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Applied and transformed understanding in Introductory Psychology: analysis of a final essay assignment

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Abstract: This paper describes a case study of the impact of the introductory psychology course on students' understanding of their life experiences and course-related ideas. Student responses to a final essay assignment were analyzed to construct composites for areas of applied and transformed understanding. Results are important for psychology teachers and general educators seeking to better understand the potential applicability of course concepts to students' lives. The study also has broader cross-disciplinary relevance in demonstrating the use of the final essay assignment for promoting concept application and reflection and for assessing the impact of our courses on student understanding.

Keywords: concept application, critical thinking, teaching of psychology, undergraduate education, classroom assessment

I. Introduction.

Education should provide students something of value with impact beyond the classroom. This requires that teachers go beyond merely transmitting fragmented knowledge (e.g. , disconnected facts and definitions) to assisting students in understanding the core ideas of their disciplines. In addition, teachers should help students connect new ideas to their own thoughts and experiences. Students should be encouraged to apply concepts to their lives and use what they have learned to better understand themselves, their experiences, their communities, and their world. They are more likely to understand and remember course ideas they find meaningful for their lives (Hettich, 1976). They are more likely to be motivated in courses they deem relevant to their goals and experiences (Brender, 1982; Brophy, 1998).

Many theories of learning and cognitive development have emphasized the importance of connecting new concepts to students' prior knowledge and experiences. Kolb's (1981) experiential learning theory emphasizes the importance of connecting abstract concepts and generalizations to concrete experiences. According to Piaget's (1952) theory of cognitive development, individuals construct knowledge structures (or schemes) as they interact with the world and try to make sense of their experiences. Understanding develops as we fit new experiences into existing structures (assimilation) or adjust our ideas to fit new experiences (accommodation). Thus, from this constructivist perspective, learning always takes place in the context of students' prior understanding. Course concepts can help students organize their experiences (e.g., recognize previously overlooked patterns) and adapt or transform their understanding to better account for their experiences as well as research findings. Vygotsky's (1978, 1986) sociocultural theory further emphasizes the importance of learning concepts through social interactions with more knowledgeable others. Course concepts can be viewed as

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cultural tools that enable us to extend our thinking and understanding. Teachers can assist or "scaffold" students' use of new concepts to better understand their experiences and their world.

The importance of concept application has also been central to recent national discussions of general learning outcomes for

higher education. The National Leadership Council for Liberal Education and America's Promise (LEAP) examined the knowledge and skills essential for all U. S. undergraduate college students in order for them to be successful in the twenty-first century (Association of American Colleges and Universities, 2007). Their report identified "essential learning outcomes" for a liberal education that help students become engaged responsible citizens and lifelong intentional learners who can contribute to a dynamic global economy and a diverse democratic society. In addition to knowledge and skills, it promotes "integrative learning" that involves the application of knowledge to complex problems and real-world setting.

In my discipline of psychology, the American Psychological Association (APA) has emphasized application and the development of personal understanding in its *APA Guidelines for the Undergraduate Psychology Major* (APA, 2007). Goal 4 ("Application of Psychology") states that "students will understand and apply psychological principles to personal, social, and organizational issues" (p. 10). This includes relating concepts to everyday life and applying psychological concepts to solve problems. Goal 9 ("Personal Development") states that "students will develop insight into their own and others' behavior and mental processes and apply effective strategies for self-management and self-improvement" (p. 10). This includes using psychological concepts to reflect on personal experiences and foster personal health and growth.

Psychologists have also emphasized the importance of educating the general public about the applicability of psychology to people's lives. As APA president, George Miller (1969) famously called on psychologists to "give psychology away" to the public. Miller's call has been echoed by recent APA presidents. Zimbardo (2004) urged psychologists to inform the public on how psychology makes a difference in our lives. Levant (2006) called on psychologists to "raise the visibility of psychology and its perceived relevance to solving a wide range of personal, health, educational, social, and family problems" (p. 383). Moreover, in APA's recently developed strategic plan, its goals included to educate the public about psychology and to promote psychology's applications to daily life (Farberman, 2009, p. 77). Our courses provide an important means of educating others about the personal and societal relevance of our disciplines.

This emphasis on relevance and connecting concepts to students' lives seems especially important for introductory courses. For psychology majors, introductory psychology serves as a foundation to be built upon in later psychology courses. However, for the majority of students who are non-majors, this course may be their only direct exposure to the discipline of psychology. Thus, the course must deliver on its own in making an impact on students' understanding of the nature of psychology and its relevance for and applicability to their lives. As our knowledge base grows, it becomes increasingly important that teachers identify what content is most important and relevant for students (Makosky, 1985). Although content choices should not be dictated by consumer demand, they should be informed by students' perspectives. Whereas there has been much discussion about what core concepts should be emphasized in introductory psychology as a foundation for the major, there has been less emphasis on how the course can provide students with conceptual tools for better understanding their life experiences.

In this paper, I describe a case study of what students in two sections of the introductory psychology course reported as the most important changes in their understanding as a result of the course. The focus of the study was on identifying content areas in which students applied

course concepts to their life experiences or changed their understanding on topics with impact beyond the course. I refer to these as applied and transformed understanding, respectively. The purpose of the paper is two-fold. First, I aim to provide a portrait of such applied and transformed understanding as reported by students in a "final essay assignment. " This can be useful for psychology teachers to better understand areas in which students connect course content to their lives. It is also relevant for those interested in the role of the introductory psychology course in general education. Second, I aim to demonstrate the value of this final essay assignment (in this and other courses) in promoting concept application and reflection as well as for assessing the impact of our courses on students' understanding.

II. The Introductory Psychology Course and the Final Essay Assignment.

Introductory psychology at my institution is a one semester, three credit hour course called General Psychology. Data for this study come from two sections of this course (in spring 2008 and spring 2009) for which I was the instructor. The class met twice a week for 75 minutes over 15 weeks. Bernstein and Nash (2008) served as the textbook and all chapters were assigned. Greater emphasis (2 to 3 class sessions per chapter) was given to the introduction to psychology (perspectives and methods), biological bases, sensation and perception, learning, memory, human development, personality, psychological disorders, and social psychology. Less emphasis was given to consciousness, thinking and intelligence, motivation, health psychology, and treatment.

The focus of this study was on student responses to a "final essay" assignment. Students wrote a three to five page essay due during the last week of classes. The primary goal for the assignment was to engage students in using course concepts as tools for better understanding events and experiences in their lives beyond the classroom. Additional goals were to promote an end-of-semester review of course concepts and students' reflection on how they had benefited from and been impacted by the course. The essay counted as five percent of the course grade.

In this final essay assignment, students were asked to identify the ten course ideas (i.e., concepts, principles, and research findings) that had the greatest impact on their understanding. Specifically, students were asked what ideas helped them understand something (in themselves, others, or society) in a better or different way; assisted them or others in solving problems in their lives; helped them in making decisions in various roles (e.g., as students, parents, workers, friends, citizens); motivated them to make changes in their lives or take action in relation to social issues; or otherwise had a significant impact on their understanding, thinking, motivation, and/or behavior. Students were provided with several example responses. To encourage students to explore ideas from across the course, they were expected to include concepts from at least six different textbook chapters. Student essays were graded based on the quality of the connections made as well as conformity to assignment specifications and writing clarity and mechanics.

III. Method.

Essays from the two sections of introductory psychology were combined for qualitative analysis (Institutional Review Board approval was obtained). I received essays from 64 students, 58 of whom provided their consent for inclusion of their essays in this study. All essays identified ten ideas, for a total of 580 response items. Response items were first categorized by textbook chapter topic. Most items clearly focused on a concept or set of concepts from one specific

chapter. Those items including concepts from multiple chapters were categorized according to which topic received greatest emphasis in the response.

The analysis focused on identifying categories of responses relating to content areas in which students demonstrated applied or transformed understanding. Applied understanding refers to applications of concepts to understand specific life events or experiences. Transformed understanding refers to instances where students described a change in their understanding on a topic (e.g., abnormality, intelligence) with impact beyond the course. Many responses included elements of both forms of understanding and no attempt was made to categorize items in terms of this dichotomy. Items where students just reported information they found important or interesting were not included if there was no indication of a change in understanding beyond their learning the concepts themselves. For example, items merely reporting brain lobe functions or Piaget's stages were not considered to reflect applied or transformed understanding.

Specifically, analysis involved the use of the constant comparative method from the grounded theory approach (Glaser and Strauss, 1967; see also Merriam, 1998). Categories were developed to fit the data through repeated interactions between the data and the emerging categories. Analysis involved four complete reviews of the response items. On the first review, brief notes were taken on the key ideas in each response and tentative categories were identified for each chapter topic. The categories were refined in the second review of the items to improve their fit with the data. As most identified categories had at least five response items associated with them, this was taken as a minimum cutoff for a category being included in the final list.

In a third review of the response items, the emphasis was on combining smaller categories or breaking up larger categories. Categories with three or four items were combined with related categories. For example, conformity was combined with the bystander effect to form a *social influence* category. Categories with ten or more items were assessed to determine if they could be divided into two distinct subcategories (e.g., stress into the *effects of stress* and *coping strategies*). In some cases, a subcategory was identified along with a general category to include other responses (e.g., *psychological disorders* along with the more specific *anxiety disorders*).

With categories identified, composite responses were constructed from the student responses to represent each category. Each composite included ideas from at least two students and was limited to 80 words or less. All ideas included came from the students, as did much of the wording. However, student excerpts were edited to integrate ideas from multiple students, improve grammar, and make responses more concise. In some cases, details were changed (e.g., "sister" to "friend") to protect the identities of students or their family members. A final review of the response items helped in refining the composites and checking them for accuracy.

IV. Results.

Students' response items covered a wide range of concepts across all textbook chapters. Topics with the most response items were human development (n = 71), learning (n = 67), memory (n = 57), psychological disorders (n = 49), motivation (n = 47), introduction to psychology (n = 47), and consciousness (n = 44). Topics mentioned less often were biological bases (n = 35), social psychology (n = 35), personality (n = 31), thinking and intelligence (n = 30), health psychology (n = 27), sensation and perception (n = 26), and treatment (n = 14).

There was also considerable diversity in terms of the roles to which students made connections. Roles frequently mentioned included student, parent (as a present or an anticipated role), partner (spouse, boyfriend/girlfriend), other family member (sibling, cousin, child,

aunt/uncle, grandparent), and friend. The role of worker was also common, either in relation to current employment or anticipated careers (e.g., as nurses, teachers, managers, psychologists, and engineers). In addition, concepts were applied to sports, hobbies (e.g., art, music, and photography), babysitting, and pet training. Some students took the role of concerned citizens, addressing societal problems relating to drugs, education, politics, the media, and the economy.

Based on the analysis, 39 categories emerged as areas of applied or transformed understanding. Composites generated from student responses, organized by chapter topic, are provided below. Two pairs of chapters were combined—motivation with personality and psychological disorders with treatment—because ideas from these chapters were interrelated. The number of students providing a response relating to each category is given in parentheses. The codes in brackets at the end of the composites refer to themes that will be discussed below.

A. Introduction to Psychology.

- *The nature and breadth of psychology* (6). Psychology is much broader than I thought—it is about more than just how people feel. There are many different types of psychologists (some I had not heard of). I began the class thinking psychology was a pseudoscience based on the ramblings of a cocaine addict who had problems with his mother. I learned psychology is a science, with research methods to test hypotheses while minimizing bias. I also learned that Freud's view is not even currently the most influential. [PSY]

- *Psychological perspectives* (12). Psychologists use six modern perspectives to understand behavior and mental processes. Each perspective has its own idea of why people do what they do or think the way they think. This forces me to look at situations from different angles. The perspectives are not right or wrong but rather different ways to look at something from a psychological standpoint. [PSY]

- *Critical thinking* (9). Critical thinking is the process of assessing claims and making judgments on the basis of well-supported evidence. This has helped me realize that it is okay to question what I hear or read. It can help people be more open to different theories and escape biases and preconceived views. What we choose to believe should be based on solid evidence and, until evidence is provided, we should keep an open mind to avoid jumping to conclusions. [CRIT]

- *Correlation versus causation* (10). Correlation does not imply causation. When I was playing basketball in high school, I used to wear the same socks (my lucky socks) until we lost. I thought there was a relation between our success and my socks, but there really wasn't. When we hear two things are related or happened at the same time, we should explore other possible explanations rather than just assuming one thing causes the other. [CRIT]

B. Biological Bases.

- *The biological bases of mental processes* (9). I had never considered thoughts and emotions as being connected to biological factors. The brain changes as we learn due to our brain's plasticity. Neurotransmitters actually affect psychological processes such as memory,

impulsivity, sleep, and hunger. Neurotransmitter imbalances can cause emotional and personality changes as well as mental disorders. [PSY, CHAL]

- *Effects of brain trauma* (10). Knowing the functions associated with specific brain areas helps me understand the effects of brain disorders and injuries. I better understand why my grandfather couldn't talk or remember very well after his stroke. I understand the role of the hippocampus in my grandmother's Alzheimer's disease and why she acts the way she does. As a future nurse, it will be helpful to know how brain injuries affect how people act. [CHAL]

C. Sensation and Perception.

- *Sensory problems* (7). I have gained a better understanding of my own farsightedness and how glasses help. I also better understand my son's colorblindness. Our senses are important and should not be taken for granted. We should be cautious in certain situations to keep them safe. I have friends who have hearing loss from working in factories and I will now advocate for safeguards to protect the ears from permanent damage. [CHAL, HLTH]

- *Perceptual differences* (10). People can differ in how they perceive the same situation or event. We can often look at something in more than one way and there may not be a single correct perspective. Differences can result from individuals paying attention to different details or using different schemas, perhaps acquired growing up in different environments. Knowing this can help us be more sensitive to these differences and have more tolerance and understanding for others in society. [CRIT, SOC]

D. Consciousness.

- *Sleep problems* (10). I better understand my mother's nightmares and I learned my brother's sleepwalking will probably disappear as he grows up. I also better understand my father's difficulties working the third factory shift due to our circadian rhythms. I learned how jet lag causes fatigue, irritability, and sleep problems when I travel across time zones. [CHAL]

- *Effects of sleep loss* (9). Our society needs to recognize how sleep deprivation contributes to illnesses and accidents (e. g. , car crashes, medical mistakes). Lack of proper sleep can affect mental functioning and cause learning difficulties. I understand it is important to get enough sleep before exams and staying up all night studying is not effective. I have tried to go to bed earlier and have noticed an increase in my energy and ability to concentrate in my classes. [HLTH, LRN]

- *Effects of psychoactive drugs* (15). I have told friends addicted to drugs to just quit—it didn't seem that hard. After studying how drugs affect neurotransmitters, I understand the troubles they face and can be more supportive. I also understand how psychological dependency led my cousin who had been in prison without cocaine to return to using after being released. I have told my younger sister how drugs can cause dependency and brain damage. I now also better understand my own addiction to nicotine. [CHAL, HLTH]

E. Learning.

- *Conditioned aversions* (12). We can learn taste aversions and phobias through classical conditioning. This explains why I cannot eat Cajun chicken pasta any more. I ate it once and got really sick from food poisoning. Now I cannot look at it, even though it used to be my favorite. I also have a fear of spiders due to early childhood conditioning. I understand why my mom is scared to go into a parking garage after being severely injured in one. [CHAL]

- *Reinforcement and punishment* (23). I now understand why my 6-year-old niece sometimes behaves as though she is two. I love her and hate to see her upset, so if she cries, I usually cave in. I am therefore reinforcing the behavior I want to stop. When babysitting, I give kids privileges if they behave and take away privileges if they misbehave. When coaching soccer, I reinforce good behaviors with praise. I also used treats to potty train my dog. [CHLD, SOC]

- *Concerns with punishment* (5). I never have spanked my kids often and still feel sometimes it may be necessary. However, I didn't think about the fact that it models aggression, doesn't teach alternative responses, and is often administered while the parent is angry. After our discussion, I agree it should be used as a last resort and reinforcement is best. You can also punish without spanking by taking away privileges. With these strategies, parents can use less physical punishment and still have well-behaved children. [CHLD]

- *Observational learning* (8). I did not realize the impact of observational learning until my daughter started replicating my bad habits. For example, she wants salt on her food because I do. More positively, after watching me study and seeing how proud I am when I get good grades, she now wants to do well on her own homework. Parents, teachers, and coaches need to be good role models. We also need to think about what behaviors our children are learning from watching television. [CHLD, SOC]

F. Memory.

- *Elaboration* (16). All my life, I thought the best way to memorize something was to repeat it over and over. However, I learned elaborative rehearsal is more effective in getting information into long-term memory. I will remember better if I relate new information to what I already know or to important things in my life. For example, when studying psychological disorders, it helped when I connected the disorders to people I know who seem to have them. [LRN]

- *Mnemonics* (12). Mnemonics have improved my grades and made me feel more confident when taking tests. When studying the eye and brain, I made up words that sounded like the actual words so it was easier to remember. For my anatomy test, I thought up a way to remember whether arteries or veins were red or blue. "Arteries" has an "r" for red. Using "b" for blue and "v" for veins, I remembered to "be very careful not to forget. " [LRN]

- *Study habits* (13). The study habits I had in high school don't work well in college. I now try to read the chapter before class, take notes while reading, and reread the unfamiliar parts to help store information in long-term memory. I also now take notes in class. Instead of

cramming for exams, I use distributed practice to spread my studying out over several days. Due to attention limitations, I now understand why watching television while doing homework just doesn't work. [LRN]

G. Thinking and Intelligence.

- *Problem solving strategies* (9). Using means-end analysis to think about the best way to move toward your goals is important for school and one's career. There is value in combining divergent and convergent thinking—first brainstorm and then choose the best idea. Cognitive restructuring can also be useful for seeing things in a new way. In band, I broke a difficult piece down measure by measure. I changed my expectations about being able to learn it just by changing how I thought about it. [CRIT, LRN]

- *The confirmation bias* (5). We often pay more attention to evidence that supports our hypothesis than to evidence that doesn't. My uncle always discussed the good things about President Bush but not that he was costing us billions. My co-workers at a correctional facility sometimes notice problem behaviors they expect while overlooking other evidence. This bias can maintain prejudices if we only accept information supporting our attitudes about a group. We should strive to consider all observations objectively before coming to a conclusion. [CRIT, SOC]

- *Multiple intelligences* (6). I have always resented persons being considered intelligent based on academics alone. Gardner's theory goes beyond "book smarts. " People differ in how they learn best and those challenged in one area can succeed in others. Standard intelligence tests are useful in some ways, but educators and parents should realize they do not provide a complete picture of a child's intelligence or worth. Gardner's theory has also helped me understand that I am more intelligent in some areas than others. [LRN, SOC]

H. Motivation and Personality.

- *Motivation for success* (13). Setting challenging but realistic goals is important for success. I understand how sometimes people lower their goals to avoid failure. When something doesn't happen the way I want, focusing on effort attributions rather than blaming external circumstances can motivate me to try harder. After learning about extrinsic versus intrinsic motivation, I am considering changing my major. I would like to feel my degree is not just about extrinsic rewards (e. g. , a diploma) but that it has some intrinsic worth. [LRN]

- *Self-efficacy* (8). You are more likely to do something if you believe you can succeed. In high school, I never tried out for the basketball team, because I was nervous and didn't think I would make it anyway. In golf, I thought I was bad, but my dad told me to believe I could be good and this led to drastic improvements. When I have kids, if I encourage them to believe in themselves, they will have a better chance at success. [LRN, CHLD]

- *Maslow's hierarchy* (11). Maslow helps me understand a friend who has great potential but is flunking her classes and engaging in destructive behavior. This may be because her basic needs are not met. Her mother rejected her growing up and now she struggles financially

with no support system. My cousin also may have joined a gang to get respect and feel like he belongs. In schools, children will not be all they can be if their basic needs are not met. [LRN, SOC]

- *Motivational conflicts* (12). We often experience motivational conflicts. We must balance what is pleasurable (id), what society says we should do (superego), and what we think is best (ego). Conflicts can arise around eating. My eyes have been opened concerning anorexia—it is not just attention seeking but an illness that can lead to heart problems, bone fractures, and death from starvation. Young girls get the message that "thin is beautiful. " Parents and teachers should help children accept themselves as they are. [CHAL, SOC]

I. Human Development.

- *Parenting styles* (14). My father was authoritarian and our relationship suffered because of his lack of warmth. As a parent, I will try to have an authoritative style—firm but warm and understanding. Children should have freedom to make decisions but within reasonable boundaries and with the help of a responsible adult. Parents should also explain their rules. Growing up, I was told to follow the rules "because I said so. " I never understood why, which may be why I broke so many. [CHLD]

- *Prenatal and infant care* (9). It is shocking how much parents can change a child's future by the decisions they make. Our society should be more informed about teratogens. A pregnant woman who drinks alcohol puts her unborn child at risk. Smoking increases the risk of low birth weight and SIDS. After birth, children need a secure attachment so they know they are loved. As a working mother, it was comforting to learn that children in daycare can still develop healthy bonds with their parents. [CHLD]

- *Cognitive development* (15). Piaget's theory helps me understand kids. Recently, an infant I was babysitting screamed for her bottle when I paused to burp her. It occurred to me that by placing the bottle out of sight, I could focus her attention on something else—and it worked. Learning about egocentrism also helps me understand my 3-year-old niece, who often interrupts me when I am studying. I need to correct her while realizing it is difficult for her to take other people's perspectives. [CHLD]

- *Psychosocial development* (8). Erikson's stages help me understand what people may be going through in their lives. The autonomy stage explains why my two-year-old often wants to make her own decisions. I experienced an identity crisis in adolescence. Leaving high school, I had no clue what I wanted to do. I floated around before deciding to go to college and better my quality of life. I also now better understand what to expect as I enter middle adulthood. [CHLD, SOC]

J. Health, Stress, and Coping.

- *Effects of stress* (11). Everyone experiences stress in our fast-paced society, but chronic stress can be bad for your health. Stress can interfere with immune system functioning and increase your susceptibility to illness, even heart disease and cancer. It can also affect your

mood and memory. I experience stress as I try to balance school, two jobs, and family responsibilities. I stress out about not doing well in school and often get sick before exams. Reducing stress could improve my health and school performance. [HLTH, LRN]

- *Coping strategies* (14). We can reduce the impact of stressors by focusing on the positive and seeing something as a challenge rather than a threat. We can also avoid ruminating about the past and catastrophizing about worst-case scenarios. I worry about situations like tests too much. I will try to not get worked up over small things and confront minor problems so they don't grow bigger. I can also manage stress by working out and relying on social support. [HTLH, LRN]

K. Psychological Disorders and Treatment.

- *Understanding abnormality* (12). We need to be careful labeling someone abnormal when they may simply be different. Our class activity made me realize that maybe I am not as open-minded as I thought. What I considered odd, others considered normal. A lot of things people consider abnormal in our culture are normal in other cultures. There is a fine line between abnormal and normal behavior. If people realized this, they might be less judgmental and more tolerant and understanding of others. [CRIT, SOC]

- *Anxiety disorders* (13). My wife suffers from generalized anxiety disorder and a friend has a slight case of OCD. I better understand their daily struggles. I also tend to worry about things and this class has helped me identify some of my catastrophizing and ruminating thoughts. I have a phobia of public speaking and get stressed over taking speaking classes. I also have a fear of the dark. I recognize there are ways to overcome these if they interfere with my life. [CHAL, HLTH]

- *Understanding psychological disorders* (13). I talked with a friend of mine who has schizophrenia. He said hallucinations are the hardest part, because he cannot grasp what is real and what is not. I always thought individuals with schizophrenia were crazy. Now I realize they are normal people challenged everyday by their own minds. Some of my relatives also battle depression. I thought this was a mindset you could overcome if you had the will. I now have more sympathy for what people go through. [CHAL, SOC]

- *Treatment* (9). Effective treatments are available for many psychological disorders. Depression is common, but many people do not get help even though treatments are available. It is important to find the right therapy for a person's problem. I think systematic desensitization could help my wife with her fear of spiders. I actually applied this to my own fear of heights and last week I was hanging stage lights at church—it works! [CHAL, HLTH]

L. Social Psychology.

- *Attribution biases* (6). I see biases at work when people take responsibility for successes but not failures. Politicians also take credit for good things while blaming bad things on others. We often attribute others' behaviors to internal causes but our own to external factors. At work I asked why I was the only one responsible enough to always be on time. Then one day

I got stuck behind a train. I will try to remember this so I don't judge others so quickly. [CRIT, SOC]

- *Self-fulfilling prophecies* (6). I had heard a woman I met recently was not polite, so I ignored her (and she ignored me). After studying self-fulfilling prophecies, I began smiling at her and talking to her, and there is no longer tension. Self-fulfilling prophecies can also maintain prejudices. If we perceive certain individuals as a threat, we may be defensive and hostile toward them and they may react similarly toward us. We should get to know people rather than assuming they fit our stereotypes. [CRIT, SOC]

- *Social influence* (9). People may conform to fit in, leading them to act in ways that seem out of character. In high school, kids may go along with the crowd so they are not made fun of. Individuals also may not help because they think others will. A girl at my friend's apartment complex was beaten by her boyfriend and no one called for help. Understanding this, I believe in an emergency I will be more likely to ask if others need help. [SOC]

- *Obedience to authority* (6). In the Milgram studies, individuals obeyed authority even when it was against their better judgment. I now understand that when under authority, normal people are capable of doing terrible things they never would do under normal circumstances. People need to be aware of this to prevent it from happening to them. Just because someone is an authority figure, that doesn't mean you should do what he or she tells you to do. [SOC]

V. Discussion.

The above composites provide a portrait of applied and transformed understanding as reflected in student essays from two sections of my introductory psychology course. They demonstrate the ways in which the course content is relevant and applicable to students' lives. For teachers of the introductory psychology course, this can help them identify areas in which further applications and transformations can be promoted and supported. For educators in other areas, it can help them understand the course's potential contributions as part of the general education curriculum.

In reviewing the above categories, several themes emerged that reflected broader patterns of applied and transformed understanding. Specifically, again using the comparative method, I identified seven themes and associated each response category with the one or two themes it most reflected. The themes are summarized below. Categories associated with each theme are presented in Table 1. Codes at the end of the composites above also link them to these themes.

1. *Psychology as a Discipline* (PSY). Students gained greater understanding of the discipline of psychology, including that it is a science and has many subfields. They learned psychological topics can be looked at from multiple perspectives, including a biological perspective. Their inclusion of concepts across multiple topic areas also reflects their understanding of the breadth of the field.

2. *Critical Thinking* (CRIT). Students noted the importance of critical thinking, including exploring assumptions, examining evidence, and being open to divergent perspectives. They recognized how personal biases (e. g. , confirmation and attribution biases, self-

fulfilling prophecies) can influence our thoughts and actions. They learned to be careful in distinguishing correlation from causation and when labeling someone as abnormal.

3. *Student Learning and Success* (LRN). Students learned how they could become better learners by improving their study strategies (e. g. , using elaboration, mnemonics, and distributed practice). They gained greater insight into factors (e. g. , self-efficacy, needs, goals, attributions) influencing their motivation to learn. In addition, they became more aware of the impact of sleep and stress on their success as students.

4. *Personal Health* (HLTH). Students learned how they and others could make healthier life choices. They discussed the negative effects of stress and drugs as well as the importance of protecting the senses and getting enough sleep. They gained understanding about ways to cope with stress and available treatments for anxiety and depression.

5. *Psychological Challenges* (CHAL). Students gained insight into various psychological challenges (e. g. , schizophrenia, depression, anxiety, brain trauma, sensory and sleep problems, eating disorders, conditioned aversions, addictions) faced by others or, in some cases, themselves. They learned about common characteristics and experiences, biological bases, environmental contributors, and treatments relating to these challenges.

6. *Social Influence and Diversity* (SOC). Students broadened their understanding of social interactions and various forms of diversity. They learned how we influence and are influenced by others. They gained insight into how biases can maintain prejudices and affect our behaviors toward others. In addition, they learned how people differ in terms of their perspectives, needs, motives, intellectual strengths, development, and mental health.

7. *Children and Childcare* (CHLD). Students demonstrated greater understanding of children, including reasonable expectations for children of various ages. They reflected on the impact of their interactions with children (e.g., as parents, aunts/uncles, babysitters, coaches). They recognized the importance of providing a supportive environment and concerns associated with prenatal risks and physical punishment.

The above themes provide psychology teachers a framework for thinking about the impact of the introductory psychology course. The themes are consistent with the goals identified in the *APA Guidelines for the Undergraduate Psychology Major* (APA, 2007). Collectively, the responses reflect students' development relating to APA Goal 1, "Knowledge Base of Psychology," and Goal 4, "Application of Psychology. " APA Goal 1 includes a suggested learning outcome, "characterize the nature of psychology as a discipline" (p. 11), that links to the "Psychology as a Discipline" theme. APA Goal 4 specifically mentions applications relating to healthy lifestyles ("Personal Health"), abnormal behavior ("Psychological Challenges), and interpersonal relations ("Social Influence and Diversity"). APA Goal 3, "Critical Thinking Skills in Psychology" directly connects to the "Critical Thinking" theme. APA Goal 9, "Personal Development," is supported by understanding relating to "Student Learning and Success," "Personal Health," and "Psychological Challenges. " APA Goal 7, "Communication Skills," and Goal 8, "Sociocultural and International Awareness," are supported by understanding of "Social Influence and Diversity. " Although not specifically mentioned in the APA goals, understanding

of "Children and Childcare" is arguably an important additional outcome for our students, many of whom do or will interact with children in parent, teacher, childcare, or health care roles.

Table 1. Emergent Themes of Applied and Transformed Understanding.

Psychology as a Discipline [PSY]
The nature and breadth of psychology
Psychological perspectives
The biological bases of mental processes

Critical Thinking [CRIT]
Critical thinking
Correlation versus causation
Perceptual differences
Problem solving strategies
Confirmation bias
Understanding abnormality
Attribution biases
Self-fulfilling prophecies

Student Learning & Success [LRN]
Effects of sleep loss
Elaboration
Mnemonics
Study habits
Problem solving strategies
Multiple intelligences
Motivation for success
Self-efficacy
Maslow's hierarchy
Effects of stress
Coping strategies

Personal Health [HLTH]
Sensory Problems
Effects of sleep loss
Effects of psychoactive drugs
Effects of stress
Coping strategies
Anxiety disorders
Treatment

Psychological Challenges [CHAL]
The biological bases of mental processes
Effects of brain trauma
Sensory problems
Sleep problems
Effects of psychoactive drugs
Conditioned aversions
Motivational conflicts
Anxiety disorders
Understanding psychological disorders
Treatment

Social Influence & Diversity [SOC]
Perceptual differences
Reinforcement and punishment
Observational learning
Confirmation bias
Multiple intelligences
Maslow's hierarchy
Motivational conflicts
Psychosocial development
Understanding abnormality
Attribution biases
Self-fulfilling prophecies
Social influence
Obedience to authority

Children & Childcare [CHLD]
Reinforcement and punishment
Concerns with punishment
Observational learning
Self-efficacy
Parenting styles
Prenatal and infant care
Cognitive development
Psychosocial development

These themes also support the role of introductory psychology for general and liberal education (APA, 2007; Cole, 1982; Costin, 1982). They are aligned with the LEAP initiative's four "essential learning outcomes" for all college graduates: "Knowledge of Human Cultures and the Physical and Natural World," "Intellectual and Practical Skills," "Personal and Social

Responsibility," and "Integrative Learning" (Association of American Colleges and Universities, 2007, p. 12). The course directly contributes to students' breadth of knowledge. Intellectual and practical skills are addressed by the themes "Critical Thinking," "Student Learning and Success" (for learning and problem solving skills), and "Social Influence and Diversity" (for teamwork skills). Personal responsibility is reflected in the themes "Student Learning and Success" and "Personal Health," while social responsibility is supported by "Social Influence and Diversity," "Psychological Challenges," and "Children and Childcare" (for better understanding of and concern for others). LEAP defines integrative learning as based on the application of knowledge to real-life problems and settings. Thus, students' demonstration of applied understanding reflects progress toward this advanced outcome.

As with any case study, a limitation concerns generalizability. To what extent do student responses reflect various idiosyncrasies of my particular classes (e.g., class activities, examples, topic coverage)? Students from other classes would certainly generate different response items and similar analysis would be expected to yield some category differences due to variation in instructor emphasis and student interests (among other factors). However, given the reported similarity in the organization and content of the introductory psychology course across instructors and institutions (Miller and Gentile, 1998), it seems reasonable that there would also be much overlap in the emerging categories. Moreover, there would likely be even more stability in the broader themes given they emerged across multiple content areas. Regardless, the above categories and themes demonstrate the *potential* of the course for impacting student understanding beyond the classroom. In addition, they identify areas that instructors could *target* to promote such understanding. Further studies could address this issue of generalizability.

VI. Evaluation of the Final Essay Assignment.

A secondary goal of this paper was to present the final essay assignment as a pedagogical tool for promoting concept application and reflection in students. The literature provides many activities that involve students in applying concepts. For example, in psychology students have been asked to use course concepts to analyze feature films (Boyatzis, 1994; Conner, 1996), literature (Boyatzis, 1992), and media reports (Lawson, 1994; Rider, 1992). These assignments, however, do not directly connect concepts to students' lives. Journals have been used to more directly encourage students to make connections to their own observations, thoughts, and experiences (Conner-Greene, 2002; Hettich, 1976, 1990; Miller, 1997). Journal writing can also promote reflection and critical thinking (McGovern and Hogshead, 1990; Wade, 1995). The final essay assignment provides an alternative to journals that can promote end-of-the-semester reflection on the most important and relevant ideas students think they have learned in the course.

The final essay assignment can also serve as an assessment tool. It can complement more quantitative measures by providing specific examples of student learning. Classroom assessment techniques such as the minute paper (where students report at the end of class the most important things they have learned and questions they still have) have been used to assess critical thinking and learning (Angelo and Cross, 1993). The final essay assignment can similarly assess the impact of our courses, providing a broader view at the end of the semester of what students consider most important, what applications they have made, and how the course has changed their understanding. Such assessment can help instructors identify opportunities for curricular change to facilitate meaningful learning with impact beyond the classroom. For example, my students did not make as many connections to social psychology concepts as I had expected. I

now give greater attention to assisting students in applying these concepts. The essays can also provide feedback on specific topics the instructor has targeted for promoting applied or transformed understanding. For example, I have analyzed the essays to understand students' views on parenting styles/practices and abnormality after class discussions and activities on these topics.

A final use of the final essay assignment is to identify student misconceptions. For example, in addition to a couple expected confusions (e.g., negative reinforcement vs. punishment), a misconception I had not considered emerged in relation to the concept of self-efficacy (the expectation that one can succeed at a specific task). A couple students went beyond stating self-efficacy is important for motivation to the claim that it is all you need to succeed. For example, one student stated: "If you have a positive attitude and know you can do something, then you can. " I now address this misconception in class.

In conclusion, I hope this paper promotes reflection among psychology teachers on the ways our students are making connections to their lives and how this can be promoted through class lectures, discussions, activities, and assignments. I further hope it can help those from other disciplines better understand how the introductory psychology course can contribute to general education. Finally, I hope the final essay assignment can serve as a useful learning and assessment tool for other instructors aiming to scaffold students' conceptual development and their application of course concepts to their lives and experiences beyond the classroom.

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References

American Psychological Association. (2007). *APA guidelines for the undergraduate psychology major.* Washington, DC: Author. Retrieved from http://www. apa. org/ed/precollege/about/psymajor-guidelines. pdf

Angelo, T. A. , and Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). San Francisco: Jossey-Bass.

Association of American Colleges and Universities. (2007). *College learning for the new global century: A report from the National Leadership Council for Liberal Education & America's Promise.* Washington, DC: Author.

Bernstein, D. A., and Nash, P. W. (2008). *Essentials of psychology* (4th ed.). Boston: Houghton Mifflin.

Boyatzis, C. J. (1992). Let the caged bird sing: Using literature to teach developmental psychology. *Teaching of Psychology, 19*, 221-222.

Boyatzis, C. J. (1994). Using feature films to teach social development. *Teaching of Psychology, 21*, 99-101.

Brender, M. (1982). The relevance connection: Relating academic psychology to everyday life. *Teaching of Psychology, 9*, 222-224.

Brophy, J. (1998). *Motivating students to learn.* New York: McGraw-Hill.

Cole, D. L. (1982). Psychology as a liberating art. *Teaching of Psychology, 9*, 23-26.

Conner, D. B. (1996). From Monty Python to *Total Recall*: A feature film activity for the cognitive psychology course. *Teaching of Psychology, 23*, 33-35.

Conner-Greene, P. A. (2000). Making connections: Evaluating the effectiveness of journal writing in enhancing student learning. *Teaching of Psychology, 27*, 44-46.

Costin, F. (1982). Some thoughts on general education and the teaching of undergraduate psychology. *Teaching of Psychology, 9*, 26-28.

Farberman, R. K. (2009). Council in action. *Monitor on Psychology, 40*(9)*,* 76-77.

Glaser, B. , and Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago: Aldine.

Hettich, P. (1976). The journal: An autobiographical approach to learning. *Teaching of Psychology, 3,* 60-63.

Hettich, P. (1990). Journal writing: Old fare or nouvelle cuisine? *Teaching of Psychology, 17*, 36-39.

Kolb, D. A. (1981). Learning styles and disciplinary differences. In A. W. Chickering et al., *The modern American college: Responding to the new realities of diverse students and a changing society* (pp. 232-255). San Francisco: Jossey-Bass.

Lawson, T. J. (1994). The media assignment: Enhancing psychology students' ability to apply their knowledge of psychology. *Teaching of Psychology, 21*, 157-159.

Levant, R. F. (2006). Making psychology a household word. *American Psychologist, 61*, 383-395.

Makosky, V. P. (1985). Teaching psychology in the information age. *Teaching of Psychology, 12*, 23-26.

McGovern, T. V. , and Hogshead, D. L. (1990). Learning about writing, thinking about teaching. *Teaching of Psychology, 17*, 5-10.

Merriam, S. B. (1998). *Qualitative research and case study application in education.* San Francisco: Jossey-Bass.

Miller, B., and Gentile, B. F. (1998). Introductory course content and goals. *Teaching of Psychology,* 25, 89-96.

Miller, G. (1969). Psychology as a means of promoting human welfare. *American Psychologist, 24*, 1063-1075.

Miller, S. (1997). Self-knowledge as an outcome of application journal keeping in social psychology. *Teaching of Psychology, 24*, 124-125.

Piaget, J. (1952). *The origins of intelligence in children.* New York: International Universities Press.

Rider, E. A. (1992). Understanding and applying psychology through use of news clippings. *Teaching of Psychology, 19*, 161-163.

Wade, C. (1995). Using writing to develop and assess critical thinking. *Teaching of Psychology, 22*, 24-28.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1986). *Thought and language*. Cambridge, MA: Harvard University Press.

Zimbardo, P. G. (2004). Does psychology make a significant difference in our lives? *American Psychologist, 59*, 339-351.