

## **Psychology Knowledge Revision Campaign: Integrating Refutation-Style Teaching Materials Into A Classroom-Based Research Project**

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### **Abstract**

Commonsense beliefs are barriers for learning scientific information. Psychology suffers from a “preexisting bias” problem in which people are particularly vulnerable because of emotionally held beliefs about human behavior<sup>44</sup>. Common psychological misconceptions include: we use 10% of our brains, memory is like a tape recorder, and we are subliminally persuaded to purchase products. One known method for knowledge revision is to provide learners with refutation information about misconceptions. A refutation explains that a misconception is false and then provides scientific information describing why. Refutation-style texts have recently been considered a viable strategy for changing psychological misconceptions<sup>19 & 27</sup>. Across previous experiments, it has been found that students’ knowledge for common psychological misconceptions can be revised after reading refutation-style texts in the lab<sup>31</sup>. The current project aims to integrate the preceding laboratory work with real-world teaching methods to assist in knowledge revision for these misconceptions. Introductory Psychology participants took a pre-test, which consisted of 20 true/false statements; half related to psychology misconceptions and half psychology facts (e.g. “if you’re unsure of your answer when taking a test, it’s best to stick with your initial hunch”). Next participants viewed 10 posters, each for 1 minute. Each poster contained a refutation-style text campaign to attempt to revise knowledge for psychology misconceptions. Observations emulated the type of self-paced reading that occurs when a student reads textbooks. Then each misconception refutation poster was explained for two minutes to resemble the information teachers might give in a classroom setting. Following the poster part of the experiment, participants took a post-test in a true/false format. However, this time the participant was instructed to explain why he/she chose the answer they did. Seven to ten days later, participants took the same post-test to assess their long-term retention of any knowledge revision that may have occurred. With the data collected, we believe this work will contribute to the next step in refutational learning which aims to integrate laboratory strategies with the types of learning that occurs in classroom environments. We hypothesize that participants’ performance on the immediate post-test survey will improve in that they will answer more of the psychology misconceptions correct. This result would indicate that the poster campaign revised knowledge. Further, if this effect persists on the post-test long-term then we can speak to the long term retention of knowledge revision.

**Keywords: Misconceptions, Refutation, Revision**

### **1. Introduction**

Commonsense beliefs are barriers for learning scientific information. Psychology suffers from a “preexisting bias” problem; as psychological knowledge is particularly vulnerable because people rely on emotionally held beliefs about human behavior to understand psychology<sup>44</sup>. Commonsense explanations for psychology dubbed pseudoscience saturate our media. The general public may find that almost any explanation for human behavior can be supported by claims made on the internet, such that there would be no reason to look for evidence supported by

scientific rigor. This vulnerability extends to psychology students who have been the major population of interest in identifying psychological misconceptions.

Psychological misconceptions have been extensively studied, initially with the emphasis on identifying common false beliefs through responses to true/false or multiple-choice tests<sup>16, 19, 36, 38, 43, & 51</sup>. Introductory students in psychology classrooms have been the main target of these assessments. Unfortunately, research has revealed that introductory learners leave their courses with misconceptions intact<sup>13, 16, 29, 36, 46, & 51</sup>. Evidence from the teaching of psychology has revealed the pervasiveness of psychological misconceptions well into student's college education. For example, it was demonstrated that ten or more psychology courses were necessary before typical misconceptions are no longer believed to be true<sup>3</sup>. Others have found that it is college experience, particularly the skill-set of becoming a critical thinker that leads to decreased probability of agreeing with misconceptions<sup>20</sup>. Other research paints an even bleaker picture of the role of psychology course work in mitigating false beliefs<sup>14</sup>. It was found that psychology students, when compared to the general public, did only slightly better on a misconception assessment. Beliefs formed based on previously learned but incorrect knowledge is certainly not limited to psychology and have been shown to be barriers to knowledge acquisition<sup>8, 9, 11, 39, 49, 52, & 53</sup>.

In the last handful of years psychology has seen resurgence in interest for misconception identification. Much of this interest can be attributed to professional organizations such as The American Psychological Association<sup>1</sup> and the Association for Psychological Science<sup>28 & 33</sup> that have endorsed strategic plans to promote psychology as a science. The book *50 Great Myths of Popular Psychology: Shattering Widespread Misconceptions about Human Behavior* has been used to help update knowledge on the most currently held false beliefs<sup>32</sup>. This text has stimulated new research on misconception identification; however, the findings have been the same; psychology students overwhelmingly believe misconceptions.

Thus, the research emphasis has shifted from concept identification<sup>16</sup> to concept change<sup>20</sup>. Research on conceptual change learning provides several examples of how knowledge can be revised from false to true<sup>7, 8, 41, 50, & 54</sup>. Conceptual change is an imperative method for changing psychology misconceptions but one would expect the process of knowledge revision to be a slow, incremental process. Consider the unlearning necessary for concepts such as “opposites attract” and “we learn better when the teaching style matches our learning style” that have been introduced as truth, over and over again. Research explains that an individual belief such as “opposites” attract can change through the accumulation of individual belief revision<sup>10</sup>.

An extensively studied technique designed to assist learners with knowledge revision is the use of refutation texts<sup>4, 5, 6, 18, 34, 35, 42, & 48</sup>. Refutation texts state previously acquired but incorrect knowledge and then directly refutes it while also providing correct information. Refutation-style texts have recently been considered a viable strategy for changing psychological misconceptions in the classroom<sup>19, 26, 27, 46, & 47</sup>. Previous research tested students' knowledge of misconceptions and then taught a course using either a traditional lecture and text or a combination of refutation-style texts and refutational lecture<sup>26</sup>. Students exposed to refutation-based materials demonstrated significant changes in their prior beliefs when compared to learning with a standard classroom format.

Furthermore, refutation-style texts have been proven effective in the revision of commonsense beliefs in the area of reading comprehension<sup>23, 24, & 25</sup>. Comprehension of text requires the continual integration of incoming information into the evolving discourse representation in memory. In addition, integrating new information during reading ultimately results in the updating or revision of the emerging discourse representation. It has been well-established that knowledge revision or updating can occur during reading comprehension when new information is presented that negates earlier information<sup>12, 22, & 40</sup>. Prior research has demonstrated that cumulative belief revision within the discipline of Psychology was possible with the use of a set of well-designed refutation texts proposed the Knowledge Revision Components (KReC) framework<sup>21 & 31</sup>.

In these experiments, participants read a set of short vignettes that presented knowledge revision opportunities for psychological misconceptions. For example, participants were provided with a vignette that served to introduce the belief that it is best to stick with your initial hunch when you believe you don't know the answer to a multiple-choice question (see Figure 1 for example refutation).

**Example Refutation:** If you're unsure of your answer when taking a test, it's best to stick with your initial hunch  
Jeremy was finishing up with his biopsychology multiple-choice exam. He had time to spare so he decided to check over all his answers. As he looked at each question he felt confident about most of his answers. However, he was second guessing his answers on a handful of questions. Jeremy considered changing his answers.

**Misconception:** He remembered being told it is best to stick with your first choice so he didn't. When he got his exam back he asked the teacher whether it was best to change an answer on a multiple-choice test or best to stick

with your initial choice. The teacher said that it is widely accepted among students that changing answers on a multiple-choice test could actually lower your score.

**Refutation:** She wanted to explain to Jeremy this was actually not true.

**Explanation:** Students think it best to stick with their original answer on a multiple-choice exam. They are worried they might switch from a right to wrong answer. They fail to realize that in selecting their answer the first time they may be relying on instinct. If they take time to consider the choices more carefully they tend to decide based on reason. Students may receive mixed messages from teachers who say it is best to stick with their initial choice. The truth is there is evidence that switching more often results in making a move from an incorrect to correct answer.

**Target Sentence:** The teacher said when unsure of an answer it is best to switch from an initial hunch.

Figure 1. example of a refutation used

In the first part of the vignette, participants read a sentence that explicitly stated the incorrect belief (e.g., “The teacher said that it is widely accepted among students that changing answers on a multiple-choice test could actually lower your score.”). This was immediately followed by a second sentence that directly refuted this belief (e.g., “She wanted to explain to Jeremy this was actually not true.”). The refutation section was followed by an explanation in which the refutation was supported with a causal explanation. Finally, readers were presented with a correct outcome sentence that stated the correct belief and contradicted the reader’s belief prior to reading the refutation text (e.g., “The teacher said when unsure of an answer it is best to switch from an initial hunch.”). The refutation sentence plus explanation significantly reduce disruption during reading caused by the commonsense belief (e.g., it is best to stick to your initial hunch). This outcome demonstrated knowledge revision such that readers had successfully updated their knowledge base with the refutation and causal explanation and the commonsense belief was no longer disruptive.

The current research project aims to integrate findings from laboratory work in which well-controlled refutation texts were constructed<sup>31</sup> with class work using refutation-texts<sup>26</sup>. Integration is a good next step as each method alone requires a tradeoff. A limitation of laboratory work is trading observing knowledge revision as it may more naturally occur in the classroom with experimental control, whereas when working in the classroom the refutation-based materials may not be as well controlled. For example, length, writing style, and duration of presenting refutation-style materials may greatly differ.

In the present study, students in an Introduction to Psychological Sciences Honors course were required to conduct a research project in which they would examine the history, prevalence, and current knowledge of psychology misconceptions. In teams, twenty students investigated two psychology misconceptions from the book *50 Great Myths of Popular Psychology: Shattering Widespread Misconceptions about Human Behavior*<sup>32</sup>. The goal of this semester-long investigation was to write a research paper describing the history of the misconceptions, prevalence of the misconceptions, and current research refuting the misconceptions in a classroom project. The section of the research paper that refuted the psychology misconception became the foundation for refutation-style posters that would be used as part of the empirical study.

Psychology students were administered a misconception survey and then viewed refutation-style posters. After the poster viewing, participants took the same misconception survey immediately following the event and then again several days later. During each of these post-tests, participants were also required to explain why she/he chose the answer they did. We hypothesized that participants’ performance on the immediate post-test survey would improve in that they would answer more of the psychology misconceptions correctly as “false.” If refutation-style posters were successful in promoting knowledge revision then we anticipated similar results on the long-term assessment. The explanatory responses were used to assess accuracy, but also would reveal underlying knowledge for beliefs. We also hypothesized that the Introductory Students would reveal benefits in the research process of learning about the misconceptions. Results and how they apply to current initiatives which emphasize psychology as a science will be expanded upon in the general discussion.

## 2. Method

### 2.1 Participants

Eighteen psychology students, 12 females and 6 males with the average age of 23, from a mid-sized Midwestern university, earned course credit for their participation. 67% of the participants were seniors. All of the participants had either completed Introduction to Psychological Science (i.e., 67%) or were currently enrolled in it (33%). The majority of participants were psychology majors and had completed several courses in psychology.

### 2.2 Materials

#### 2.2.1 *misconception questionnaire.*

A questionnaire was created composed of 20 true/false statements. 10 of the statements were misconceptions of psychology taken from the book *50 Great Myths of Popular Psychology*<sup>32</sup> (e.g., “Most people experience a mid-life crisis in their early 40’s or 50’s). These 10 misconceptions were found by previous research<sup>30</sup>, which were believed by more than fifty percent of their participant sample (see Table 1 for a list of these 10 misconceptions as well as the percent each was believed to be true). The remaining 10 statements were psychology facts from a popular introductory psychology book<sup>37</sup> (e.g., “Memory capacity is present in infants”). These statements were included to prevent a response bias of false. The misconception questionnaire was administered before refutation posters (i.e., pre-test), immediately after (i.e., pre-test short-term), and then again 7 to 10 days (i.e., post-test long-term).

Table 1. 10 misconceptions used to create refutation-style posters and percentage believed to be true

If you’re unsure of your answer when taking a test, it’s best to stick with your initial hunch	97%
Individuals commonly repress memories of traumatic experiences	89%
Hypnosis is a unique “trance” state that differs from wakefulness	83%
Men and women communicate in completely different ways	74%
Raising children similarly leads to similarities in their adult personalities	74%
It’s better to express anger openly to others than to hold it in	73%
When dying, people pass through a universal series of psychological stages	69%
Criminal profiling is helpful in solving cases	67%
Recently there has been a massive epidemic in infantile autism	53%
Electroconvulsive “shock” therapy is a physically dangerous and brutal treatment	53%

#### 2.2.2 *refutation posters.*

Ten 4 by 3 feet posters were created by students currently taking an Introduction to Psychological Science, Honors course. To fulfill a research component of the Honors Program, students completed a semester-long research project in which they researched psychological misconceptions with the end goal of becoming an expert on how the misconception developed (e.g., its history), why it is commonly believed in society (e.g., prevalence), and how factual psychological research could be used to revise it (e.g., refutation information) (see Table 2, for information about classroom “workshops” students participated in class with the goal of creating the Refutation Posters).

Table 2. student misconception research project-workshops

<u>Workshop Topic</u>	<u>Learning Process</u>	<u>Learning Outcome-goal</u>
Project Introduction	Introduction to Psychological Research; Discussion of Psychological Misconceptions.	Understand foundation for Psychological Misconceptions.
Misconception Identification	Use Lilienfeld texts to target misconceptions interested in studying; Identify peer-reviewed and popular press articles.	Choose two Psychological Misconceptions for students to further research in teams.
Research Discussion	Compare/contrast peer-reviewed and popular press articles.	Introduce students to research process and provide examples of appropriate source materials.
Misconception Research	Research the history and persistence of misconception	Understanding background and prevalence of misconceptions.
Misconception Writing-1	Engage students in writing guidelines for final APA-style paper; draft writing describing the misconception	Drafted descriptions of misconception history and persistence.
Misconception Refutation	Describe and provide examples of knowledge refutation for misconceptions	Drafted refutations for misconceptions.
Misconception Writing-2	Share drafted papers with peers and professor	Receive writing feedback for final development of paper.
Poster Development	Poster requirements were presented and drafts workshopped	Receive feedback on poster development.
Poster Practice	Present misconception posters for practice audience.	Gain feedback and continue to prepare for experimental poster sessions.

Refutation posters were developed based on the following requirements: First, the misconception was described in close language to original description<sup>32</sup>. Second, it was clearly stated in the poster that the misconception is false. Third, refutation information described why the refutation was false and contained citations from peer-reviewed sources (see Figure 2 for an example refutation poster).

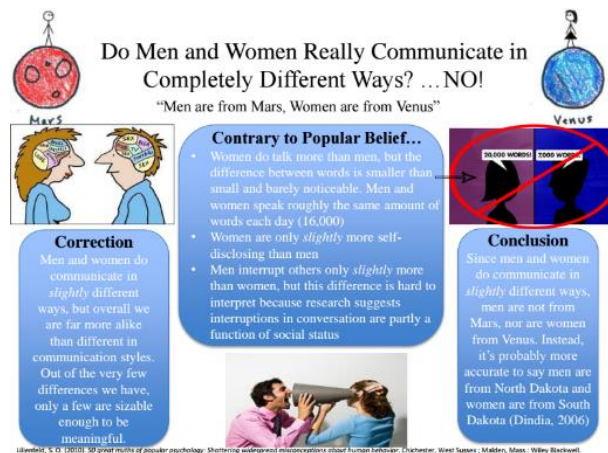


Figure 2. Example refutation poster created by introductory to psychology students

### 2.3 Procedure

First, participants were asked to complete a pre-test questionnaire. The first part requested information about gender, age, courses taken in psychology, and whether students were majoring in psychology or not. The second part of the survey included 20 true/false questions, 10 being psychology misconceptions and 10 being psychology facts. Participants were then taken to a separate room where the 10 posters were displayed, and each was accompanied by two students. Each poster was viewed for one minute; this time was designed to emulate self-paced reading of the poster. After this one-minute was up, the two student presenters explained the content of the poster to the participant for two minutes; this time was designed to depict classroom-type instruction. Participants viewed each of the ten posters in this manner for the total time of 30 minutes. After viewing all the posters, participants were taken back into the room they were given the pre-test in and were administered a post-test questionnaire.

The post-test (short term) was the same as the pre-test with the following modification, participants were asked to respond “true” or “false” to each of the 20 items and, for each item, were asked to provide a written explanation of their belief. A participant would receive a score comprised of the following possibilities: Correct “false” response and a correct explanation = 3 points, incorrect “true” response and correct explanation = 2 points, correct “false” response and incorrect explanation = 1 point, and incorrect “true” response and incorrect explanation = 0 points. Finally, participants were sent an invitation to complete the post-test online (post-test long-term) and did so test 7 to 10 days later. The post-test long-term was used to measure long-term retention of misconception information and was the same format as the post-test short-term.

### 3. Results

Separate analyses on the pre-test and post-test responses as a function of gender, number of psychology courses taken, and major versus non-major did not reveal any significant differences. This is not a surprising result as research widely confirms that students hold psychology misconceptions even after completing several courses of psychology and, in some cases, have performed as poorly as the general population on assessments. Additionally, the 10 misconceptions assessed in this study were previously normed as false beliefs by fifty percent or more of students taking psychology courses<sup>30</sup>.

The average number of misconceptions answered correctly on the pre-test and post-test short-term and post-test long-term are reported in Table 3. There was a significant difference in the average number of misconceptions answered correctly between the pre-test to the post-test short-term,  $t(34) = 11.05, p < .01$  and also between the pre-test and the post-test long-term  $t(31) = 10.32, p < .01$ . There was no difference in the average number of misconceptions answered correctly between the post-test short-term or post-test long-term,  $t(31) = .45, p = .66$ . Although participants agreed to complete the entire experiment, three of the original 18 participants did not complete the post-test long-term survey.

Table 3. mean number of psychology misconceptions and psychology facts answered correctly as “false” with SDs (in parentheses).

	Pre-test	Post-test short-term	Post-test long-term
Misconceptions	4.06 (2.13)	9.78 (.55)	9.86 (.36)
Facts	6.44 (1.20)	5.67 (1.75)	4.33 (3.24)

The significant difference in misconceptions answered correctly from pre-test to post-tests can be explained by participation exposure to the refutation posters. However, an alternative explanation for the significant difference in pre and post survey scores may be that multiple exposures to psychological misconceptions led to a response bias of “false.” For example, participants may become aware that we were presenting information about psychology knowledge that was untrue. Thus, they may have responded “false” more often on all items, not just the misconceptions, as a strategy. The average number of psychology facts answered correctly can be found in Table 3.

The number of facts answered correctly does differ for each survey; however, because there was not a higher frequency in correct “false” responses for facts as there was for misconceptions, which approached ceiling on both post-tests, we assume that a bias for “false” responses did not occur. The refutation-style posters proved to influence both short-term and long-term knowledge for psychology misconceptions. Prior research<sup>25</sup> & <sup>31</sup> for general knowledge and for psychological knowledge have demonstrated that refutation texts have been found to create optimal learning conditions resulting in both short and long-term effects.

Many measures of psychology misconceptions have included multiple-choice or true/false formats, an approach we also adopted in our experiment. However, one possible limitation of these types of questions is that they may reveal whether or not a person has knowledge on a concept and not assess whether that person has an incorrect belief<sup>47</sup>. In this experiment, we adopted the two-tiered approach to answering questions<sup>25</sup> & <sup>45</sup> to avoid true/false limitations and to have more information about learning outcomes afforded by refutation texts.

Participant explanations demonstrated even more robust evidence for knowledge revision as participants could answer the misconception correctly and provide an explanation consistent with details presented in the posters. For each of the post-tests, participants demonstrated knowledge of why the misconceptions were false. A perfect score of 30 would indicate that participants earned a 3 (1 point for the correct response of “false” and 2 points for a correct explanation) on each of the 10 misconceptions. The average score for the two-tiered explanations on the post-test short-term was 29.11 and post-test long-term was 22.46, respectively, which suggests that participants could correctly respond to the misconception as “false” and also provide a correct explanation. However, there was a significant difference in the average score for the explanations between the post-test short-term and post-test long term,  $t(29) = 6.11, p < .01$  (see Table 4 for two-tiered explanation averages and standard deviations). Considering the data from both Table 3 and Table 4 combined, it appears that in just over a week’s time, participants were able to respond correctly to all misconceptions; however, their ability to produce correct explanations decreased in quality.

Table 4. average score on two-tiered assessment of psychology misconceptions with SDs (in parentheses).

Post-test short-term	Post-test long-term
29.11 (1.68)	22.46 (4.20)

#### 4. Discussion

The impact of misconceptions on the scientific understanding of psychology is well documented. Psychological organizations and instructors of psychology have taken a keen interest in promoting the science of psychology, seeing that psychology misconceptions are very persistent, not only in the general public but also among those studying psychology. This study was aimed at moving beyond misconception identification toward a process of revision by integrating refutation-style posters, created in the foundation of refutation texts, into a classroom-based research project.

Students in an Introduction to Psychological Science class created refutation posters as part of a semester-long research process. Participants’ psychology knowledge was assessed for misconceptions and then the posters were presented. Results on two post-tests, one taken immediately after the poster presentations, and then one taken seven to ten days later both revealed considerable psychology knowledge revision. Participants answered significantly more misconceptions correct on both post-tests compared to their pre-test results. Of additional importance was the manner in which knowledge for misconceptions was validated on the post-tests. Participants were required to describe either their “true” or “false” response with a written explanation. On the post-test short-term, participants were able to produce an explanation consistent with information presented in the refutation poster to each misconception almost 100% of the time. Explanations on the post-test long-term also were supported with information from the posters; however, the detail and accuracy of participant responses was significantly less than the post-test short-term. Overall this result is important because it demonstrates the utility of refutational-style posters in mitigating psychology knowledge.

One limitation of the study is that the longer-lasting effects of the poster content are unknown. Because psychology misconceptions are so pervasive, we would anticipate that, over time, without consistent exposure confirming newly learned information, that prior knowledge would again take over. However, if students learn to approach psychology knowledge using refutation-style learning then correct information will eventually prevail;

which would result in a broader and deeper understanding of the fundamental principles of basic knowledge within psychology. This idea is consistent with work on conceptual change learning in which there are several examples of knowledge revision. In the context of conceptual change, knowledge revision is perceived as an incremental, conservative and slow process consisting of several intermediate steps<sup>54</sup>. The target knowledge involves complex knowledge structures consisting of interrelated networks of concepts, which in turn, consist of interrelated networks of individual beliefs<sup>10</sup>.

These results are well situated within current theories of knowledge revision, particularly within the KReC framework<sup>21</sup> which has recently been used to explain the role of refutation texts on knowledge updating<sup>25 & 31</sup>. Consider, for example, a learner that holds the psychology misconception that men and women communicate in completely different ways; this information is part of their prior knowledge and cannot be erased (Encoding Principle). When the learner reads the text on the poster and listens to the explanation that states the correct information (e.g., “Men and women do communicate in slightly different ways, but overall we are far more alike than different in communication styles”) than the psychological misconception (i.e., “Men and women communicate in completely different ways”) will also be activated via passive activation processes (Passive Activation Principle). These passive activation processes produce the co-activation of the commonsense belief and the correct belief, a necessary condition for knowledge revision (Co-activation Principle). When the correct belief is integrated with the commonsense belief, some degree of knowledge revision has occurred (Integration Principle). As the amount of correct belief information is increased, for example by including a causal explanation (e.g., “Women do talk more than men, but the difference between the words is smaller and barely noticeable.” “Men and women speak roughly the same amount of words each day.”), the correct information will begin to dominate the integrated network of information regarding the belief. As this occurs, the correct information will begin to draw increasing amounts of activation to itself, and at the same time, draw activation away from the psychology misconception so that any interference from the latter is reduced and/or eliminated (Competing Activation Principle).

We would also like to highlight the importance of involving students in the research process. Undergraduate research is a high-impact, educational experience that aids in student learning and understanding of a discipline. Yet, it can be very difficult to involve all students in the type of one-on-one research experiences that are customary in graduate school. Through a scaffolding of workshop assignments, students learned about the process of research created an original research product, and assisted in the experimental procedure. The students in the classroom were part of a selective university honors program. Their participation in this project fulfilled two competencies required of that program: leadership and research. The project fulfilled the leadership competency “Students will demonstrate the ability to utilize personal leadership values and guide groups toward a common goal” as students worked effectively in teams with the goal of presenting accurate psychological knowledge to their peers. The research competency required that students “exhibit information literacy skills, synthesize and integrate ideas, produce original research, and contribute to knowledge.” Students developed these skills by learning how to evaluate psychological information from peer-reviewed readings, original texts, and popular press articles. Teams of students synthesized these sources into a research paper that aimed to refute and replace psychological misconceptions with corrected, scientific information.

By involving students in the research project, they were also able to develop several of the skills the American Psychological Association<sup>2</sup> believes students should develop during an undergraduate degree program; such as a knowledge base in the field of psychology, an interest in scientific inquiry and critical thinking, an ethical and social responsibility in a diverse world, an increase of communication skills, and several gains within their professional development. Throughout this research project students were able to develop a knowledge base in psychology, in which they were able to describe the key concepts and principles as well as explain the applications of the field. Students were also able to demonstrate scientific inquiry and critical thinking skills by interpreting, designing, and conducting basic psychological research. Next, students developed a strong competence in writing and oral skills as well as interpersonal communication skills. With this skill the students were able to display an effective presentation and successfully interact with others. Finally, the students had the opportunity for professional development. Here students gained skills such as project management and teamwork, thus enhancing their overall professional development<sup>2</sup>.

More importantly, students recognized the value of this project. In an end of course survey, all 19 students recognized that the course developed their research competency. When asked to rate the extent to which the course developed research skills, the average responded a 4.8 on a 5.0 scale with a score of 5 indicating the course was exceptional at this skill development.

The discipline of psychology has suffered from an image problem likely the result of years of the general public referencing common sense to explain human behavior, rather than scientific fact. Still too, psychology, unlike many other scientific disciplines is a new science. This is echoed by the guiding organizations of the field in just recently



launching efforts to engage students and the public in correcting their perception that psychology is grounded in science. The work adds to previous research by identifying a process to not only name misconceptions but engage students in a process of revision. Here we have found a useful method of engaging both students and participants in the process of psychology knowledge revision. Instructors and researchers should continue to work together to blend teaching and learning methods toward educating others about what the discipline of psychology is and is not.

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