

Scientific Literacy in a Psychology Curriculum Module

Instructional Materials

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# Overview

Scientific Literacy in Psychology Curriculum Module

A popular activity among psychology instructors is to have students evaluate secondary reports of psychological research. This activity provides students with an opportunity to read about psychological research, analyze its applicability, and evaluate the credibility of the research report. However, this activity could be expanded to provide a richer learning experience for students to learn how to read original research reports, critically and thoroughly evaluate secondary research reports, and analyze the utility of each.

The materials contained in this resource build this activity into a learning module that focuses on scientific literacy. This “Scientific Literacy in Psychology” module can be embedded in most undergraduate psychology courses; at our institution it is embedded in our General Psychology course as part of a hands-on laboratory component. The materials clearly specify student learning objectives that are mapped to the American Psychological Association’s (APA) revised student learning outcomes (APA, 2012). The activities use problem-based learning and are clearly tied to learning objectives and assessments.

The Scientific Literacy in Psychology module contains the following material:

* An outline of the learning outcomes, activities and assessments (see Table 1).
* Detailed descriptions of activities, assignments and corresponding assessments (see below).
* Presentations for the activities using PowerPoint software (see Presentations file).
* A document with student materials for the activities and homework assignments. At the end of the student materials is a rubric for grading a final module report (see Student Materials file).

The module uses and references several media articles and empirical research reports. We have not included those original materials in the module, but full reference citations are provided so the materials can be retrieved.

For each of the activities and assessments we do have answer keys available. Parallel documents –with answers embedded within them – are available by logging into the Society for the Teaching of Psychology website if you are a member ([www.teachpsych.org](file:///C:\Users\ruault\Documents\OTRP\SUBMISSIONS\Peterson%20&%20Sesma%20-%20Sci%20Lit%20IRA\Revised%207-2-13\www.teachpsych.org)). You may also obtain the documents by contacting the first author (see contact information on the title page). *Please do not post these answers online* as students in other courses or at other institutions may find them.

We are interested in collaborating with additional instructors and institutions; please contact us if you would like to collaborate with us. If you would like more information about the module or how we implemented it within our General Psychology curriculum we are happy to provide more information upon request as well.

Table 1.

## *Overview of Learning Outcomes, Activities and Assessments*

|  |  |  |  |
| --- | --- | --- | --- |
| Activity | Module Learning Outcome | APA (2012) Learning Outcome | Assessment |
| 1. Module Introduction | Understand the goal and purpose of the Scientific Literacy in Psychology module. | 5.1 Describe key concepts, principles, and overarching themes in psychology | Minute Paper (informal) |
| Understand the components of scientific literacy. |
| 2. Team Building Exercise | Understand the collaborative nature of research and work in psychology. | 2.2 Promote values that build trust and enhance interpersonal relationships | Minute Paper (informal) |
| 3.3 Interact Effectively with Others |
| 4.4 Enhance teamwork capacity |
| 3. Is Psychology a Science? | Understand the scientific basis of psychology. | 5.1 Describe key concepts, principles, and overarching themes in psychology | Analyzing Media Reports of Psychological Research |
| Describe the scientific method psychologists use to ask and answer questions. | 1.1 Use scientific reasoning to interpret behavior |

|  |  |  |  |
| --- | --- | --- | --- |
| Activity | Module Learning Outcome | APA (2012) Learning Outcome | Assessment |
| 4. Psychological Research Methods | Describe the scientific method psychologists use to ask and answer questions. | 1.1 Use scientific reasoning to interpret behavior | Analyzing Research Methods in Media Reports of Psychological Research |
| Distinguish among types of psychological research. | 1.4 Interpret, design, and conduct basic psychological research |
| 5. Evaluating Sources | Evaluate sources to determine whether the source is credible. | 1.2 Demonstrate psychology information literacy | Guidelines for Evaluating the Credibility of Sources |
| Understand the sources psychologists use to gather information. |
| 6. Finding, Citing and Summarizing Credible Sources | Identify scholarly sources that psychologists use. | 1.2 Demonstrate psychology information literacy | Finding Information – Scavenger Hunt |
| Locate peer-reviewed, empirical research articles using PsycINFO and Google Scholar. | 3.1 Demonstrate effective writing for different purposes |
| Cite sources appropriately using APA Style. |

|  |  |  |  |
| --- | --- | --- | --- |
| Activity | Module Learning Outcome | APA (2012) Learning Outcome | Assessment |
| 7. Orientation to an Empirical Journal Article | Identify sections of empirical research report and key information. | 1.2 Demonstrate psychology information literacy | Research Report Search – Version 2 Worksheet |
| Read and summarize a research article. |
| 8. Summarizing a Research Study and Scientific Writing Style | Identify sections of empirical research report and key information. | 1.2 Demonstrate psychology information literacy | Research Report Search – Version 3 Worksheet and Summary |
| Read and summarize a research article. | 3.1 Demonstrate effective writing for different purposes |
|  | Write summary using scientific writing and APA format that summarizes psychological research and its coverage in popular press. |  |  |
|  |
| 9. Bringing it All Together | Apply knowledge of the scientific method to evaluate media reports of psychological research. | 1.1 Use scientific reasoning to interpret behavior | Module Report |
| 1.2 Demonstrate psychology information literacy |
| Write a summary and critical analysis using scientific writing and APA format that summarizes psychological research and its coverage in popular press. | 3.1 Demonstrate effective writing for different purposes |

# Activity 1: Module Introduction

[Presentation Slides 1-4]

## Student Learning Outcomes:

* Understand the goal and purpose of the Scientific Literacy in Psychology module
* Understand the components of scientific literacy

## Instructions:

* The presentation slide shows a graphic describing the components of scientific literacy. Describe each circle of the graph and tell students that as part of the curriculum module, they will learn how to engage in each component of scientific literacy, embedded within psychology.
* Describe to students how this knowledge and skill will benefit them as a more scientifically literate person.
  + By being able to evaluate a secondary report of research, they will know when a report is credible. Further, they will know how to gather additional information about the research by finding the original report, reading it, evaluating it, and determining whether the research is relevant to them. Thus, if they hear on the radio that people can learn better when they have sufficient sleep, students can ask themselves whether this secondary report is credible. They can then find the original research report to find out specific details about the research and determine whether the study was valid and whether the research results could apply to their situation.
  + The media report “Learning Works Best When you Rest” at Psych Central http://psychcentral.com/news/2012/03/25/learning-works-best-when-you-rest/36480.html describes a research study on how sleep can affect memory. According to the secondary research report, sleeping just after learning new material is beneficial.
  + The original research report by Payne et al. (2012; full citation below) describes the entire study, which was conducted on college students. Thus, this research is likely applicable to traditional-aged college students, but psychologists do not know if it would help an older adult experiencing memory loss.
    - Payne, J. D., Tucker, M. A., Ellenbogen, J. M., Wamsley, E. J., Walker, M. P., Schacter, D. L., & Stickgold, R. (2012). Memory for semantically related and unrelated declarative information: The benefit of sleep, the cost of wake. *PLoS One, 7*(3), e33079.

<http://dx.doi.org/10.1371/journal.pone.0033079>

## Assessment:

* Minute Paper (Informal assessment in which students engage in a free-writing activity addressing a question/writing prompt. Students are given 1-2 minutes to write.): “What is scientific literacy and how can being scientifically literate help you?”
* Instructors can decide whether to award points for this assessment. Typically it is used to understand whether students were engaged and what they understood from the activity; we do not award points for completing minute papers.

# Activity 2: Team Building: Collaboration is Essential in Science!

[Presentation Slides 5-10]

## Student Learning Outcomes:

* Understand the collaborative nature of research and work in psychology
* Get to know classmates

## Instructions:

* Forming Teams – Similarities and Differences
  + Divide students into teams (five per group).
  + Instruct students to generate a list of five characteristics/experiences they all have in common (it should go beyond “we all have hair” to something more substantive).
  + Then they should generate a list of five characteristics/experiences (one for each person) that is unique about each person (e.g., only one person in the group has lived in another country).
  + Finally, they should pick a team name.
* Psychology Undercover!
  + Open the PowerPoint presentation called “Undercover.” Explain that you will slowly reveal a picture of someone or something related to psychology.
  + Within their teams, students should whisper among themselves to come to an answer. When they agree upon an answer, *all* members of the team must raise their hands. The instructor will then randomly call on a team member to give the answer – so everyone should know the answer before raising hands!
  + The team to get the most points by the end of the game wins.
* Collaboration: In psychology and other science disciplines, it is essential to work together.
  + Researchers all bring unique knowledge, skills, and perspectives to research. By collaborating, researchers conduct studies more effectively and provide greater benefit to society. For instance, in studying test anxiety it can be helpful to have researchers from cognitive psychology (focus on attention and memory), educational psychology (focus on student learning processes), clinical psychology (focus on anxiety and psychopathology) and counseling psychology (focus on therapeutic approaches) all working together to produce an effective intervention.
  + Researchers must communicate with one another effectively. In teams students were limited to whispering with one another – in the “real world” people can communicate in many more ways. However, what is important is to communicate clearly and share all information so that everyone can work together.

## Assessment:

* Minute Paper (Informal assessment in which students are prompted to engage in a free-writing activity addressing a question/writing prompt. Students are given 1-2 minutes to write.): What are the benefits of collaboration in conducting scientific research?
* Instructors can decide whether to award points for this assessment. Typically it is used to understand whether students were engaged and what they understood from the activity; we do not award points for completing minute papers.

# Activity 3: Is Psychology a Science?

[Presentation Slides 11-22]

## Student Learning Outcomes:

* Understand the scientific basis of psychology
* Describe the scientific method psychologists use to ask and answer questions

## Materials:

Tall, dark and stable. (2012, July 14). *The Economist.* Retrieved from <http://www.economist.com/node/21558553>

## Instructions:

* Have students read the short article “Tall, Dark and Stable” from *The Economist* magazine (cited above). In partners, students should:
  + Summarize the article.
  + Answer the question “Is this an example of scientific research? Why/why not?”
  + Answer the question “Is psychology a science?”
* Mini-lecture:
  + Review the characteristics of science
  + Review the scientific method
  + Review research ethics
* Return to *The Economist* article. In pairs, students should determine the steps the psychologists took in conducting their research study – did they follow the scientific method?
* Debrief as a large group:
  + What steps did the psychologists take in conducting this research study? Did they follow the scientific method? Why or why not?
  + Is psychology a science? YES!

## Assessment:

* Assign students to read the article (below) and complete the Analyzing Media Reports of Psychological Research worksheet (in Student Materials). Note that you should be explicit with students regarding your expectations on collaboration (i.e., is it okay for students to work on the assignment together, or do you expect them to complete it independently).

Parents can play active role in making teens interested in math and science. (2012, July 12). Retrieved from <http://in.news.yahoo.com/parents-play-active-role-making-teens-interested-math-050712211.html>

* Grading rubric:

|  |  |
| --- | --- |
| Points | Quality of Assignment |
| 3 | Worksheet is submitted and all answers are accurate. |
| 2 | Worksheet is submitted but some elements are inaccurate. |
| 1 | Worksheet is submitted but it is incomplete. |
| 0 | Not turned in/not turned in on time |

# Activity 4: Psychological Research Methods

[Presentation Slides 23-37]

## Student Learning Outcomes:

* Describe the scientific method psychologists use to ask and answer questions.
* Distinguish among types of psychological research.

## Materials:

Parents can play active role in making teens interested in math and science. (2012, July 12). Retrieved from <http://in.news.yahoo.com/parents-play-active-role-making-teens-interested-math-050712211.html>

Teen sex study links age at first sexual experience to romantic relationships in adulthood. (2012, Oct 19). Retrieved from <http://www.huffingtonpost.com/2012/10/19/teen-sex-first-experience-romanticrelationships_n_1983291.html>

## Instructions:

* Lead a discussion: Psychologists use a variety of strategies, or methods, for studying phenomena. Some of those methods are observation, survey, experiment, archive examination, and qualitative research.
  + What methodology was used in the “Parents Can Play…” research study? (This article was assigned for homework as part of the previous activity.)
  + How do students know this was the method the researchers used?
  + How could researchers answer the same question using another research method? (I.e., the study used an experiment, so talk about how this research question could also be answered with a qualitative study, with a survey, with observation, or with archival data.)
* Engage students in a group activity: Imagine you are a psychologist and you hypothesize that students who study with peers learn better than students who study individually.
  + Jigsaw, Part One: Form four groups, each of which must design a study that will test the hypothesis. Assign each group a different research method (e.g., Group 1 will use observation, Group 2 will use an experiment, Group 3 will use a survey, Group 4 will use qualitative methods). Refer students to the questions in the student materials that guides them in designing a study for their specific research method.
  + Jigsaw, Part Two: Form new groups composed of one member of each of the old groups; that is, each member of the new group proposed to test the hypothesis with a different research method. Students take turns sharing their proposed method. As a group, they agree upon the best method for testing the hypothesis.
  + Large group: Each group shares its proposed method. The instructor should model how to share the design by sharing a method for testing the hypothesis using archival research.
* Lead a discussion: Ask students the strengths and weaknesses of observational, experimental, survey, archival, and qualitative studies.

## Assessment:

* Assign students to read the article (below) and complete the Analyzing Research Methods in Media Reports of Psychological Research worksheet (in Student Materials). Note that you should be explicit with students regarding your expectations on collaboration (i.e., is it okay for students to work on the assignment together, or do you expect them to complete it independently).

Teen sex study links age at first sexual experience to romantic relationships in adulthood. (2012, Oct 19). Retrieved from <http://www.huffingtonpost.com/2012/10/19/teen-sex-first-experience-romantic-relationships_n_1983291.html>

* Grading rubric:

|  |  |
| --- | --- |
| Points | Quality of Assignment |
| 3 | Worksheet is submitted and all answers are accurate. |
| 2 | Worksheet is submitted but some elements are inaccurate. |
| 1 | Worksheet is submitted but it is incomplete. |
| 0 | Not turned in/not turned in on time |

# Activity 5: Evaluating Sources

[Presentation Slides 38-56]

## Student Learning Outcomes:

* Evaluate sources to determine whether the source is credible.
* Understand the sources psychologists use to gather information.

## Materials:

Kille, D. R., Forest, A. L., & Wood, J. V. (2013). Tall, dark, and stable: Embodiment motivates mate selection preferences. *Psychological Science, 24*, 112-114. [http://dx.doi.org/ 10.1177/0956797612457392](http://dx.doi.org/%2010.1177/0956797612457392) (For the instructor’s reference.)

Tall, dark and stable (2012, July 14). *The Economist.* Retrieved from <http://www.economist.com/node/21558553>

Petronis, L. (2012, June 25). Feeling depressed? This may be the thing you need to feel happier (Hint: It's not money). *Glamour*. Retrieved from <http://www.glamour.com/health-fitness/blogs/vitamin-g/2012/06/feeling-depressed-this-may-be.html>

Wilson, J. (2012, July 2). Does your teen have a severe anger disorder? Retrieved from <http://thechart.blogs.cnn.com/2012/07/02/does-your-teen-have-a-severe-anger-disorder/>

## Instructions:

* Discussion:
  + What makes a media report credible? List the specific qualities students look for when determining a source’s credibility.
  + Why is it important to evaluate the credibility of your sources? Answer: so you know whether you can trust the information.
* Partner Activity:
  + Assign students a partner and ask them to more thoroughly evaluate the credibility of the media report “Tall, Dark and Stable” using the guidelines in the student materials. Students will go online to do this portion of the activity. If time is short, assign students just three questions, but make sure that across pairs, students cover all of the questions.
  + Discussion: (answers are embedded in the Presentation file, Slides 43-52)
    - Each pair of students shares its answers on whether the media report on the research was credible.
    - Reactions to the guidelines – was it easy to find this information? Does it change students’ opinions of the research that was conducted?
* Mini-lecture: What sources do psychologists use?
  + Describe empirical versus nonempirical reports.
  + Describe peer review.

## Assessment:

* + Students will complete the full Guidelines for an article on their own using one of the two articles below. This time, give students the title of the article and the news source and instruct them to find it themselves to practice their information literacy skills. You can assign half of the class to each media report listed below, or choose just one to use.
  + Demonstrate for students how to find an online article when given a title and news source, such as “What Do Aliens, Climate Change and Princess Di Have in Common?” on NPR. (Do not use their homework assignment for the demonstration.)

Petronis, L. (2012, June 25). Feeling depressed? This may be the thing you need to feel happier (Hint: It's not money). *Glamour*. Retrieved from http://www.glamour.com/health-fitness/blogs/vitamin-g/2012/06/feeling-depressed-this-may-be.html

Wilson, J. (2012, July 2). Does your teen have a severe anger disorder? Retrieved from <http://thechart.blogs.cnn.com/2012/07/02/does-your-teen-have-a-severe-anger-disorder/>

* Grading rubric:

|  |  |
| --- | --- |
| Points | Quality of Assignment |
| 3 | Worksheet is submitted and all answers are accurate. |
| 2 | Worksheet is submitted but some elements are inaccurate. |
| 1 | Worksheet is submitted but it is incomplete. |
| 0 | Not turned in/not turned in on time |

# Activity 6: Finding, Citing, and Summarizing Credible Sources

[Presentation Slides 57-81]

## Student Learning Outcomes:

* Identify scholarly sources that psychologists use.
* Locate peer-reviewed, empirical research articles using PsycINFO and Google Scholar.
* Cite sources appropriately using APA Style

## Instructions:

* **Citing Sources:** Whenever writers summarize someone else’s work, they need to give the author credit for his or her work. How should students do this? Follow APA Style.
  + Demonstrate: In-text and reference citations in APA style. One demonstration is in the Presentation file (Slide 61); however, instructors may also want to use “Why and How to Write APA-Style Citations in the Body and Reference Section of Your Papers (2010)” by Drew C. Appleby (http://teachpsych.org/resources/Documents/otrp/resources/appleby10.pdf).
  + Practice: In pairs, have students complete the APA Citation Style Exercise in the student materials. Then go over the answers (see Presentation file Slides 63-69) in the large group.
* **Summarizing Sources with Integrity:** 
  + Mini-lecture: What is plagiarism? Using someone else’s thoughts and words without giving the original author credit; copying someone else’s words, word-for-word into one’s own work and not putting those exact words in quotation marks and not citing the original author; paraphrasing what someone else said, but not citing the original author. To avoid plagiarizing, write everything in one’s own words and cite the original source at the end of that sentence.
  + Practice: In pairs, have students complete the Plagiarism activity in the student materials. Then go over the answers in the large group (see Presentation Slides 70-77).
* **What Are Credible Sources in Psychology and How Do We Find Them?** Psychologists use empirical articles (articles that describe a study in which data were collected and analyzed) and the peer review process to ensure the research and articles are of high quality. How do students find empirical, peer-reviewed articles?
  + Demonstration: (Note, you may need to use your own article for an example for this demonstration, depending upon what is available in your library. Also, this exercise uses PsycINFO, but you may want to vary the database so it matches what you prefer students to use and what is available through your library. This exercise also uses Google Scholar because most students are familiar with Google and they may feel more comfortable searching for something new (scholarly articles) with a search engine that is familiar to them. We recommend using two search engines for this exercise as it helps students understand there is more than one way to do scholarly searches, and also see differences between two search engines.)
    - Start with the popular press article that was in the APA Citation Style Exercise (“People More Likely to Guzzle Beer Served in Curved Glasses”) <http://health.usnews.com/health-news/news/articles/2012/09/04/people-more-likely-to-guzzle-beer-served-in-curved-glasses> and look the article up on US News & World Report’s website. Skim the article, and show students how they can find the original journal in which the research was published. (Highlight the researcher’s last name and ask students what key word might be helpful to search for with the researcher’s name – in this case – beer).
    - Go to Google Scholar [scholar.google.com](http://scholar.google.com/) and type in “Attwood and beer.” When the results appear, click on the “Since 2012” link on the side bar, and the first link should get to the article.
    - Go to your institution’s library page and search for the journal *PLoS One*. Show students how to access the article within that journal.
    - Go to PsycINFO and show students how to search for the author using her last name (Attwood) and first initial (A) and find the article that way as well.
    - Go back to Google Scholar and show students how to do a general search, beginning with a key word (e.g., see if you can find similar articles on beer drinking).
    - Go back to PsycINFO and show students how to do a general search, beginning with a similar key word (e.g., see if you can find similar articles on beer drinking).
  + Why is it important for students to have this knowledge and skill? Answer: so that if they read a media report and find it lacking in substance or credibility, they can find the original source themselves.

## Assessment:

* Students should complete the Finding Information – Scavenger Hunt in the student materials.
* Please note that this assignment is only a partial assessment of the learning outcomes for this activity. Assignments for Activities 7-11 will more fully assess students’ ability to summarize and cite research in APA style.
* Grading rubric:

|  |  |
| --- | --- |
| Points | Quality of Assignment |
| 3 | Finding Information – Scavenger Hunt worksheet is complete, accurate, and of high quality. |
| 2 | Finding Information – Scavenger Hunt worksheet is complete but not all of the answers are accurate and/or of high quality. |
| 1 | Finding Information – Scavenger Hunt worksheet is incomplete. |
| 0 | Not turned in/not turned in on time |

# Activity 7: Orientation to an Empirical Journal Article

[Presentation Slides 82-109]

## Student Learning Outcomes:

* Identify sections of empirical research report and key information.
* Read and summarize a research article.

## Materials:

Robinson, K. (2005). Effects of environmental factors on the health of college students. *Psi Chi Journal of Undergraduate Research, 10*(1), 3-8.

Bushman, B. J., & Anderson, C. A. (2009). Comfortably numb: Desensitizing effects of violent media on helping others. *Psychological Science, 20,* 273-277. [http://dx.doi.org/ 10.1111/j.1467-9280.2009.02287.x](http://dx.doi.org/%2010.1111/j.1467-9280.2009.02287.x)

## Instructions:

* Mini-lecture:Psychologists communicate and advance the science of psychology by publishing empirical research reports in peer-reviewed journals.
  + Review: What is an empirical research study?
  + Review: What is peer review?
  + Show students what a journal looks like – show them a hard copy and also show them how to find an electronic journal using the library website.
* Discuss the sections and terminology (e.g., Abstract, Materials, Procedure) of an APA style research report.
  + Practice: Give students Robinson (2005), an empirical, peer-reviewed article from an undergraduate student journal. They should go through the Research Report Search in the student materials and spend about 20 minutes trying to find the answers.
  + Discussion:
    - Go over each section of a journal article – “what goes where?”
    - Review the answers to the questions, pointing out where information was obtained for each question (see Presentation Slides 91-106).
    - Ask what they learned about the research and the research question.
* Debrief: Why is being able to locate information in a peer-reviewed empirical article an important skill for students to have? Answer: so they can read and understand original research and evaluate whether media reports are accurately reporting information.

## Assessment:

* + Assign students to read the article below and complete a second Research Report Search (Version 2) in their student materials. Note for students that the article describes *two* research studies. Students should read the entire article (i.e., both studies) and answer the worksheet questions.

Bushman, B. J., & Anderson, C. A. (2009). Comfortably numb: Desensitizing effects of violent media on helping others*. Psychological Science, 20*, 273-277. [http://dx.doi.org/ 10.1111/j.1467-9280.2009.02287.x](http://dx.doi.org/%2010.1111/j.1467-9280.2009.02287.x)

* + Grading rubric:

|  |  |
| --- | --- |
| Points | Quality of Assignment |
| 3 | Research Report Search – Version 2 worksheet is complete, accurate and of high quality. |
| 2 | Research Report Search – Version 2 worksheet is complete but not all of the answers are accurate and/or of high quality. |
| 1 | Research Report Search – Version 2 worksheet is incomplete. |
| 0 | Not turned in/not turned in on time |

# Activity 8: Summarizing a Research Study and Scientific Writing Style

[Presentation Slides 110-124]

## Student Learning Outcomes:

* Identify sections of an empirical research report and key information.
* Read and summarize a research article.
* Write a summary using scientific writing and APA format that summarizes psychological research and its coverage in the popular press.

## Materials:

Bushman, B. J., & Anderson, C. A. (2009). Comfortably numb: Desensitizing effects of violent media on helping others. Psychological Science, 20, 273-277. [http://dx.doi.org/ 10.1111/j.1467-9280.2009.02287.x](http://dx.doi.org/%2010.1111/j.1467-9280.2009.02287.x)

Gray, K. (2012). The power of good intentions: Perceived benevolence soothes pain, increases pleasure, and improves taste. *Social Psychological and Personality Science, 3,* 639-645. [http://dx.doi.org/ 10.1177/1948550611433470](http://dx.doi.org/%2010.1177/1948550611433470)

Petronis, L. (2012, June 25). Feeling depressed? This may be the thing you need to feel happier (Hint: It's not money). *Glamour*. Retrieved from <http://www.glamour.com/health-fitness/blogs/vitamin-g/2012/06/feeling-depressed-this-may-be.html>

Robinson, K. (2005). Effects of environmental factors on the health of college students. *Psi Chi Journal of Undergraduate Research, 10*(1), 3-8.

## Instructions:

* Introduction: In Psychology (and other sciences) empirical research studies are published in peer-reviewed journals. Other psychologists read the articles, critique the studies, and then use those studies to propose new studies that will answer the research question in another way, or answer a new research question that stems from that research study. This is how the science of psychology advances – building on others’ work by answering research questions that arise from their research. When proposing research studies, psychologists write literature reviews – they read multiple articles about research studies, summarize and critique them, and then propose a new study that builds on all of the studies they read, summarized, and critiqued. We’re now going to work on summarizing research articles.
* Summarizing Research Studies Practice: Instruct students, in pairs, to write a summary of Bushman and Anderson’s (2009) study using their answers to the Research Report Search – Version 2 questions.
  + Review: How did it go? What was difficult?
  + On a scale from 1 to 10 where 1 = *not at all confident* and 10 = *completely confident,* how confident are you that your summary contains no plagiarism?
  + Did you cite the authors in your summary? If necessary, review how to cite authors using in-text citations and how to create a reference citation.
  + Remind students that plagiarism occurs when an author uses passages from an original source without giving the original source credit. Take 2-3 sentences from the discussion section of the article assigned for homework and, as a group, summarize the sentences without plagiarizing.
  + Show students the sample summary below so students can see how one could summarize the article, pointing out that the most important information from each section of the research report is included in the summary.
  + Why is being able to read and summarize research from primary sources an important skill? Answer: so that students can understand original research and verify the accuracy of media reports.

**Sample Summary**

* Scientific Writing Style introduction: In your readings so far, you have probably noticed a difference in the writing style a psychologist uses when reporting results in a journal article compared to the writing a reporter uses in a magazine to report the results of a psychologist’s study.
  + Practice: With a partner compare two pieces of writing: a media report (Petronis, 2012) and an empirical research report (Robinson, 2005) using the chart Scientific Writing Comparison in student materials.
  + Review similarities/differences with descriptions of scientific writing style.
  + Why is it important to write using this scientific writing style? Answer: to communicate credibly and respectably within psychology.

## Assessment:

* Assign students to read the article cited below and complete the Research Report Search – Version 3 worksheet.

Gray, K. (2012). The power of good intentions: Perceived benevolence soothes pain, increases pleasure, and improves taste. *Social Psychological and Personality Science, 3,* 639-647. [http://dx.doi.org/ 10.1177/1948550611433470](http://dx.doi.org/%2010.1177/1948550611433470)

* Students should write a summary of the article, using the answers they gave to the Research Report Search – Version 3 worksheet. Students should be careful to summarize the article in their own words (they should avoid quoting the original source), cite the source appropriately in APA style, and write in scientific writing style. They should use the module report rubric as a guide.
* Grading rubric:

|  |  |
| --- | --- |
| Points | Quality of Assignment |
| 3 | Research Report Search – Version 3 worksheet is complete, accurate and of high quality and the summary is primarily in the “Masterful” column of the Module 1 report rubric. |
| 2 | Research Report Search – Version 3 worksheet is complete but is not entirely accurate and the summary is primarily in the “Skilled” or “Developing” column of the Module 1 report rubric. |
| 1 | Research Report Search – Version 3 worksheet is missing or incomplete and the summary is missing or primarily in the “underperforming” column of the Module 1 report rubric. |
| 0 | Not turned in/not turned in on time. |

# Activity 9: Bringing it All Together

[Presentation Slides 125-148]

## Student Learning Outcomes:

* Apply knowledge of the scientific method to evaluate media reports of psychological research.
* Write a summary and critical analysis using scientific writing and APA format that summarizes psychological research and its coverage in popular press.

## Materials:

Texting, social networking and other media use linked to poor academic performance. (2013, April 11). *Science Daily.* Retrieved from <http://www.sciencedaily.com/releases/2013/04/130411131755.htm>

Gray, K. (2012). The power of good intentions: Perceived benevolence soothes pain, increases pleasure, and improves taste. *Social Psychological and Personality Science, 3,* 639-647. [http://dx.doi.org/ 10.1177/1948550611433470](http://dx.doi.org/%2010.1177/1948550611433470)

Wood, J. (2012, January 19). The power of good intentions. *Psych Central.* Retrieved from <http://psychcentral.com/news/2012/01/19/the-power-of-good-intentions/33848.html>

## Instructions:

* Introduction: We’ve learned about the steps of the scientific method, the types of research methods used in psychology, how to evaluate sources, and how to write in scientific writing style and cite sources appropriately. Let’s review:
* Steps of the scientific method
* Types of research methods used in psychology and strengths and weaknesses of each.
* Assign students to read the media report “Texting, Social Networking and Other Media Use Linked to Poor Academic Performance” and answer the Media Report and Research Methods Comparison questions in their student materials.
  + Allow students to do the exercise in groups, or compare answers with partners if they work on it individually.
  + Go over the answers (on the Presentation slides).
  + Sum it up: When posing a hypothesis and selecting a research method, researchers need to make many decisions about practical issues such as time and cost of collecting data, as well as methodological decisions about how to select a sample, what questions to ask, and whether they will be able to make causal conclusions. No one research method is the perfect means to answer a question as they all have disadvantages. That is why researchers will spend many years conducting various research studies to answer the same question; using more than one method to answer a research hypothesis is typically the best approach.
* While students are working on the exercise, we recommend meeting with students individually to discuss their summary of the media report. We recommend having students answer these questions before coming to class, as their answers can focus and guide the writing conferences:
  + What was easiest about writing your summary?
  + What was most difficult about writing your summary?

**Assessment:**

* Module Report with three sections:
  + Summary and evaluation of original research report
  + Summary and evaluation of a secondary report of the research
  + Synthesis in which the two summaries are compared
* The module report builds upon the previous assignment. Thus, students should now:
  + Revise their summary of the original research article*, including a critique of the research study*. What are limitations to the study the authors didn’t acknowledge? Were there causal conclusions that were inappropriate? Do you think the method appropriately tested the research question? (Although students have already written the summary once, we recommend having them revise it again, as writing is a process of constant revision.)
  + Read, summarize and evaluate the media report: “The Power of Good Intentions” from PsychCentral.com.
  + Write a synthesis that compares the media report to the original research article. Did the media report clearly and accurately describe the research? Were there any distortions in generalizing the results? Was the media report summarized objectively without bias?
* The assignment will be graded with the module report rubric (in student materials).