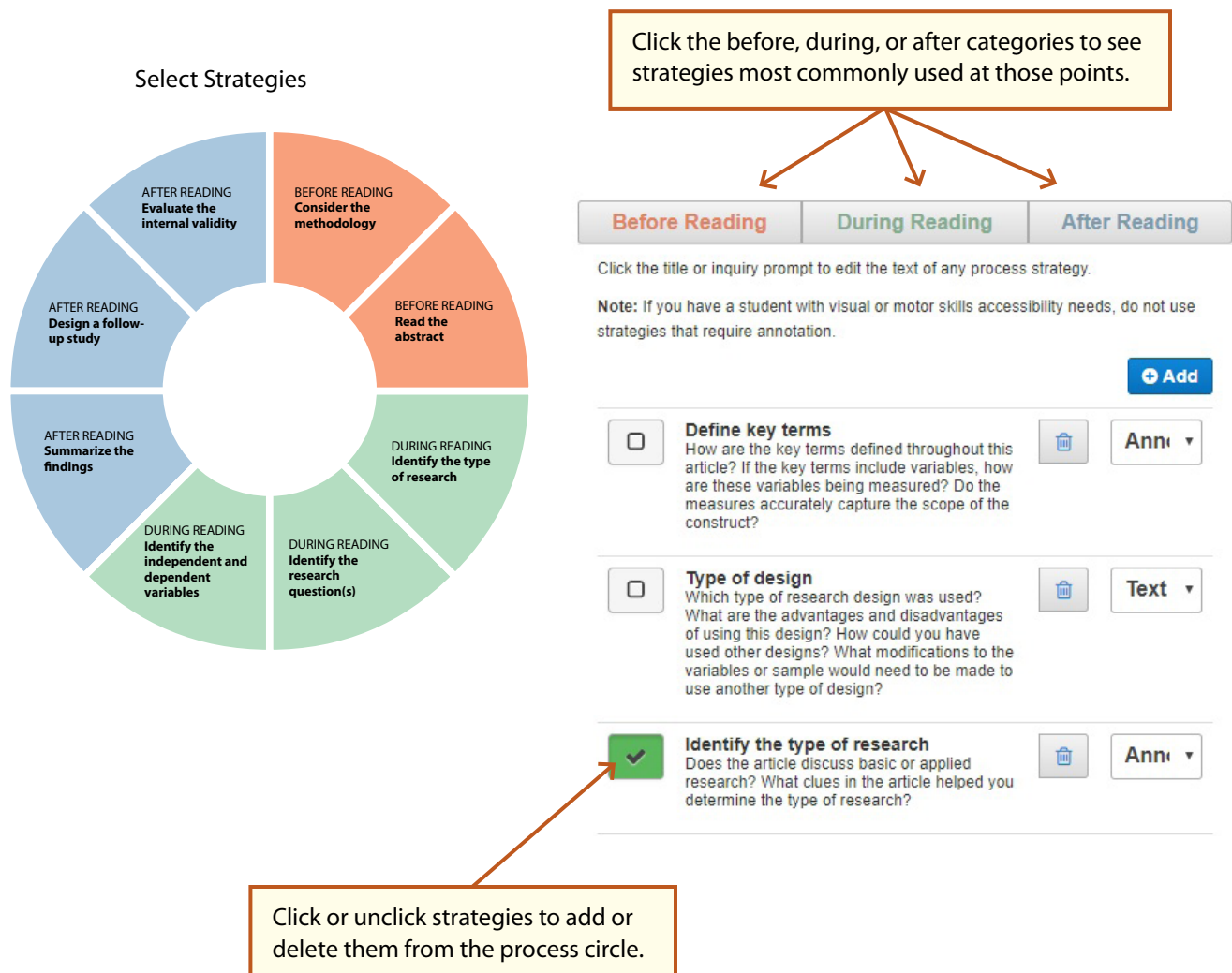
Power of Process
default process
circle



The default framework gives instructors a research-based set of strategies to begin using immediately in the classroom. However, the default circle is only a starting point. Revise the process circle by adding and/or deleting the preloaded before-, during-, and after-reading strategies.

FIGURE QS 6

Screen for instructors to add and delete strategies for each of the three stages (before reading, during reading, and after reading) by first selecting the stage and then clicking and unclicking the boxes next to the strategies



Choose Response Tools: Text Box or Highlight/Annotate

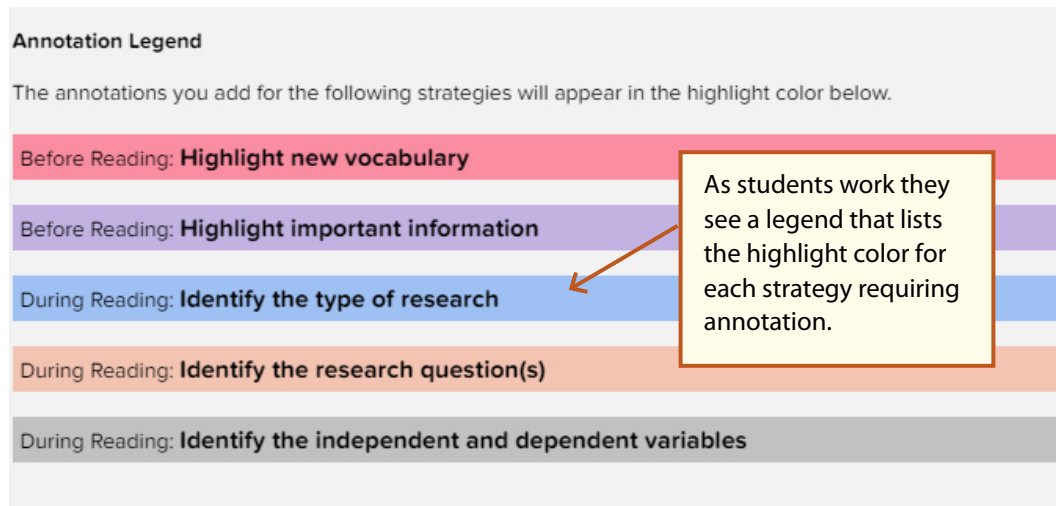
For each strategy included in the process circle, instructors can choose to have students respond either within a text response box or by using the highlight and annotation tool. Each preloaded strategy has a default method of student

response, but instructors can change that method simply by clicking on either “Text Response” or “Annotation”.

When instructors choose highlight and annotation, the program assigns a different highlight color to each strategy. Those colors are listed for students as they work on the assignment.

FIGURE QS 7

Screen for students showing them the highlight colors Power of Process will use for each strategy in an assignment



Name the Assignment, Provide Instructions for Students, Establish a Due Date and Point Value



Workload organization often is an important consideration for psychology instructors, as psychology classes produce multiple class assignment sets, and departments or institutions require assessment data. One way to organize the Power of Process assignments is by naming them descriptively to reflect the particular assignment. Assignment names serve as a quick reference guide for generating performance data using Connect Psychology.

Enter clear student instructions and the due date for the assignment. The instructions will appear on the assignment screen when students open their assignment within their Connect Psychology course. Instructors may assign any point number between 0 and 1000.

FIGURE QS 8

Screen for instructors to give an assignment a name, due date, instructions to the student, and point value.

The screenshot shows a form for creating an assignment. It includes fields for Name, Instructions, Start Date, Due Date, and Points. A callout box points to the Name, Instructions, Due Date, and Points fields, stating: "Add an assignment title, student instructions, a due date, and number of points (any number between 0–1000)." Another callout box points to the Continue button, stating: "When instructors are ready, they click 'Continue.'" The Continue button is circled in red.

Name: Assignment Title

Instructions: Add Instructions

Start Date: 05/02/2016 12:00 AM PDT

Due Date: mm/dd/yyyy 11:59 PM PDT

Points: 100

Upload an Attachment

Previous: Select Strategies

Continue
Save & Exit

When finished, instructors click "Continue" and they will be brought to the final set-up page. On this page, they may choose to have the assignment copied to all sections of their course. They may also send copies of the assignment to colleagues:

When instructors have finished making an assignment, they will see the assignment listed on their section's Connect home page:

Assignments		+ Add Assignment					
Title		Shared	Info	Start-due	Show/hide		
	Research Analysis Assignment #1			01/31/18-02/22/18			

Students can now log onto their Connect Psychology course section and work on this assignment.

Get to Know Connect Psychology's Power of Process

Introduction



Power of Process is one of the learning technologies, or assignment types, in McGraw-Hill Education's *Connect Psychology*. One overarching goal is at the heart of Power of Process: for students to develop self-regulating, strategic skills pertaining to information literacy and research analysis. Power of Process facilitates engaged reading, writing, and thinking processes using research-based best practices.

Though the program is designed to be “standalone,” Power of Process can be customized easily to match strategies presented in any textbook and in any college course.

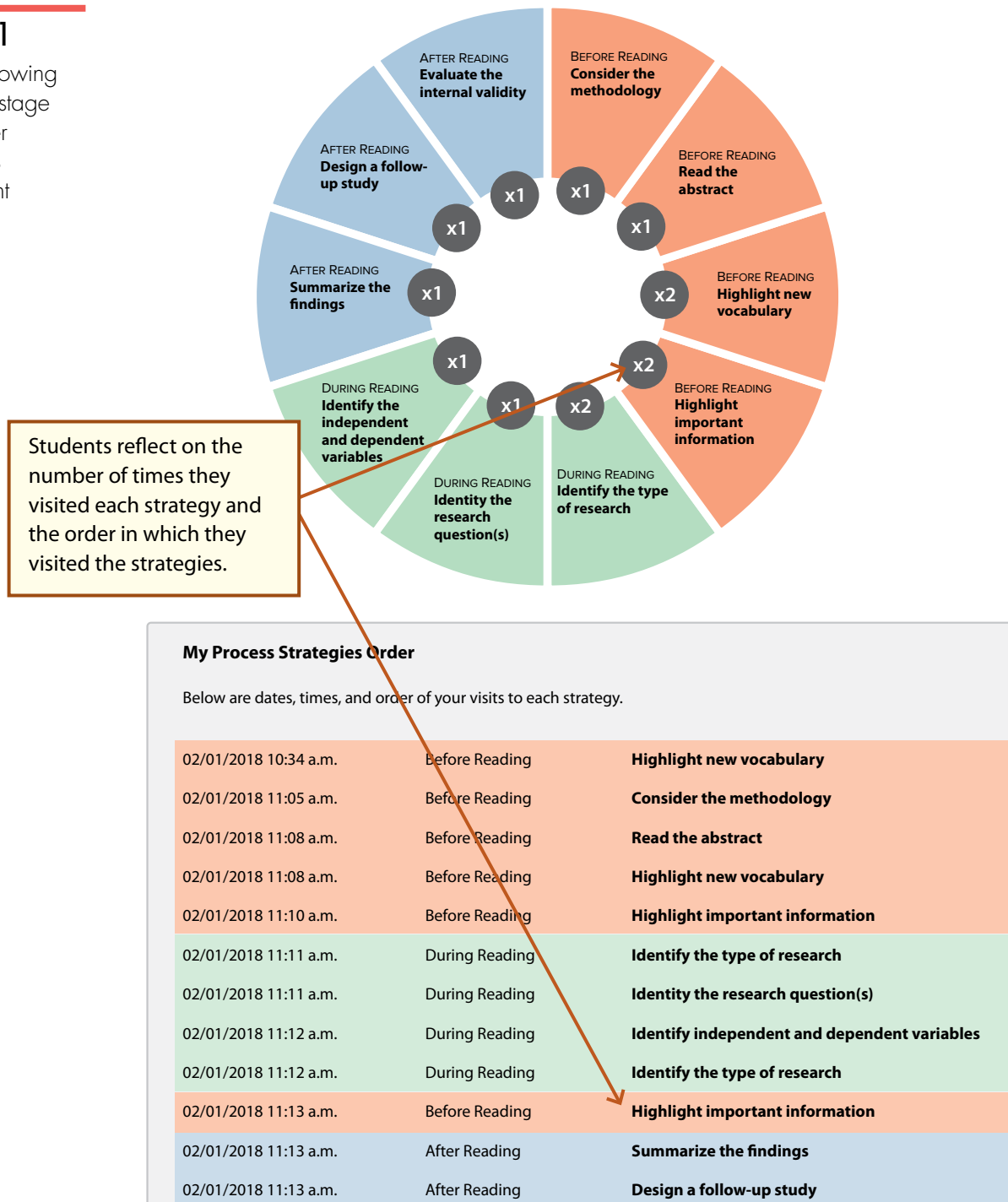
Power of Process offers 46 preloaded strategies, which are divided into three categories: before reading, during reading, and after reading (Vacca, 2002). When designing a Power of Process assignment, an instructor chooses from among the 46 customizable strategies or creates their own.

<i>Before Reading</i>	13 strategies
<i>During Reading</i>	14 strategies
<i>After Reading</i>	19 strategies

To complete an assignment, students must click at least once, in any order, on each strategy and then apply the strategy to the assigned text underneath the floating process circle. Students respond to the prompts in each of the strategies by using either a highlight and annotate tool, or by writing in a text box. The tools used across the assignment are determined in advance by the instructor who designed the assignment. When students have clicked on and engaged with each strategy at least once, they will then have the opportunity to reflect in writing about their reading and writing process.

FIGURE 1.1

Screen showing reflection stage in a Power of Process assignment



A “My Work” page displays their work on each of the strategies. At this point, students can download their completed assignments as PDFs and/or submit them to their instructor through Power of Process/Connect Psychology.

Power of Process is Strategic, Research-based, Flexible



The overarching goal of Power of Process is for students to develop self-regulating, strategic skills pertaining to information literacy and research analysis. Students who think about the strategies they are using, and decide when a specific strategy is best used, are practicing the flexibility that's essential to success in college.

Strategic: students think about the decisions they make as they negotiate reading and writing processes

Flexible: students adjust their decisions to reflect the expectations of an assignment or a discipline

Strategic and Research-based



Power of Process helps students engage with research articles closely and critically so that they develop awareness of their process decisions, and ultimately begin to make those decisions consciously on their own.

Every component of Power of Process is based in empirical research and research-informed theory. The program itself is guided in part by the theoretical framework of sociocognitivism. Each of the 46 preloaded process strategies, the metacognitive component that helps students make conscious the decisions they make as they negotiate process, and the design of the Process circle are research-based.

Flexible




College students read and write for many reasons and in multiple disciplines, and no specific process can meet all assignments, writing purposes, or discipline expectations. Therefore, Power of Process is designed with flexibility at its core. That flexibility extends both to students and to instructors.

As skilled readers, writers, and thinkers, instructors know how important flexibility is to engaging in process. Instructors also know the variety of processes students are expected to engage in during their college careers. Choosing strategies to include in a process depends upon reading and writing purposes; assignment expectations; and discipline expectations. In addition, an instructor can phrase a strategy any number of ways.

Power of Process allows instructors to customize processes. They can build a process circle choosing from the program's 46 preloaded strategies, customize all the strategies in a process circle, or mix and match preloaded and customized strategies. Instructors can include as few as one strategy or as many strategies as they like, and can align their process circles with any textbook. Process circles

can be designed specifically for any type of assignment that demands process engagement.

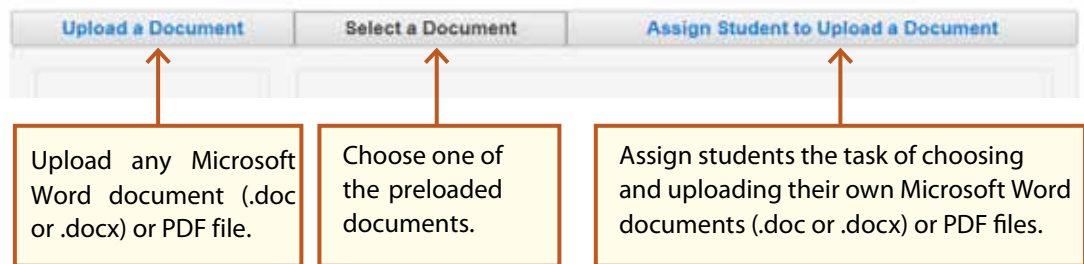
Another part of the program's flexibility is in its learning curve for instructors. In Power of Process, instructors can start out by using the simple, default process circle, allowing them to use the program immediately, with very little time involved in learning the technology or creating assignments from scratch. Instructors can then move into building their own process circles for assignments, choosing from among the 46 preloaded, research-based strategies. Finally, instructors can customize both the process circle and the strategies.

Document Flexibility  Instructors have choice in the documents they can upload to Power of Process. Each assignment does demand that a document is uploaded to the assignment; however, the document choice is up to the instructor.

In Power of Process instructors have three options for selecting documents. When making an assignment, instructors will see the "Choose Document" screen. They can choose to select from preloaded documents, to upload any .doc, .docx, or .pdf file, or to have their students upload their own .doc, .docx, or .pdf files.

FIGURE 1.2

Screen for Instructors to upload their own document, select a preloaded document or assign students to upload a document




Upload a Document  When uploading their own Microsoft Word or PDF files, instructors can include in the document any images, charts, and hyperlinks. The documents should be saved on the instructor's computer as a .doc, .docx, or .pdf file, and then uploaded into the assignment by clicking on "Upload a Document" and then "Upload a File".

FIGURE 1.3

Screen for instructors to upload a document

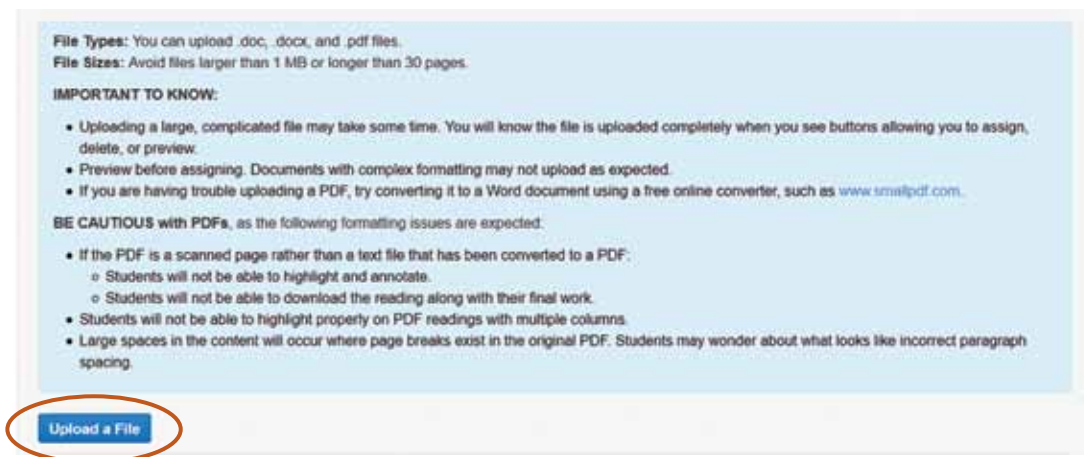
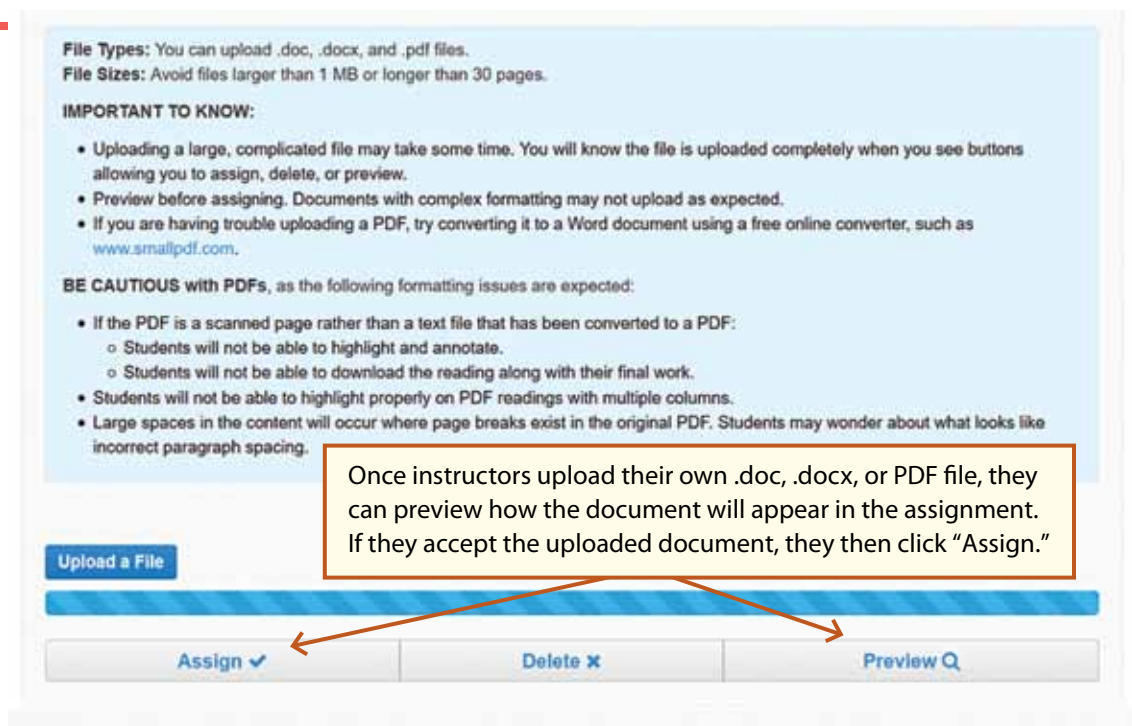


FIGURE 1.4

Screen for instructors to assign, delete, or preview an uploaded document



Important Information about File Types and Sizes



- Avoid files larger than 1 MB or longer than 30 pages.
- Uploading a large, complicated file may take some time. Instructors will know the file is uploaded completely when they see buttons allowing them to assign, delete, or preview.
- Preview the file before assigning it to students. Documents with complex formatting may not upload as expected.
- If there's a problem uploading a PDF, try converting it to a Word document using a free online converter, such as www.smallpdf.com
- If the PDF is a scanned page rather than a text file that has been converted to a PDF, students will be able to use the text box response tool (but not the highlight and annotate tools). Using a scanned page PDF also means the students will not be able to download the reading along with their final work at the end of the Power of Process assignment.
- PDFs with multiple columns pose issues with highlighting.
- Large spaces in the content will occur where page breaks exist in the original PDF. Students may wonder about what appears to be incorrect paragraph spacing.


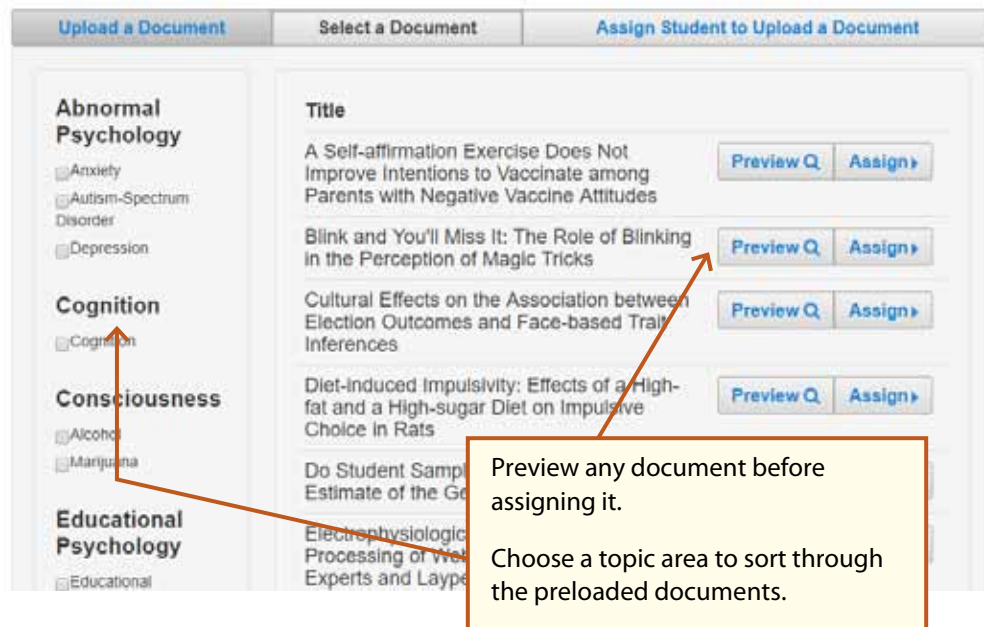

Select a Document  When selecting one of the preloaded documents, instructors will see the list of research articles. They can preview or select any one of these articles, and also use a variety of filters to sort the documents.

FIGURE 1.5

Screen for instructors to select a preloaded document



Assign Student to Upload a Document  If instructors want to have their students upload their own documents, they will still need to create a process circle for students to use with the selections the students will upload. When students

open their Power of Process assignment, they will be prompted to upload a .doc, .docx, or .pdf file. The process circle created by the instructor will float over each student's selection.

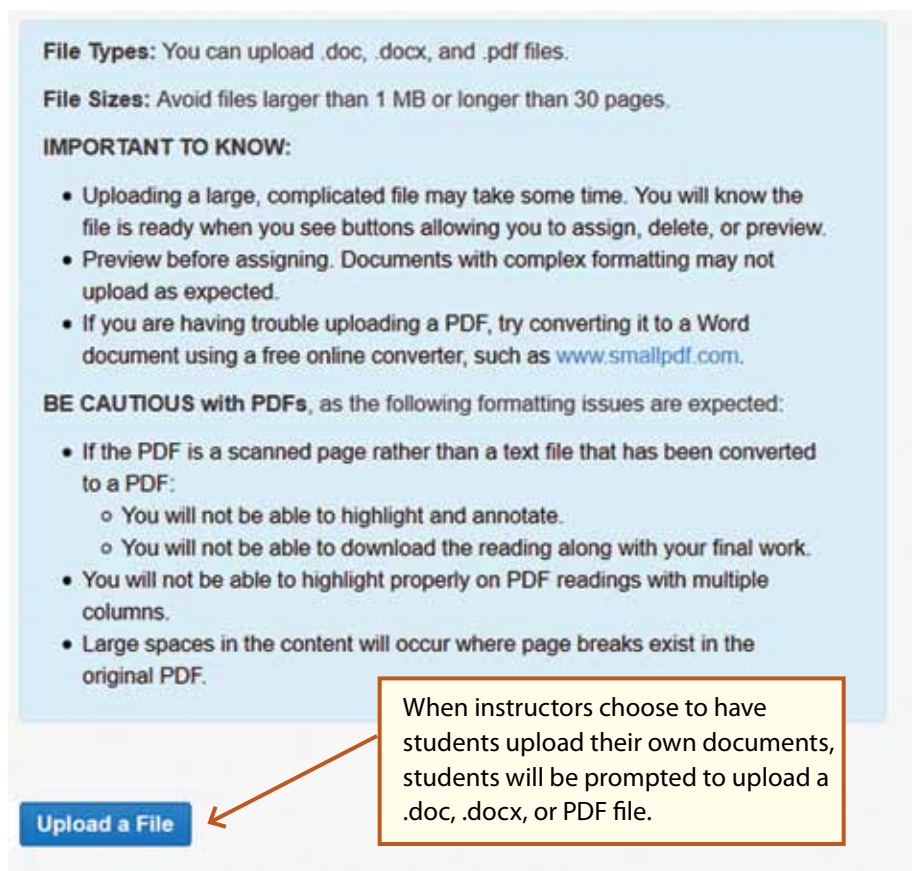


FIGURE 1.6

Screen for students to upload a file


Process Circle Flexibility  During assignment creation, a default process circle (Figure 1.7) appears after instructors select the document for the assignment.

FIGURE 1.7

Default process circle

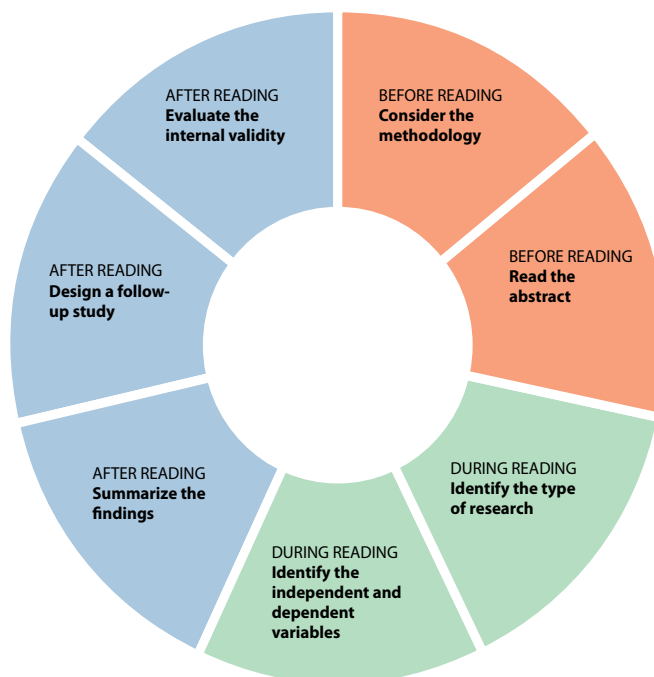


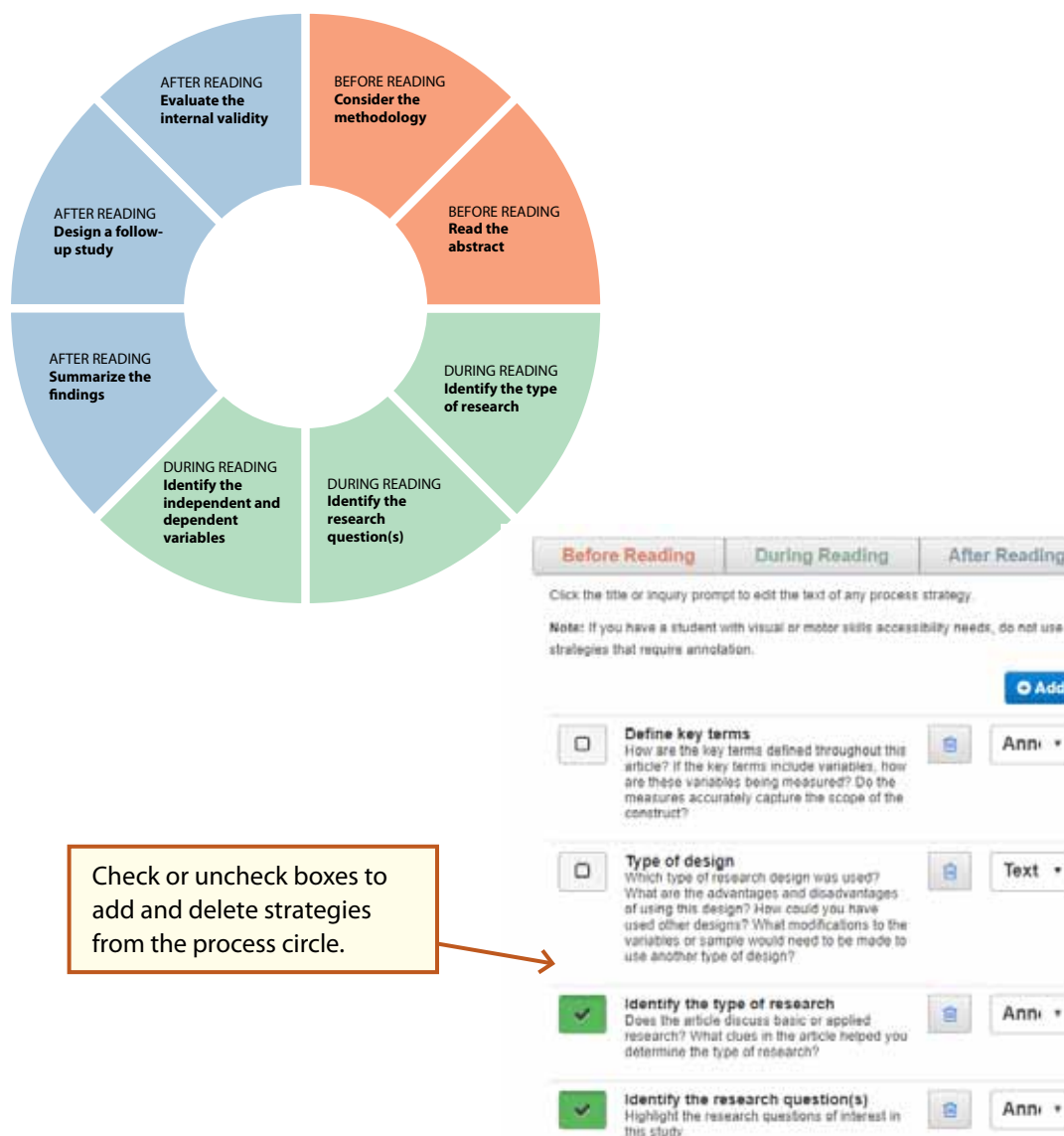
TABLE 1.1 Strategies and prompts in the default process circle

	Default Strategy	Default Prompt	Student Response
Before Reading	Consider the Methodology	What information do you already know about a type of methods used to study this topic area? What limitations can you recognize about the particular methodology used in this article?	Text
	Read the Abstracts	Read the abstract. Based on the abstract, what do you think you will find in this article?	Text
During Reading	Identify the Type of Research	Does the article discuss basic or applied research? What clues in the article helped you determine the type of research?	Annotate
	Identify the independent and dependent variables	What are the independent variable(s)? What are the dependent variable(s)? Does the research design chosen require true independent and dependent variables?	Annotate
After Reading	Summarize the findings	Put the findings of this study into your own words	Text
	Design a follow-up study	Think about how you would choose to follow up this research. What would be the best next study to test this phenomenon? What methodological approach would you use?	Text
	Evaluate the internal validity	Analyze the internal validity of this study. What strategies were used to minimize risks to internal validity and what else could have been used to ensure that changes in the dependent variable were attributable to differences in the independent variable?	Text

Instructors can build their own process circles to reflect processes presented in their textbooks, common strategies shared with colleagues or across sections in large programs, or student learning outcomes for a particular course. Instructors can customize their process circles by adding or deleting strategies.

FIGURE 1.8

Add or delete strategies to build a custom process circle



Preloaded and Customizable Strategies Table 1.2 presents the 46 strategies that are preloaded into Power of Process. Instructors can choose to add or delete any of these strategies as they build a process circle. Page 21 presents a more comprehensive view of the 46 strategies, the default prompts that students re-pond to, and the default tool students will use to respond (text box or highlight and annotation).

TABLE 1.2 46 Preloaded strategies organized by stage

<i>Before Reading (13 Strategies)</i>	<i>During Reading (14 Strategies)</i>	<i>After Reading (19 Strategies)</i>
1. Consider the title	1. Define key terms	1. Recall what you've just read
2. Analyze the title	2. Type of design	2. Outline or map the article
3. Recognize prior knowledge	3. Identify the type of research	3. Summarize the findings
4. Consider the methodology	4. Identify the research question(s)	4. Evaluate the research's quality
5. Preview the article	5. Identify the hypothesis(es)	5. Ask whether the conclusions are warranted
6. Read the abstract	6. Explain the approach	6. Formulate an overall opinion
7. Highlight new vocabulary	7. Identify the independent and dependent variables	7. Design a follow-up study
8. Highlight important information	8. Operationalize the variables	8. Conduct a risk-benefit analysis
9. Determine the end goal	9. Search for confounding variables	9. Evaluate the ethics
10. Determine the type of data	10. Identify the sampling strategy	10. Describe the level of measurement
11. Ask questions about the article	11. Explain the sampling strategy	11. Evaluate the internal validity.
12. Consider a question	12. Identify the risks	12. Identify researchers' key conclusions
13. Skim the article	13. Engage in self-explanation	13. Evaluate the external validity
	14. Re-read the article	14. Describe findings
		15. Construct a citation
		16. Consider potential improvements
		17. Extend the study
		18. Generalize the sample
		19. Re-read the abstract

Process Reflection: The Meta-view Stage in Power of Process



When students have clicked on and responded to the inquiry prompts in each of the process circle strategies, a green button appears at the circle's center, leading students to a metacognitive reflection. This reflection does not focus on the document or on the assignment's purpose. Instead, the reflection asks students to take a meta-view of their decision making while they engaged in the assignment's process.

FIGURE 1.9

Screen inviting students to proceed to the process reflection



At this point in the assignment, students do not yet have to click on the green button. Reading and writing are recursive, and students can click as many times as they need to on each strategy, and can click on the strategies in any order. However, when students are ready, they click on the green button to continue the assignment. They will see a prompt and a text box.

FIGURE 1.10

Reflection text box

REFLECTION
Analyze your process
Below is a display of the Power of Process circle and a list that details the order in which you completed the process. Why did you decide to visit the reading strategies in this order? How did your strategy decisions help you understand and think about the text? Which strategies helped you most? What strategies will you use the next time you read a text?

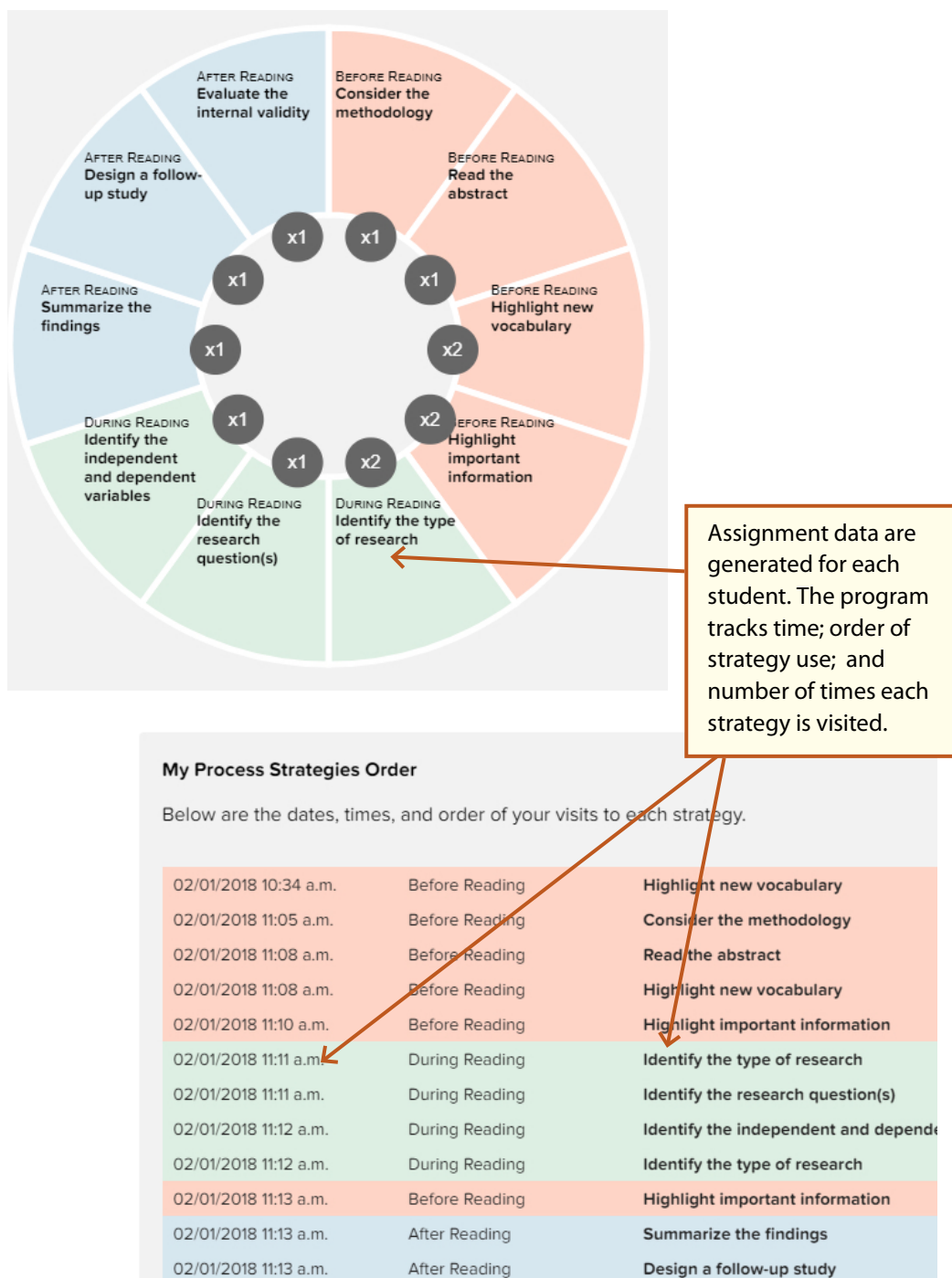
[Large text input box]

Save

When students scroll down the page, they will see information about the decisions they made. The program generates data sets for each student on the number of times they clicked on each strategy, a time stamp for each strategy, and the order in which they worked on the strategies. Students then can consider these data and use them to answer the reflection prompt.

FIGURE 1.11

Screen showing students their process



Using Power of Process to Assess



Engagement in process includes both student and instructor. In Power of Process, instructors are able to visit students' decisions and responses as they engage with the process. Much like mathematics students showing the work necessary to reach a problem's solution, in Power of Process students submit both the products of their work and the decisions they made as they developed those products. Instructors can score Power of Process assignments using criteria established for each assignment.

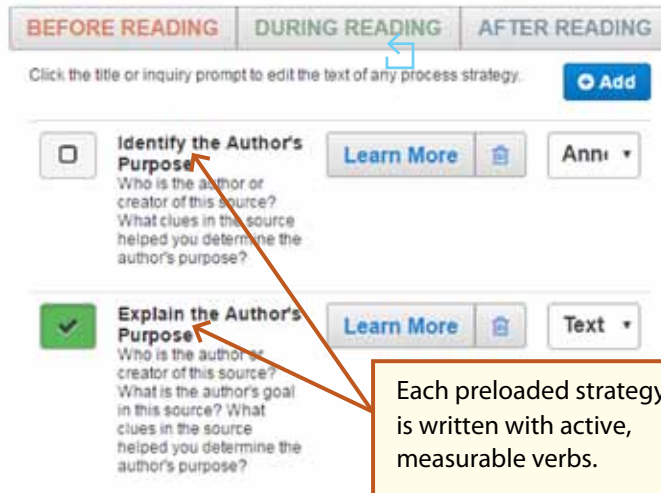
Assessing student learning outcomes



Instructors can use Power of Process as an assessment alternative to standardized tests. Using Power of Process with a rubric allows instructors to assess depth of student engagement with authentic research.

FIGURE 1.12

The preloaded strategies in Power of Process are written so that they can easily align with student learning outcomes

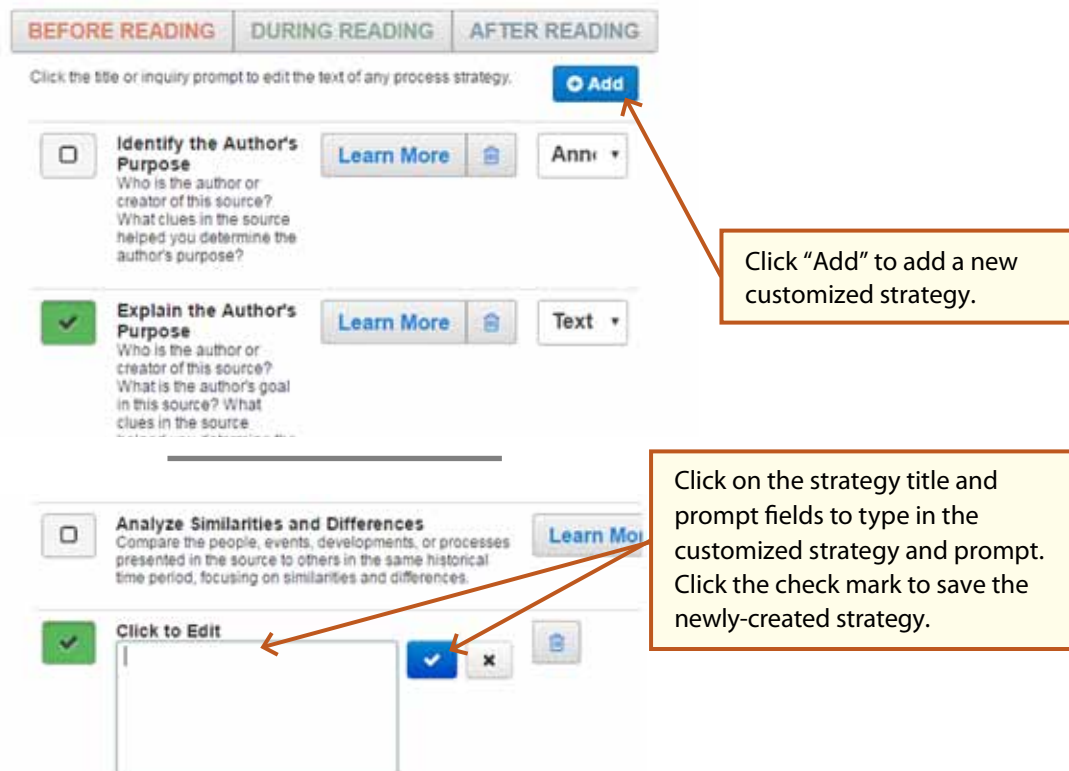


To use outcomes-based assessment with Power of Process, instructors should choose strategies that align with the course student learning outcomes (SLOs). Each preloaded strategy in Power of Process is written with active, measurable verbs.

However, if the preloaded strategies do not match the student learning outcomes of a given course, instructors can revise the strategies and prompts to align with the outcomes that need to be assessed. Instructors also can add completely new strategies or student learning outcomes by clicking “Add” when setting up a new process circle. The process circle should list the student learning outcomes being assessed.

FIGURE 1.13

Add custom strategies to support specific student learning outcomes



After a process circle is created, and includes a title, due date, and instructions to students, the instructor is given the option to send the assignment to other instructors who are using the same Connect Psychology program. In this way, one instructor can establish an SLO assessment assignment and distribute it to other instructors in the department.

FIGURE 1.14

An instructor can create and share an SLO assessment assignment with other faculty

add colleagues

You can share assignments with any Connect instructor who uses *Methods in Behavioral Research*, 13th edition(Cozby).

enter the email address your colleague uses to sign in to Connect:

find colleagues

You can enter up to 10 email addresses; just separate each one with a comma and single space.

Enter the email address that your colleague uses to sign into Connect.

cancel

add

Scoring student learning outcome assessments

Currently Power of Process does not aggregate Power of Process data across a section or a department. However, student and section data can be exported to Excel and used to aggregate data for the department. When using Power of Process to assess student learning outcomes, first score assignments individually. See the section below, "Score assignments," for information about scoring individual Power of Process assignments.



2.

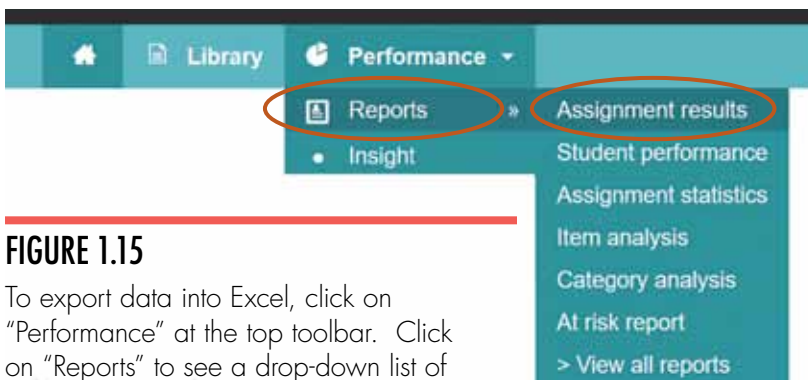
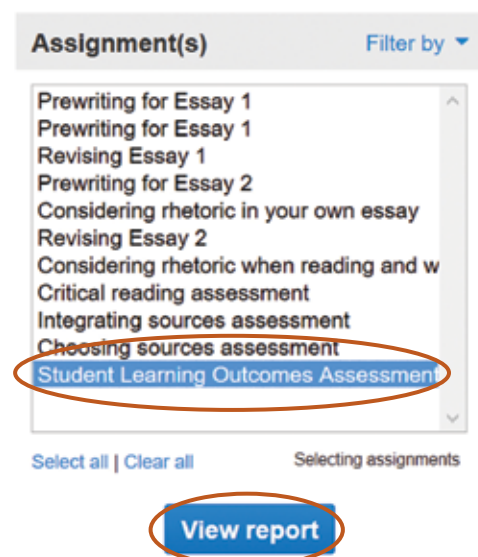


FIGURE 1.15

To export data into Excel, click on "Performance" at the top toolbar. Click on "Reports" to see a drop-down list of report types, and then click on "Assignment results." From the Assignments list, select the assignment designated for the SLO assessment, and then click "View report." The reported data can then be exported to Excel.

3.



Basic Scoring of Power of Process Assignments



When making a Power of Process assignment, instructors enter the total points available for the assignment. And when scoring individual Power of Process assignments, instructors enter a numerical score based on the total points and add any comments.

FIGURE 1.16

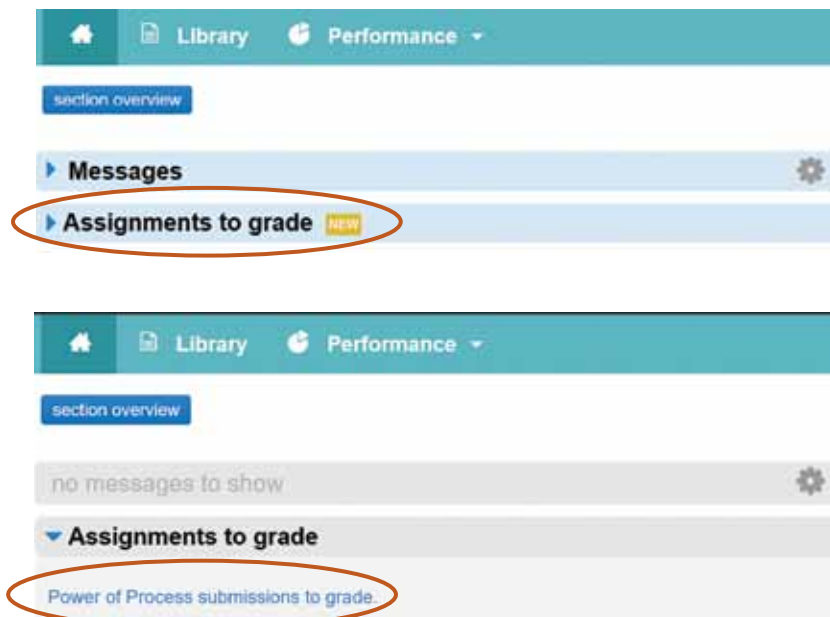
When making a Power of Process assignment, instructors must establish its point value.

The screenshot shows a form for creating a Power of Process assignment. It includes fields for 'Name:' (Assignment Title), 'Instructions:' (Add Instructions), 'Start Date:' (mm/dd/yyyy, 12:00 AM, PDT), 'Due Date:' (mm/dd/yyyy, 11:59 PM, PDT), and 'Points:' (0-1000). An orange arrow points to the 'Points:' field, which is highlighted with an orange box. A text box next to the arrow says: 'Enter the points possible for the assignment. Instructors can enter 0–1000.'

When students submit their assignments, instructors can view, comment on, and score the assignments. Instructors will know assignments are ready to score when the “Assignments to grade” button on their Connect Psychology home page becomes active. Once they click on the “Power of Process” button, instructors will receive a list of students who have submitted assignments.

FIGURE 1.17

Connect notifies instructors when they have Power of Process assignments to grade



Instructors can spend as little or as much time on the assignment as they like. They can enter comments for each strategy, an overall comment that addresses the entire assignment, and/or an overall score. After an instructor clicks “Submit Score,” the student can view the assignment score along with any comments in their Connect Psychology course.

The screenshot shows the submission interface for an assignment. It includes a text box labeled "Overall Comment" with a callout stating: "Click on 'Overall Comment' for a text box where instructors can write a comment for the student." To the right is a score input field with the text "out of 20" and a callout stating: "Enter the assignment's score." Below these are two buttons: "Submit Score" (in blue) and "Save & Exit" (in grey).

Learning Management System Integration



When using a learning management system, such as Blackboard or Canvas, instructors can integrate the LMS with their Connect account so that as Power of Process assignments are scored, that score is sent directly to their LMS gradebook.

	<i>Blackboard</i>	<i>Canvas</i>	<i>Angel, D2L, Moodle, Sakai, Pearson Learning Solutions (eCollege)</i>
<i>Single sign-on</i>	X	X	X
<i>Gradebook sync</i>	X (auto-sync)	X (auto-sync)	X (manual sync)
<i>Deep linking to assignments</i>	X	X	

Program Pedagogy, Theory, and Concept

Research Analysis is Recursive



The reading and writing processes in Power of Process are presented as circles so that students see and experience research analysis as a recursive and active process.

Reading and writing are not linear processes. For example, when we read, we often return to difficult passages or reread interesting sentences. We sometimes skip around, formulating our own ideas about a document even before we've finished reading. We skim some details and return to others that interest us. As we read, we employ different strategies for many reasons. In addition, readers create meaning through patterns (Caine, 2008). The strategies and decisions required as students work through the process circle create a pattern, or framework, of meaning-making activities.

Writing also is recursive. When we write, we often move between stages of the writing process--from prewriting to drafting, from research to revision--as we explore what we want to say.

The Power of Process "Floating" Process Circle



The reading and writing process floats over an uploaded document so that students see the document *through* the reading and writing process. Students' learning is reinforced through pattern-making (Caine, 2008); so in Power of Process, students are shown that the reading and writing process is never separated from a document. Reading and writing are presented to students as interdependent strategies that help them extract meaning from a document. Within Power of Process, students can only read and respond to the text if they click on a reading or writing strategy from the process circle. When students click on a strategy, the circle disappears and they are able to "enter" the text through that strategy.

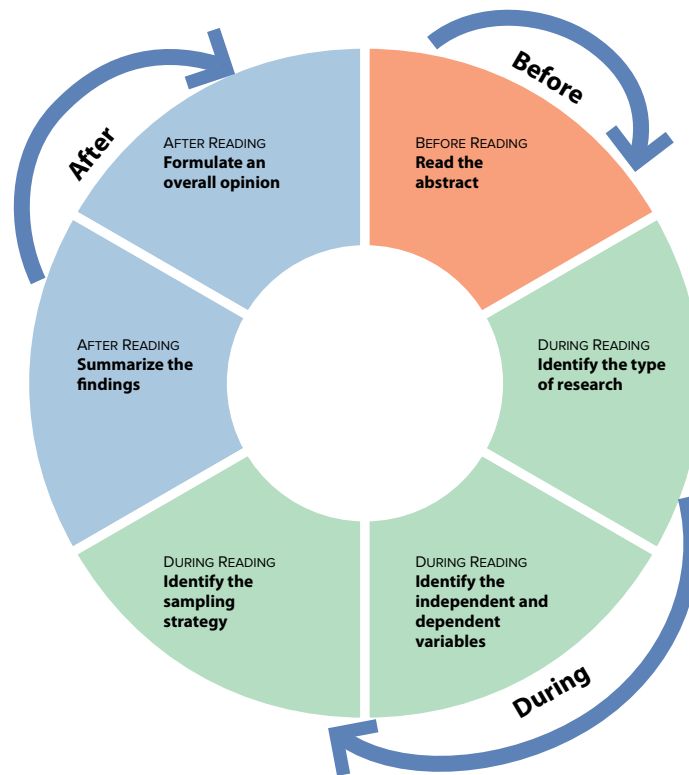
The Importance of Categorizing Strategies into Stages



FIGURE 2.1

Sample process circle illustrating three stages of the process.

In each process circle, strategies are categorized into one of three stages:



Within the processes of reading and writing, there are three stages to which self-monitoring strategies can be applied: before, during, and after (Vacca, 2002). These three stages supply a structure for students so they can concentrate on reading and writing, and apply a strategy when it is most helpful. In addition, low-skilled students engage certain parts of the brain more actively, compared to students with higher skills. This leads to less available working memory for the low-skilled student to use on tasks such as determining when to use strategies (Block & Parris, 2008). For a low-skilled student, direct instruction of when to apply certain strategies can help lessen the amount of working memory that strategic decision making takes, reserving working memory for the student to use the strategy and actively read and write.

The Pedagogical Goal of Power of Process



The goal of Power of Process is for students to become self-regulating, strategic readers and writers. The process circle indicates to students the process order that would be most helpful as they explore a document. However, critical reading and writing are rarely that simple. Because reading and writing are recursive,

and because students benefit from exploring their own decisions and strategies while they read (Baker, 2008), students can click on a strategy multiple times or can enter the assigned document through any strategy in the process circle, and in any order.

Students also can skip any strategy. When students reach the process-reflection step within Power of Process, they will be presented with the process circle and their own path through that process. There they will see with which strategies they engaged, in which order, and how many times. Students then can reflect on whether their strategic choices gave them the engagement they needed and how they might negotiate the reading and writing process the next time they read and write.

The Role of Metacognition



In Power of Process, the “My Process Reflection” page asks students to take a metacognitive view of their reading and writing so that not only are they thinking about the text, they are thinking about their own reading and writing decisions as they negotiated that text.

Reflection can help students become active, strategic readers (Baker, 2008). Often students engage with a text without thinking about *how* they negotiate that text or what decisions they make as they read and write. Such reflection can help students understand why they read and write the way they do, and what they’d like to change when reading and writing in the future.

Power of Process is Flexible



Power of Process is *very* flexible and can be used in multiple levels of college courses, from developmental through upper-division critical thinking and argument courses. The program allows instructors to construct a process circle that will best benefit their students. Instructors can begin with one simple strategy and then add strategies to the process circle, increasing the complexity of critical thinking and of student learning objectives. Alternately, instructors can create a strategic framework specific to an assignment or a learning outcome. Many, many strategies exist, and depending upon the assignment, reading and writing purpose, and discipline expectations, all strategies can help students. However, providing a few selected strategies to students is better than presenting all strategies as options (Pressley, 2000).

Power of Process can be used with or without a supplementary textbook. Instructors can build a process circle that matches strategies taught in any textbook,

so students' classroom and textbook learning are reinforced when they work in Power of Process. The Power of Process program includes the critical reading and writing strategies most often listed in research-based best practices. If instructors are using Power of Process for the first time, or are unsure about which strategies to add to the process circle, the default process circle presents a research-based instructional framework that they can begin using immediately.

Of course, instructors do not have to use the default strategies. As they set up assignments in Power of Process, they will see that each preloaded strategy is presented as a student learning objective. They can choose learning objectives to match the student learning objectives of the course they are teaching.

General Theoretical Framework behind Power of Process

Power of Process was designed within the theoretical framework of sociocognitivism: the context in which a text is read and written about is central to *how* a text is read and perceived, and “meaning” is constructed by students synthesizing their prior knowledge with information learned in the text. A student constructs meaning from a text, and that meaning may differ depending upon the student's prior knowledge and purpose for reading (Cambourne, 2002; Holschuh & Paulson, 2013).

If instructors would like to read more about the theories and research that inform Power of Process, investigate the references listed in Appendices A.

Power of Process Follows Research-based Best Practices

Power of Process is the result of wide reading and analysis of best practices identified through reading- and writing-instruction research. Its theoretical framework is informed by decades of research, and the body of knowledge about reading and writing that has been built through that research.

Power of Process will be of best use to students when it is used within a strategic and comprehensive reading, writing, and analysis program that includes direct classroom introduction of the strategy (Block & Duffy, 2008), along with instruction that incrementally transfers responsibility for the strategy from the instructor to the student (Pressley et al., 1992; Pressley & El-Dinary, 1997).

There are four steps instructors can take to get students comfortable with using strategies on their own:

1. Introduce the strategy's concept and function to their students;
2. Model examples of the strategy's use (Power of Process can be used in a computer-equipped classroom and projected onto a large screen);
3. Practice the strategy as a class or divide students into groups (Power of Process can be used); and then
4. Instruct students to practice the strategy individually, and discuss the experience in class as a group (Power of Process can be used).

To use Power of Process with the steps above, choose and upload to Power of Process a document that is appropriate for the course.

After students have completed the strategies and process reflection, they can submit their work. Instructors can score the students' resulting work or have students print out their assignments and conduct peer review by exchanging and discussing their work and the decisions they made as they negotiated the document. As the students become more adept at negotiating a document, instructors can add increasingly complex strategies to their students' process circle.

Table 2.1 shows the 46 preloaded strategies in Power of Process organized by stage (before reading, during reading, after reading) and presented in order of critical thinking complexity. Each strategy has prebuilt and customizable prompts, and the instructor can select the student response tool type.

TABLE 2.1 46 preloaded strategies in Power of Process organized by stage (before reading, during reading, after reading) and presented in order of critical thinking complexity. Each strategy has prebuilt and customizable prompts, and the student response tool type.

<i>Included in the Default Process Circle</i>	<i>Strategy/learning outcome (In order of critical thinking complexity)</i>	<i>Prompt: prompts can be revised by instructor; additional prompts can be added by instructor</i>	<i>Default tool given to student</i>
Before reading: 13 strategies			
	Consider the title	What does the title make you think the article will discuss? What do you expect to learn from this article based on the title?	Textbox
	Analyze the title	What details about the author(s)' methodology are included in the title? What does the title tell you about the type of design used in this study? What details are not included in the title?	Textbox
	Recognize prior knowledge	What have you already learned that relates to this topic?	Textbox
X	Consider the methodology	What information do you already know about the type of methods used to study this topic area? What limitations can you recognize about the particular methodology used in this article?	Textbox
	Preview the article	Look at how this article is organized (sections, headings, tables, length, etc.). What do you expect to see based on this organization?	Textbox
X	Read the abstract	Read the abstract. Based on the abstract, what do you think you will find in this article?	Annotation
	Highlight new vocabulary	Highlight new vocabulary and key terms. Identify any unfamiliar methodological terms, including analytic procedures that are new to you.	Annotation
	Highlight important information	Highlight important information throughout the article. Identify important scales or measures used in this article.	Annotation
	Determine the end goal	Do the authors of the article intend to describe a sample, predict outcomes, make causal statements, and/or generalize to a population?	Textbox
	Determine the type of data	Does this method require nominal, ordinal, interval, or ratio data? Is the data being collected best analyzed using qualitative or quantitative methods?	Textbox
	Ask questions about the article	What questions would you like to see answered as you read this article?	Textbox

Before reading: 13 strategies, cont.

Included in
the Default
Process
Circle

Strategy/learning
outcome (In order of
critical thinking
complexity)

Prompt: prompts can be revised
by instructor; additional prompts can
be added by instructor

Default tool
given to student

	Consider a question	Evaluate and analyze the article in relation to: (instructor inserts chapter or topic info here).	Textbox
	Skim the article	When you read the subheadings, what do you learn about this article?	Textbox

During reading: 14 strategies

	Define key terms	How are the key terms defined throughout this article? If the key terms include variables, how are these variables being measured? Do the measures accurately capture the scope of the construct?	Annotation
	Type of design	Which type of research design was used? What are the advantages and disadvantages of using this design? How could you have used other designs? What modifications to the variables or sample would need to be made to use another type of design?	Textbox
X	Identify the type of research	Does the article discuss basic or applied research? What clues in the article helped you determine the type of research?	Annotation
	Identify the research question	Highlight the research questions of interest in this study.	Annotation
	Identify the hypothesis(es)	What hypothesis(es) are the author(s) studying in this article?	Textbox
	Explain the approach	Is the basic approach in this study qualitative or quantitative? What evidence supports your answer?	Textbox
X	Identify the indepen- dent and dependent variables	What are the independent variable(s)? What are the dependent variable(s)? Does the research design chosen require true independent and dependent variables?	Annotation
	Operationalize the variables	How are the variables operationalized? Do the measures that are being used accurately capture the construct being measured? What evidence supports your response?	Textbox

During reading: 14 strategies, cont.

<i>Included in the Default Process Circle</i>	<i>Strategy/learning outcome (In order of critical thinking complexity)</i>	<i>Prompt: prompts can be revised by instructor; additional prompts can be added by instructor</i>	<i>Default tools given to student</i>
	Search for confounding variables	Determine whether the research design was compromised by confounding variables. Identify possible confounding variables. What strategies could the authors have taken to minimize these confounding variables? How might these confounding variables have altered this study?	Textbox
	Identify the sampling strategy	What type of sampling strategy was used? What was the final sample size? Does this sample actually represent the population in question?	Textbox
	Explain the sampling strategy	Is this a true or quasi random sample? Does this sample actually represent the population in question? If an experimental design was employed, what type of strategy was used to assign participants to groups? What are the strengths and limitations of using this sampling strategy?	Textbox
	Identify the risks	Locate any potential risks to the research participants in this study. What precautions did the authors take to avoid any ethical issues? What additional precautions should the authors have taken?	Textbox
	Engage in self-explanation	Summarize the methods and procedures from this study in your own words.	Textbox
	Re-read the article	What parts of the article confused you? After re-reading, how do these parts help you to understand and think about the research methods?	Textbox

After reading: 19 strategies

	Recall what you've just read	Without looking at the article again, what information do you remember from this article?	Textbox
	Outline or map the article	Research tends to follow a specific order of events. Recall the order of events from the article starting with the first and ending with the final steps in the research process.	Textbox
X	Summarize the findings	Put the findings of this study into your own words.	Textbox

After reading: 19 strategies, cont.

Included in
the Default
Process
Circle

Strategy/learning
outcome (In order of
critical thinking
complexity)

Prompt: prompts can be revised
by instructor; additional prompts can
be added by instructor

Default tool
given to student

X	Design a follow-up study	Think about how you would choose to follow up this research. What would be the best next study to test this phenomenon? What methodological approach would you use?	Textbox
	Conduct a risk-benefit analysis	What are the risks and benefits inherent in this study as described? Do you think the study is ethically justifiable given your analysis? Why or why not?	Textbox
	Evaluate the ethics	Consider whether the study was ethically sound. Were there any violations of ethical procedures? Consider what could have been done differently to minimize ethical risks to participants.	Textbox
	Describe the level of measurement	Describe the level of measurement used in this study. Generate alternative strategies for measurement that would occur at different levels. What alternative measures could have been used? How could the variables have been operationalized differently?	Textbox
X	Evaluate the internal validity	Analyze the internal validity of this study. What strategies were used to minimize risks to internal validity and what else could have been used to ensure that changes in the dependent variable were attributable to differences in the independent variable?	Textbox
	Identify researcher's key conclusions	What are the researchers' key conclusions of this study? How does the conclusion differ from the results?	Textbox
	Evaluate the external validity	Analyze the external validity of this experiment. In what ways does this study generalize to the real world?	Textbox
	Describe findings	Describe at least one finding from the study that you find particularly interesting or surprising.	Textbox
	Construct a citation	How will you cite this article using APA citation style?	Textbox
	Consider potential improvements	How could this study be improved if there were no financial or practical limits imposed?	Textbox

After reading: 19 strategies, cont.

*Included in
the Default
Process
Circle*

*Strategy/learning
outcome (In order of
critical thinking
complexity)*

*Prompt: prompts can be revised
by instructor; additional prompts can
be added by instructor*

*Default tool
given to student*

	Evaluate the research's quality	Does this study adequately assess the research question or questions of interest?	Textbox
	Ask whether the conclusions are warranted	Are the authors' conclusions warranted based on the findings?	Textbox
	Formulate an overall opinion	Do you agree with the conclusions of the paper? What are the strengths and limitations of this study?	Textbox
	Extend the study	How would you extend this study into new ideas? What is still left unknown about this particular topic?	Textbox
	Generalize the sample	Describe how well you think the sample of participants in this study generalizes to other groups of people (i.e., age, gender, race, socio-economic status, region, etc.).	Textbox
	Re-read the abstract	Does the abstract adequately describe this study and its findings and conclusions? What could be modified about the abstract to provide a better snapshot of this study?	Textbox

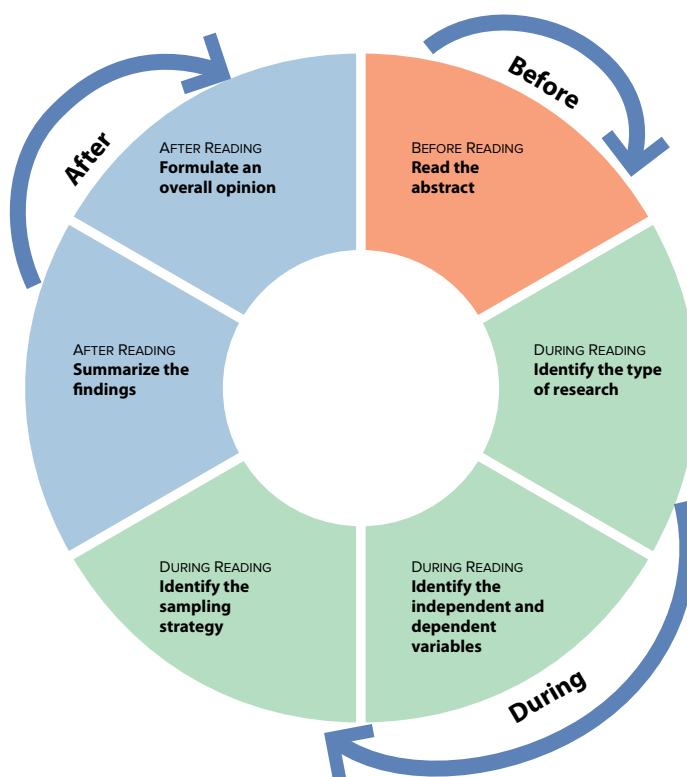
A Closer Look at the Strategies

Before, During, and After Strategies



FIGURE 3.1

Sample process circle illustrating three stages of the process.



Within the processes of reading and writing, there are three stages to which self-monitoring strategies can be applied: before, during, and after (Vacca, 2002). These three stages supply a structure for students so they can concentrate on reading and writing, and apply a strategy when it is most helpful. In addition, low-skilled students engage certain parts of the brain more actively, compared to students with higher skills. This leads to less available working memory for the low-skilled student to use on tasks such as determining when to use strategies (Block & Parris, 2008). For a low-skilled student, direct instruction of when to apply certain strategies can help lessen the amount of working memory that

strategic decision-making takes, reserving working memory for the student to use the strategy and actively read and write.

Choosing Strategies



Instructors have additional pedagogical considerations when assigning students a group of strategies. They may want to keep their students' strategies (and the vocabulary used within those strategies) consistent with those discussed in their course textbook; they may also want to keep their pedagogical approach consistent throughout all class activities.

The importance of purpose, discipline, course textbook, and pedagogy when choosing process strategies are discussed in more detail below.

The Importance of Purpose



Students' purposes for reading and writing direct their process decisions. When students are aware of their purpose, they can choose strategies that help them fulfill that purpose.

Within Power of Process the instructor creates a process circle presenting a group of strategies to students, but students still have decisions to make. They decide which strategies in a given process will be most helpful to them, and they may even add strategies of their own. Instructors may not even realize students are adding or revising strategies, because the process circle itself will not change throughout the assignment. Students also may not be aware that they have added strategies. By noticing and encouraging student investigation into other strategies, instructors help students to strengthen their flexibility.

The Importance of Discipline



Some general strategies, such as locating or evaluating support for a claim, can be applied when reading and writing across academic disciplines. However, each discipline also has developed its own expectations, and for some disciplines, its own process for reading and writing. Students need the flexibility to revise process strategies depending upon discipline expectations. For example, a student who is expected to read and respond to peer-reviewed scientific research may use strategies that direct them to the standard categories for presenting research.

FIGURE 3.2

Sample process circle for peer-reviewed scientific research



Alternately, in the history discipline both the writer's and the reader's biases may determine how an event is viewed. Students reading and writing in the history discipline may be helped by locating and naming biases.

FIGURE 3.3

Sample process circle for a history assignment



Regardless of the discipline, in order for students to revise their processes according to discipline expectations, they first need to be aware of those expectations. Reviewing discipline-specific vocabulary also is helpful for students.

Making Power of Process Consistent with a Course Text

Power of Process can be used with any textbook, and is flexible enough to match any textbook's vocabulary and specific strategies.

The strategies preloaded into Power of Process are framed as student learning objectives. An active verb drives each strategy so that instructors may build process circles that reflect the student learning objectives of a particular course. However, a textbook may phrase strategies differently. Similar strategies might be phrased any number of ways.

Differences in phrasing can lead to confusion. For consistency between Power of Process and a textbook, instructors can customize the process circle by editing the preloaded strategies or writing new strategies so that they match the verbs and phrasing of strategies in the textbook.

Making Power of Process Consistent with Instructional Pedagogy

Power of Process is customizable, so a process circle can be built to align with an instructor's pedagogy.

Power of Process is designed to support how instructors teach. Psychology instructors make multiple pedagogical decisions throughout a term or semester, and the process circle can be customized to accommodate those pedagogical choices and present a consistent, planned pedagogy to students.

Power of Process Assignments

Starting Out with Preloaded Strategies



Power of Process gives instructors the opportunity to customize strategies in order to align with student learning outcomes, discipline expectations, assignment instructions, or any information literacy purpose. However, for instructors who are new to Power of Process, they may want to get comfortable with the program by using the preloaded strategies. There are 46 preloaded strategies in Power of Process. On page 21 [Table 2.1](#) provides information for each strategy, with details related to assignment objectives.

When instructors make a Power of Process assignment, the strategies listed in the before, during, and after categories reflect reading and writing strategies most often listed in research and research-based theoretical literature. These categories will appear after instructors have chosen and assigned a text for the assignment. They also will be shown a default process circle.

A default process circle appears each time instructors make an assignment.

FIGURE 4.1

The default process circle



TABLE 4.1 The strategies, prompts, and student response types for the default process circle.

	<i>Default Strategy</i>	<i>Default Prompt</i>	<i>Default Student Response</i>
<i>Before Reading</i>	Consider the Methodology	What information do you already know about the type of methods used to study this topic area? What limitations can you recognize about the particular methodology used in this article?	Text
	Read the Abstracts	Read the abstract. Based on the abstract, what do you think you will find in this article?	Text
<i>During Reading</i>	Identify the Type of Research	Does the article discuss basic or applied research? What clues in the article helped you determine the type of research?	Annotation
	Identify the independent and dependent variables	What are the independent variable(s)? What are the dependent variable(s)? Does the research design chosen require true independent and dependent variables?	Annotation
<i>After Reading</i>	Summarize the findings	Put the findings of this study into your own words.	Text
	Design a follow-up study	Think about how you would choose to follow up this research. What would be the best next study to test this phenomenon? What methodological approach would you use?	Text
	Evaluate the internal validity	Analyze the internal validity of this study. What strategies were used to minimize risks to internal validity and what else could have been used to ensure that changes in the dependent variable were attributable to differences in the independent variable?	Text

The default framework gives instructors a research-based set of strategies to begin using immediately in the classroom. However, the default circle is only a starting point. Instructors can customize a process circle by clicking and unclicking the preloaded before-, during-, and after-reading strategies.

FIGURE 4.2

Customize the default process circle by selecting (and deselecting) the before, during, and after strategies



Check or uncheck boxes to add and delete strategies from your process circle.

The screenshot shows a user interface for selecting strategies. At the top, there are tabs for 'Before Reading', 'During Reading', and 'After Reading'. Below the tabs, there is a note: 'Click the title or inquiry prompt to edit the text of any process strategy. Note: If you have a student with visual or motor skills accessibility needs, do not use strategies that require annotation.' There is an 'Add' button. Below this, there is a list of strategies with checkboxes and an 'Ann' button next to each:

- ☐ **Define key terms**
How are the key terms defined throughout this article? If the key terms include variables, how are these variables being measured? Do the measures accurately capture the scope of the construct?
- ☐ **Type of design**
Which type of research design was used? What are the advantages and disadvantages of using this design? How could you have used other designs? What modifications to the variables or sample would need to be made to use another type of design?
- ☒ **Identify the type of research**
Does the article discuss basic or applied research? What clues in the article helped you determine the type of research?
- ☒ **Identify the research question(s)**
Highlight the research questions of interest in this study.

Examples of Assignments Using Preloaded Strategies

POP Assignment

Understanding the Basic Format and Structure of a Research Article

FIGURE 4.3

Sample process circle for "Reading to Prepare for Class Discussion" assignment



The process circle shown here introduces students to the basics of how a research article is structured and formatted. The main goal of this assignment is to have students carefully read and understand the information contained in each subheading and section of a research article. This process circle provides students with the strategies they need to comprehend the information within sections of the article, without asking them to engage in deep critical thinking processes.

TABLE 4.2 Strategies, prompts, and student response types for the sample assignment
“Understanding the Basic Format and Structure of a Research Article.”

	<i>Preloaded Strategy</i>	<i>Preloaded Prompt</i>	<i>Default Student Response</i>
<i>Before Reading</i>	Consider the title	What does the title make you think the article will discuss?	Text
	Read the abstract	Read the abstract. Based on the abstract, what do you think you will find in this article?	Text
	Preview the article	Look at how this article is organized (sections, headings, tables, length, etc.). What do you expect to see based on this organization?	Text
<i>During Reading</i>	Identify the type of research	Does the article discuss basic or applied research? What clues in the article helped you determine the type of research?	Text
	Identify the research question(s)	Highlight the research question(s) of interest in this study.	Annotation
	Type of design	Which type of research design was used?	Text
<i>After Reading</i>	Describe the findings	Describe at least one finding from the study that you find particularly interesting or surprising.	Text
	Recall what you just read	Without looking at the article again, what information do you remember from this article?	Text

POP Assignment

Understanding Additional Details of a Research Article and Identifying Potential Ethical Concerns



The process circle detailed here would be an appropriate assignment to help students more fully understand information within a research article. It asks students to articulate that information in their own words and emphasizes potential ethical considerations. The main goal of this assignment is to have students examine and articulate important details of research, identify any ethical considerations, and engage in critical analysis of the ethical concerns identified.

FIGURE 4.4

Sample process circle for “Understanding Additional Details of a Research Article and Identifying Potential Ethical Concerns” assignment

TABLE 4.3 Strategies, prompts, and student response types for the sample assignment
 “Understanding Additional Details of a Research Article and Identifying Potential Ethical Concerns”

	<i>Preloaded Strategy</i>	<i>Preloaded Prompt</i>	<i>Default Student Response</i>
<i>Before Reading</i>	Analyze the title	What details about the author(s)’ methodology are included in the title? What does the title tell you about the type of design used in this study? What details are not included in the title?	Annotation
	Consider the methodology	What information do you already know about the type of methods used to study this topic area? What limitations can you recognize about the particular methodology used in this article?	Text
<i>During Reading</i>	Engage in self-explanation	Summarize the methods and procedures from this study in your own words.	Text
	Explain the sampling strategy	Is this a true or quasi random sample? Does this sample actually represent the population in question? If an experimental design was employed, what type of strategy was used to assign participants to groups? What are the strengths and limitations of using this sampling strategy?	Text
	Identify the risks	Locate any potential risks to the research participants in this study. What precautions did the authors take to avoid any ethical issues? What additional precautions should the authors have taken?	Text
<i>After Reading</i>	Conduct a risk-benefit analysis	What are the risks and benefits inherent in this study as described? Do you think the study is ethically justifiable given your analysis? Why or why not?	Text
	Evaluate the research’s quality	Does this study adequately assess the research question or questions of interest?	Text
	Evaluate the ethics	Consider whether the study was ethically sound. Were there any violations of ethical procedures? Consider what could have been done differently to minimize ethical risks to participants.	Text
	Formulate an overall opinion	Do you agree with the conclusions of the paper? What are the strengths and limitations of this study?	Text

Identifying and Exploring New Information in a Research Article

The process circle shown here is appropriate for exposing students more thoroughly to new information and getting them to ask further questions about this information. The strategies suggested will help students identify key concepts and terms that they need to more fully investigate while reading the article. The main goal of this assignment is to have students identify and explore new key terms, methods, or important concepts discussed in the research article.

FIGURE 4.5

Sample process circle for "Identifying and Exploring New Information in a Research Article" assignment



TABLE 4.4 Strategies, prompts, and student response types for the sample assignment "Identifying and Exploring New Information in a Research Article."

	<i>Preloaded Strategy</i>	<i>Preloaded Prompt</i>	<i>Default Student Response</i>
<i>Before Reading</i>	Analyze the title	What details about the author(s)' methodology are included in the title? What does the title tell you about the type of design used in this study? What details are not included in the title?	Text
	Highlight important information	Highlight important information throughout the article. Identify important scales or measures used in this article.	Annotation
	Highlight new vocabulary	Highlight new vocabulary and key terms. Identify any unfamiliar methodological terms, including analytic procedures that are new to you.	Annotation
	Ask questions about the article	What questions would you like to see answered as you read this article?	Text

TABLE 4.4 *(continued)*

	<i>Preloaded Strategy</i>	<i>Preloaded Prompt</i>	<i>Default Student Response</i>
<i>During Reading</i>	Define key terms	How are the key terms defined throughout this article? If the key terms include variables, how are these variables being measured? Do the measures accurately capture the scope of the construct?	Annotation
	Identify the type of research	Does the article discuss basic or applied research? What clues in the article helped you determine the type of research?	Annotation
	Identify the research questions AND/OR identify the hypothesis(es)	Highlight the research questions of interest in this study AND/OR What hypothesis(es) are the author(s) studying in this article?	Annotation
	Operationalize the variables	How are the variables operationalized? Do the measures that are being used accurately capture the construct being measured? What evidence supports your response?	Text
<i>After Reading</i>	Identify researchers' key conclusions	What are the researchers' key conclusions of this study? How does the conclusion differ from the results?	Text
	Evaluate the research's quality	Does this study adequately assess the research question or questions of interest?	Text

POP Assignment



Examining the Data and Results of a Research Article

The process circle shown here would be appropriate for an assignment that requires students to explore data gathering and analysis within a research article. The main goal is to have students identify and explain both the method by which

the data is gathered and the type of data, and to explain whether the data supports the conclusions of the article. Students will need to engage in critical thinking in order to apply their knowledge of research methods to the example research article. This assignment asks students to read, thoughtfully consider, and then explain the information in their own words.

FIGURE 4.6

Sample process circle for "Examining the Data and Results of a Research Article" assignment



TABLE 4.5 Strategies, prompts, and student response types for the sample assignment
“Examining the Data and Results of a Research Article”

	<i>Preloaded Strategy</i>	<i>Preloaded Prompt</i>	<i>Default Student Response</i>
<i>Before Reading</i>	Consider the methodology	What information do you already know about the type of methods used to study this topic area? What limitations can you recognize about the particular methodology used in this article?	Text
	Determine the type of data	Does this method require nominal, ordinal, interval, or ratio data? Is the data being collected best analyzed using qualitative or quantitative methods?	Text
<i>During Reading</i>	Explain the approach	Is the basic approach in this study qualitative or quantitative? What evidence supports your answer?	Text
	Identify the sampling strategy	What type of sampling strategy was used? What was the final sample size? Does this sample actually represent the population in question?	Text
	Engage in self-explanation	Summarize the methods and procedures from this study in your own words.	Text
<i>After Reading</i>	Describe the level of measurement	Describe the level of measurement used in this study. Generate alternative strategies for measurement that would occur at different levels. What alternative measures could have been used? How could the variables have been operationalized differently?	Text
	Ask whether the conclusions are warranted	Are the authors' conclusions warranted based on the findings?	Text

POP Assignment



Examining the Internal and External Validity of a Research Article

The process circle shown here is appropriate for exploring the internal and external validity of a research article. Students can use the strategies in this process circle to help them practice identifying key components of validity in a research study. They will become more familiar with information presented within a research article and become more proficient at articulating that information in their own words.

FIGURE 4.9

Sample process circle for “Examining the Internal and External Validity of a Research Article” assignment



TABLE 4.6 Strategies, prompts, and student response types for the sample assignment “Examining the Internal and External Validity of a Research Article”

	Default Strategy	Default Prompt	Student Response
<i>Before Reading</i>	Read the abstract	Read the abstract. Based on the abstract, what do you think you will find in this article?	Annotation
<i>During Reading</i>	Search for confounding variables	Determine whether the research design was compromised by confounding variables. Identify possible confounding variables. What strategies could the authors have taken to minimize these confounding variables? How might these confounding variables have altered this study?	Text
	Identify the independent and dependent variables	What are the independent variable(s)? What are the dependent variable(s)? Does the research design chosen require true independent and dependent variables?	Annotation
<i>After Reading</i>	Outline or map the article	Research tends to follow a specific order of events. Recall the order of events from the article starting with the first and ending with the final steps in the research process.	Text
	Evaluate the internal validity	Analyze the internal validity of this study. What strategies were used to minimize risks to internal validity and what else could have been used to ensure that changes in the dependent variable were attributable to differences in the independent variable?	Text
	Evaluate the external validity	Analyze the external validity of this experiment. In what ways does this study generalize to the real world?	Text
	Design a follow-up study	Think about how you would choose to follow up this research. What would be the best next study to test this phenomenon? What methodological approach would you use?	Text

Advancing to Assignments with Customized Strategies



Once instructors are comfortable with building process circles using the 46 preloaded strategies, they may want to revise the preloaded strategies or even add their own strategies to an assignment.

Revising preloaded strategies



☐ Determine the type of data ☒ ☐

Does this method require nominal, ordinal, interval, or ratio data? Is the data being collected best analyzed using qualitative or quantitative methods?

Instructors can revise any of the strategies, changing words, phrasing, or the entire text. When setting up a process circle, click directly on the strategy title to revise the wording.

Write in the revision, click the blue “check” box, and the strategy now appears with the revised wording.

☐ Determine the type of data ☒ ☐

Does this method require nominal, ordinal, interval, or ratio data? Is the data being collected best analyzed using qualitative or quantitative methods?

Instructors can also change any strategy’s prompt. To revise a strategy’s prompt, click directly on the prompt.

Write in the revision, click the blue “check” box, and the prompt now appears with the revised wording.

Adding new strategies



Instructors can add their own strategies so that the process circle they build for their students reflects the exact process they want their students to use. They will see an editable strategy field.

BEFORE READING DURING READING AFTER READING

Click the title or inquiry prompt to edit the text of any process strategy.

☒ Add

Click “Add” to add a completely new strategy or student learning outcome to the assignment’s process circle.

Click on the strategy title and prompt fields to type in a new strategy and prompt. Click the check mark to save the newly created strategy.

☒ ☒ ☐ ☐

Click to Edit

Reusing customized strategies

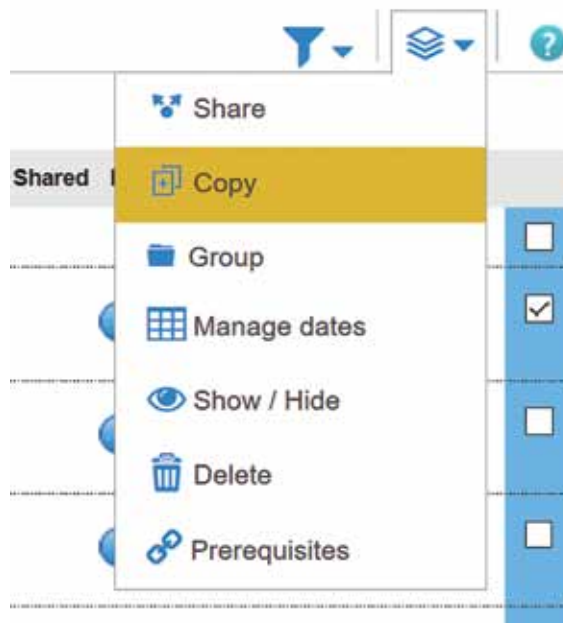


Revised and new strategies are available just in the assignment instructors are making, and are not saved to the program. If they would like to keep these strategies for other assignments, they can copy the assignment and then revise the copy, updating the text, title, instructions, and other information. To copy an assignment, go to the Connect class home page and check the box to the right of the assignment.

Assignments + Add Assignment							
Title	Shared	Info	Start-due	Show/hide			
Research Analysis Assignment #1			01/31/18-02/22/18				
Research Analysis Assignment #2			02/01/18-03/28/18				


Check the box of any assignment to make a copy.

Then click the paper icon at the top of the assignments list. From the drop-down list, click "Copy".




Instructors will be given the choice of whether to share the assignment or copy the assignment. To copy the assignment in order to keep the same customized strategies, click "Copy."

should you share or copy?

 **share your assignments to:**

- ☒ Allow your colleagues to use your versions of the assignments, including edits you make later
- ☒ Control the assignments' questions and policies

[share](#)

 **copy your assignments to:**

- ☒ Send replicas of the assignments to your colleagues
- ☒ Allow your colleagues to control their assignments' questions and policies

[copy](#)


Still not sure? [View a detailed comparison of sharing vs. copying](#)

Or, learn about [sharing](#) and [copying](#) entire sections

Then check the class sections into which they would like to copy the assignment.

Cozby 13e: Power of Process











[copy to my sections](#) [copy to a colleague](#)



Emily Pecora
Cozby 13e

- ☒ Power of Process
- ☐ add a new section to copy the assignment(s) to

They now have made a copy of the assignment. Because the assignment is not yet assigned, it appears in a yellow box. Click on the assignment title and instructors can revise the assignment, keeping or revising the customized strategies.

	Research Analysis Assignment #2		3/28/2018		
	Research Assignment #3		2/12/2018-2/23/2018		
	Research Analysis Assignment #1			not assigned	

Grading and Assessment

Point System



To score Power of Process assignments, instructors enter a numerical score and add any comments. They can choose how many points are available for each assignment. They may choose any number between 0 and 1,000. When making a Power of Process assignment, instructors enter the total points available for the assignment.

FIGURE 5.1

Power of Process screen for entering the point value of an assignment

Name:
Assignment Title

Instructions:
Add Instructions

Start Date:
mm/dd/yyyy 12:00 AM PDT

Due Date:
mm/dd/yyyy 11:59 PM PDT

Points:
0-1000

Enter the points possible for the assignment. Instructors can enter 0-1000 points.

How to Grade and Assess



Video on assessing Power of Process

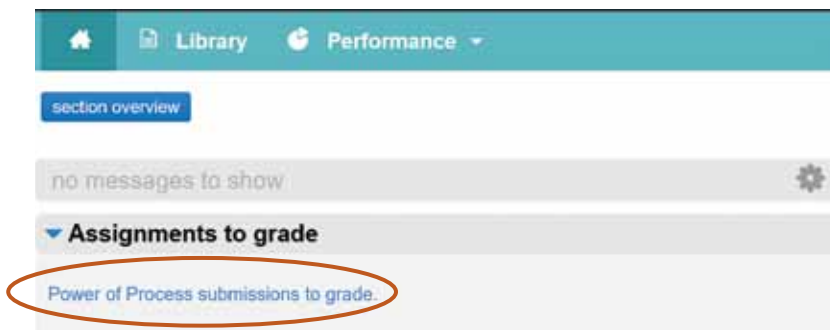
Instructors may view a short video on assessing Power of Process assignments at this link: <https://youtu.be/qZaLUVZ-cAQ>

When students have completed and submitted their assignments, instructors can then view, comment on, and score the assignments. They will know assignments

are ready to score when the “Assignments to grade” button on the Connect home page becomes active.



When instructors click on the button, they will see the types of assignments ready for them to score.



Once they click on the “Power of Process” button, they will receive a list of students who have submitted assignments. Click on the “ready to grade” button, and they will see the student’s submitted work in Power of Process. At this point, instructors can print the student’s entire submission, including annotations and comments, by right clicking on the screen, thus making possible hard-copy grading and/or peer reviewing.



Instructors can spend as little or as much time on the assignment as they like. They can enter comments for each strategy.

They can enter an overall comment, addressing the entire assignment. They also can assign total earned points for that student's assignment.

The screenshot shows a user interface for entering student data. It includes a button labeled 'Overall Comment', a text input field, and a label 'out of 20'. Below these are two buttons: 'Submit Score' and 'Save & Exit'. Two callout boxes provide instructions: one points to the 'Overall Comment' button with the text 'Click on "Overall Comment" for a text box where instructors can write a comment for the student.', and the other points to the score input field with the text 'Enter the assignment's score.'

After instructors click "Submit Score," the student can log onto Connect and view the assignment score and any comments.

Learning Management System integration



If instructors are using a learning management system, such as Blackboard or Canvas, they can integrate the LMS with their Connect account so that as Power of Process assignments are scored, that score is sent directly to their LMS gradebook.

	Blackboard	Canvas	Angel, D2L, Moodle, Sakai, Pearson Learning Solutions (eCollege)
Single sign-on	X	X	X
Gradebook sync	X (auto-sync)	X (auto-sync)	X (manual sync)
Deep linking to assignments	X	x	

Scoring SLO Assessments

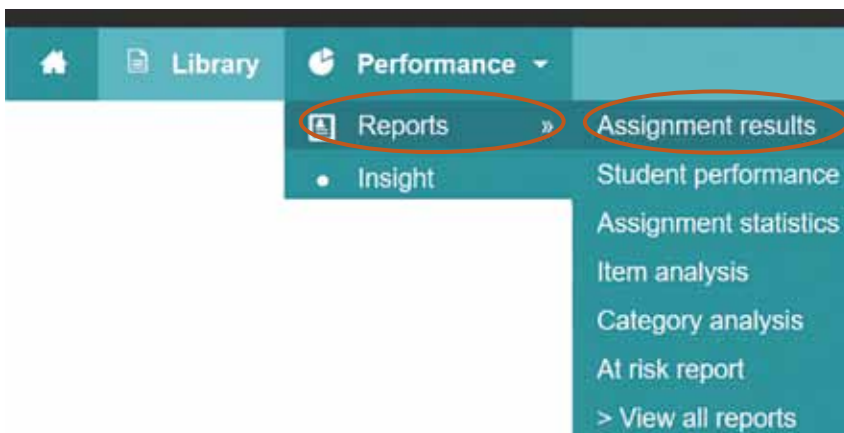


Currently Power of Process does not aggregate Power of Process data across a class or a department. However, instructors can still export student and class data to Excel, and aggregate departmental data using that program. When using Power of Process to assess student learning outcomes, score assignments individually. The section in this guide titled "Score assignments" shows how to score Power of Process assignments. Instructors then can export student or class data into Excel.

To export data into Excel, click on “Performance” at the top toolbar:



Click on “Reports” to see a drop-down list of report types, and then click on “Assignment results.”



Select the assignment designated for the SLO assessment, and then click “View report.”

Instructors can then export the reported data to Excel.



Select the checkboxes on columns you want to export or print

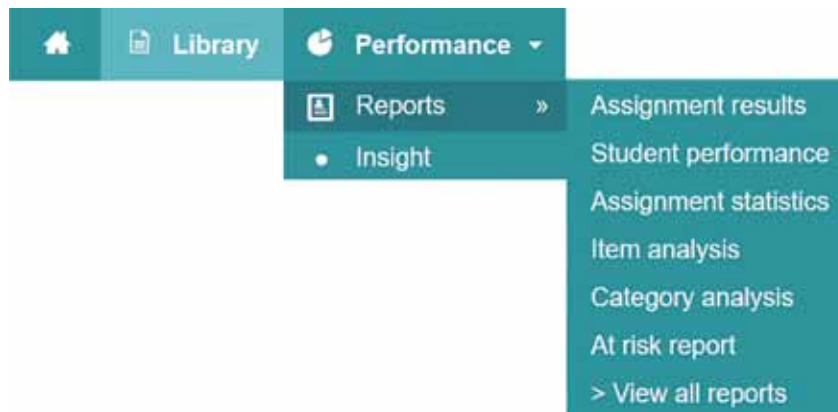
[Learn how to export these results into Blackboard or Blackboard Vista](#) 

Connect Performance Pull Down



After scoring the class’s assignments, instructors can always review, download, or even edit those scores by clicking on Connect’s Performance pull down. On the Connect toolbar they will see the Performance button.





When instructors click on the Performance button, they will see a drop-down list. When they hover the cursor over that drop-down list, another list will drop down. Instructors can now choose to sort Power of Process assignment scores by assignment or by student.

Naming Assignments to Reflect Outcomes



Workload organization often is an important consideration for Psychology instructors, as Psychology classes produce multiple class assignment sets, and departments or institutions require assessment data. One way to organize Power of Process assignments is by naming them to reflect the particular assignment or student learning outcome. Assignment names serve as a quick reference guide when generating data within Connect. When data are needed, the assignments can be located quickly and easily.

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