The Psychologically Literate Citizen

Foundations and Global Perspectives

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Psychological Literacy and Applied Psychology in Undergraduate Education

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Psychological literacy for the 21st century posits both real and virtual resource options for "applied" psychology at the interface of psychology education and graduate attribute-targeted student learning outcomes (SLOs). Psychological literacy encapsulates the common graduate attributes or capabilities that students should acquire while undertaking a major in psychology, as exemplified by guidelines and lists of SLOs delineated by many national psychology organizations (e.g., United States: APA, 2007; Australia: Cranney et al., 2008; Europe: Lunt et al., 2001). Application involves purposefully applying the basic capabilities to new problems or in new situations, usually in an experiential and active manner. In this chapter, we briefly consider the background to the issue of "applied" psychology in undergraduate (UG) education, and then give some concrete examples of how "applied" psychology learning and teaching (L&T) strategies can be implemented to support the development of psychological literacy (McGovern et al., 2010) in our students.

BACKGROUND

In Australia, the United States, and the United Kingdom, education and training follows the "scientist-practitioner" or Boulder model, which has two components: (a) a graduate professional training component that emphasizes coursework, professional practice training, and research, and (b) the evidence-based practice of professionals and their continuing contribution to the science (Baker & Benjamin, 2000). Recent analysis of different international models of education and training (Cranney et al., 2008, 2009) suggests that an "applied" emphasis in UG education would enhance psychological literacy (see also Dunn et al., 2010,

who suggest at least one course in the UG curriculum should be applied in nature). Unfortunately, different understandings of what "applied" means hinder progress on this issue. Some assume that "applied" means professional training in psychology, and oppose this suggestion. Others assume the term means teaching for transference by applying psychological principles to phenomena encountered in the everyday world of students. Providing such examples in L&T activities makes the material more meaningful, understandable, and salient, thus increasing the probability that students will remember those principles (e.g., Badcock et al., 2007). Between these extremes there are numerous possibilities for what "applied" could mean in UG education. We here define "applied" psychology in the context of UG education to mean the successful application of psychological knowledge, skills, and professional dispositions (graduate attributes) to new problems and in new situations, whether this be in educational, personal, professional, or community contexts. This approach necessitates L&T strategies that are designed to be relevant to student experience, and in a currency that enhances memory and function.

Three factors make consideration of the "applied" issue critical. The first is the large number of psychology major students who do not become professional psychologists (Halpern, 2010; Lipp et al., 2007; Upton & Trapp, 2010). What knowledge, skills, and attitudes (i.e., graduate attributes, which as McGovern et al. [2010] make clear, constitute "psychological literacy") do these students take with them into diverse employment settings (Cranney et al., 2008)? How do graduates evaluate and use their psychological literacy? What impressions of psychology are they giving to their personal and professional associates? We have tended to ignore the needs of this large group of graduates (Lipp et al., 2007). Optimizing psychology education would strengthen the science and profession of psychology, as these students are our ambassadors to the general public and are potential leaders in their communities (i.e., vanguards of the psychologically literate citizenry).

The second issue is the growing shortage of health workers delivering psychological services (Hall & Altmaier, 2008). Thus there is external pressure to produce more psychologists more quickly, and so it becomes more important to identify L&T strategies that target the development of psychological literacy in our psychology major graduates. The third issue is that many current global problems, including climate change, racism, and terrorism, are clearly related to human behavior (Marsella, 2007; White, Chapter 5 in this volume). Appropriate education during adolescence, particularly in psychology, can help to prevent prejudice and terrorism (McCarthy, 2002). We need psychologically literate graduates who are motivated and competent to engage in solving real-life problems.

EXAMPLES OF "APPLIED" PSYCHOLOGY IN RELATION TO THE ATTRIBUTES THAT CONSTITUTE PSYCHOLOGICAL LITERACY

One way to operationalize "applied" psychology is through the strategic programming (Biggs & Tang, 2007) of the SLOs that constitute psychological literacy.

Here we will focus on the Australian version (Cranney et al., 2009), which has significant overlap with the U.S. version (see also Dunn, McCarthy, Baker, Halonen, & Hill, 2007) and draws on listings such as the U.K. Benchmarking Exercise (Quality Assurance Agency, 2002) and EuroPsyT (Lunt et al., 2001). This list includes content knowledge, research methods, critical thinking, values, communication, and application. In the section below, for each of these graduate attributes, we list several SLOs and then present some examples of how "applied" could be interpreted for each of the graduate attributes. Emphasis is on student-centered, active L&T strategies, with progressive development of SLOs, and "real-life" connections being made wherever possible. Readers are invited to adapt these examples to suit their own local educational context, with the aim of advancing the development of psychological literacy among their undergraduate students.

1. Knowledge and Understanding of Psychology

Demonstrate understanding of the major concepts, theoretical perspectives, empirical findings, and historical trends in the core topics of psychology.

Suggested Specific SLOs

- Display basic knowledge and understanding of the following core topics: abnormal psychology; biological bases of behavior; cognition, information processing, and language; individual differences in capacity and behavior; testing and assessment; personality; learning; lifespan developmental psychology; motivation and emotion; perception; social psychology; history and philosophy of psychology; intercultural diversity, and indigenous psychology.
- Demonstrate knowledge of the theoretical and empirical bases underpinning the construction, implementation, and interpretation of some of the most widely used cognitive and personality assessments.
- Demonstrate knowledge of the theoretical and empirical bases underpinning evidence-based approaches to psychological intervention.
- Delineate psychology as a scientific discipline and describe its major objectives.
- Explain the major themes (e.g., interaction of genetics and environment) and perspectives (e.g., behavioral, evolutionary, sociocultural) of psychology.
- Explain psychological phenomena using the concepts, language, and major theories of the discipline.

Knowledge, and how it is acquired, is what defines the discipline. Our traditional L&T approach to content knowledge has been the large-lecture format,

assessed by a final examination. This approach is being fundamentally challenged and transformed by concurrent technological development and student demand for alternative delivery modes. Some examples of more student-centered and/or technologically innovative L&T "applied" approaches are given below.

Example 1.1: Students' Examples of the Application of Psychological Principles

Design L&T activities where students are instructed to work in small groups to illustrate how a psychological principle is evident in everyday life; list three examples for whole-group discussion.

Variation 1: Instruct students to (1) define a psychological principle, (2) review the literature for empirical support for the construct, then (3) find five examples from a range of settings (e.g., personal, interpersonal, and organizational). Prepare a 500-word online report for class review and discussion.

Variation 2: Have students create summaries or tip sheets from research findings into application of psychological principles in the classroom (e.g., What evidence is there for the *effective* use of PowerPoint presentations in tertiary settings?).

Variation 3: Have students analyze television advertisements for the application of learning principles (S. Provost, Southern Cross University).

Variation 4: Arrange for small groups of students to visit sites such as elementary schools, elder-care facilities, detention centers, community health clinics, and day-care centers. Groups then report back to the class which principles they observed being applied (or which principles should have been applied) during their visits (S. McCarthy, Northern Arizona University-Yuma).

Example 1.2: Developing an Understanding of Culture

Australian universities have an increasingly culturally diverse student population, and the progressive development of cultural awareness, knowledge, and skill is critical to the development of the graduate attribute of global citizenry. One example of a L&T strategy is that first-year students develop a cultural diagram of their key cultural influences in life and use a reflective journal (see Example 6.3 below) to record their increasing understanding of that concept, including finding examples in everyday life (L. Burton, University of Southern Queensland). In this way, students explore their individual cultural identity in the context of various interactions with their peers and enhance self-awareness of cultural issues.

Example 1.3: Behavior Modification of Self

As part of their practical work, students apply a psychological principle to themselves. For example, they could each choose one of their own behaviors they wish to modify, and conduct a behavior modification procedure (i.e., N = 1 ABA intervention; J. Reece, RMIT University; Watson & Tharp, 2009), then present a case study in oral or written format for assessment.

Variation 1: This approach has been used to help students to understand single-subject designs, an empirical framework for case formulation with hypothesis

testing, as well as the advantages of multiple measures and linked interventions, and the use of visual aids to communicate progress (e.g., the use of the "10,000 steps" site for increasing exercise; weight loss using calorie counting journal sites; time and study management using Andrew Martin's Motivation Wheel). It is best if students choose an issue relevant to their own priorities, as the exercise requires time, design, and data collection over the semester (J. Milne-Home, University of Western Sydney).

Example 1.4: Professional Skill Training

Some programs include counseling, interviewing, or test administration skills training in UG units, usually in the third or fourth year. This activity is obviously resource-intensive, and creative, low-cost approaches need to be developed (see Provost et al., 2010, for suggestions of possible role-playing and simulation approaches). The use of survey sites and tests is one way to illustrate the underpinnings of design, method, as well as the framing of interview/survey questions to minimize bias or response set. These communication skills for listening and cultivating an empathic inquiry mode are invaluable assets for social interactions and effective communication—these are life skills as well as applied psychology in everyday life (J. Milne-Home, University of Western Sydney).

2. Research Methods in Psychology

Understand, apply, and evaluate basic research methods in psychology, including research design, data analysis and interpretation, and the appropriate use of technologies.

Suggested Specific SLOs

- Describe the basic characteristics of the science of psychology.
- Describe, apply, and evaluate the different research methods used by psychologists.
- Demonstrate practical skills in laboratory-based and other psychological research.
- Describe and evaluate questionnaire and test construction, implementation, and interpretation.
- Describe the key principles for designing, implementing, and evaluating programs of behavior change.
- Locate, evaluate, and use information appropriately in the research process.
- Undertake statistical analysis appropriately.
- Use basic Web-search, word-processing, database, e-mail, spreadsheet, and data analysis programs.
- Design and conduct basic studies to address psychological questions: frame research questions; undertake literature searches; critically analyze

theoretical and empirical studies; formulate testable hypotheses; operationalize variables; choose an appropriate methodology; make valid and reliable measurements; analyze data and interpret results; and write research reports.

Research methodology and statistics (RM&S) should be strongly emphasized in UG education. RM&S knowledge is usually delivered in large-lecture format, but most "experiential" and "active" UG teaching and learning strategies involve students (a) learning statistical techniques, (b) demonstrating basic laboratory techniques or phenomena in such areas as perception and physiological psychology, and (c) undertaking research projects. These are all examples of "application" of RM&S knowledge. Apart from examination, written research reports have been the main communication outcome in UG education. First year may involve compulsory experience of research as a participant, and here the challenge is to link this "application" back to the knowledge, which can be achieved simply by requiring students to answer research-relevant questions on a (pass/fail) form at the end of each experience (J. Cranney, UNSW). The higher the year, the more likely it is that students will be given a research project assignment, although this does not preclude first-year students from also participating (see Example 2.1). It is advantageous for students to experience the full range of research approaches (e.g., laboratory research *and* survey research; quantitative *and* qualitative RM&S). In programs where applicable, the third- or fourth-year thesis is the ultimate UG application of RM&S knowledge. For the thesis, some programs have conference-style oral presentations of both the proposal and the final product, each of which attracts a proportion of the final thesis grade (S. Provost, Southern Cross University). This reflects effective formative assessment of SLOs. Some specific examples are given below.

Example 2.1: First-Year Group Research Projects

Students undertake group research projects in the last half of the semester. There is some choice as to topic, and some choice in specifics such as the independent or grouping variables. Their research proposal needs to be approved, and they must test at least one participant. The next challenge is making sense of their data, and the instructor usually interprets whether apparent effects are "significant." Finally, students orally present their research in the tutorial, where it is assessed according to predetermined criteria. An alternative is to run an experiment in class, which students write up for their laboratory report. This report is followed by a group research proposal of a follow-up study, which they orally present in class (J. Cranney & S. Morris, UNSW).

Example 2.2: Research Placements

At some universities, students can take a research placement unit in which they work in a laboratory for a semester. Other models for UG hands-on research experience include the summer research scholarship, or voluntary research assistantship programs.

Variation 1: Year 3 students interview Year 4 students about their experience with their research thesis projects (sometimes observing the researcher in action), and report back to the class (B. Spehar, UNSW).

Example 2.3: Critical Consumers of Applied Research

In a "Common Sense Psych Myth-busting" exercise, students find a report about scientific research in the popular press. In class, they deconstruct the article, breaking the story down into its research components and analyzing its conclusions. They identify the research questions being posed, present them as a hypothesis or two, and come up with a design to test that hypothesis. That would involve identifying the variables under investigation, the type of sampling needed, and how they would treat the data. In some cases, the instructor may track down the actual published research that the article is based on. Students then compare what is in the newspaper article with what is in the original source (J. Reece, RMIT University; J. Milne-Home, University of Western Sydney).

Example 2.4: Pre-Honors Group Research Projects

Groups of Year 3 students research the literature in a particular area, find a gap in the literature, design an experiment to investigate this theoretical or empirical gap, present a proposal to the class (also a written one, which is marked), set up and run their group experiment, analyze it, and then write it up, individually, as a journal article. This experience provides an introduction in a group format to the actual research process, which they may undertake in Year 4 (F. Martin, U. Tasmania). A variation on this approach is to use as an assessment task where the student (with some guidance) chooses a research question and then (with appropriate scaffolding) writes a three-page grant proposal (including lay description, background, project aims, significance and outcomes, approach and methodology, timeline, and national benefits) (J. Cornish, Macquarie University).

Example 2.5: Human Descriptive Statistics

First-year students are introduced to statistics in tutorials by themselves becoming "numbers." They then move around the room to demonstrate principles such as the normal curve, and variability. This is particularly good for students with little mathematics background (F. Martin, U. Tasmania).

Variation 1: Each student conducts a single case study with a teenager, entering his or her data online. The lecturer feeds that data back to the whole class to illustrate various RM&S principles; for example, she may release an aspect of their averaged data, thus revealing particular patterns of adolescent behavior (a formula for getting students hooked on psychology; J. Milne-Home, University of Western Sydney).

3. Critical Thinking Skills in Psychology

Respect and use critical and creative thinking, skeptical inquiry, and the scientific approach to solve problems related to behavior and mental processes.

Suggested Specific SLOs

- Apply knowledge of the scientific method in thinking about problems related to behavior and mental processes.
- Question claims that arise from myth, stereotype, pseudo-science, or untested assumptions.
- Demonstrate an attitude of critical thinking that includes persistence, open-mindedness, and intellectual engagement.
- Demonstrate a capacity for higher-order analysis, including the capacity to identify recurrent patterns in human behavior.
- Evaluate the quality of information, including differentiating empirical evidence from speculation.
- Identify and evaluate the source and context of behavior.
- Recognize and defend against the major fallacies of human thinking.
- Evaluate issues and behavior using different theoretical and methodological approaches.
- Use reasoning and evidence to recognize, develop, defend, and criticize arguments and persuasive appeals.
- Demonstrate creative and pragmatic problem solving.

Critical thinking is a particularly important graduate attribute for our ubiquitous psychology major graduates (Dunn, Halonen, & Smith, 2008; Gray, 2008). It deserves more than just implicit emphasis, given that (a) most will not undertake any kind of research beyond the third or fourth year, let alone professional practice training, (b) this attribute overlaps to some extent with all other attributes, and (c) they can apply psychology critical-thinking skills to a range of contexts in their personal and professional life.

Example 3.1: Cognitive Fallacies

Lectures on cognitive fallacies (from the key "causation vs. correlation" fallacy to the range of formal fallacies) can be accompanied by students finding examples in the media of such fallacies, and bringing them to class for discussion. This material could help create a class resource, from which examples may be taken in a final examination (J. Cranney, UNSW).

Variation 1: Psychological myths (e.g., we use only 10% of our brains; see Lilienfeld, Lynn, Ruscio, & Beyerstein, 2010) provide another example for use in this manner; specifically, students undertake research to determine whether there is any support for these popular notions.

Variation 2: Students can be asked to search the Web for sites on celebrity birthdays to find their (or a parent's) "horoscopic twin"—that is, someone born on the same date in the same year—and then compare their personalities, to critically assess horoscope assumptions (J. Homewood, Macquarie University).

Example 3.2: Creative Thinking in Research

In a lecture setting, you can develop creative research thinking by asking students in small groups to design a study to answer a question that is usually of social

relevance (e.g., possible psychological consequences for children in detention centers). Ask them to form a hypothesis (independent of literature search; they need to choose an effect direction) to determine independent and dependent variables and to operationalize them, to briefly describe the procedure, and to consider ethical and resource issues. Randomly select groups to describe their ideas, then discuss methodological soundness, feasibility, and so forth. Contrast experimental and quasi-experimental approaches. They receive two practices across two lectures, and complete a similar exercise in the final examination. These exercises give students practice with designing experiments, especially operationalizing variables, and also in considering the reality of resources and ethics in research (J. Cranney, UNSW).

Example 3.3: Critical Thinking in Research

Meltzoff (1998) provides an overview of research methods, followed by a number of "bogus" research articles, each of which have various methodological flaws that are later outlined in detail. First-year students receive two examples to read before the lecture, where in groups they attempt to find as many flaws as possible. Groups are randomly selected to offer one criticism, and a list of flaws is then created. Finally, students are given the textbook "answer," but are told that the list is not exhaustive. The source is not revealed to the students. The students are given one new bogus article to critique in the final examination (J. Cranney, UNSW).

Variation 1: Third-year students write a critical analysis of a real journal article in which they answer specific questions such as: What are the objectives of the study? What was the design of the study? What are the most significant conclusions drawn from the study? Do you think this study was soundly based on the theory? Explain. Do you think the discussion section discussed the results accurately? Explain. Were there issues that could not be adequately addressed? How could you improve on the current study? (F. Martin, U. Tasmania).

4. Values in Psychology

Value empirical evidence; tolerate ambiguity during the search for greater understanding of behavior and knowledge structures; act ethically and professionally; understand the complexity of sociocultural and international diversity, and reflect other values that are the underpinnings of psychology as a discipline.

Suggested Specific SLOs

- Recognize and respect social, cultural, linguistic, spiritual, and gender diversity.
- Explain how the science and practice of psychology is influenced by social, historical, professional, and cultural contexts.
- Identify and describe the sociocultural and international contexts that influence individual differences in beliefs, values, and behavior.

- Use information in an ethical manner (e.g., acknowledge and respect the work and intellectual property rights of others through appropriate citations in oral and written communication).
- Recognize how privilege, power, and oppression may affect prejudice, discrimination, and inequity.
- Explain how prejudicial attitudes and discriminatory behaviors might exist in oneself and in others.
- Recognize the limitations of one's psychological knowledge and skills, and value life-long learning.
- Display high standards of personal and professional integrity in relationships with others.
- Exhibit a scientific attitude in critically thinking about, and learning about, human behavior, and in creative and pragmatic problem solving.
- Evaluate psychologists' behavior in psychological research and other professional contexts in relation to the national codes of conduct.
- Promote evidence-based approaches to understanding and changing human behavior.

Some of these SLOs appear to be quite diverse and complex, but the underlying value is this: if one has an informed understanding of why people behave the way they do in particular contexts, then one should use that knowledge in a constructive way. One could view most ethical codes as reflecting agreed-upon principles of behavior that help people to become engaged with both local and global issues, and to be able to live together in a community, balancing individual and communal needs, short- and long-term goals.

Example 4.1: Cultural Diversity

To appreciate cultural differences in behavior (first learning outcome), first-year students are given a non-obtrusive observational study assignment regarding some type of human social behavior (e.g., going to the international airport and looking at differences in behavior on greeting/departing). They then summarize the information according to psychological principles, and present the information in tutorials. The instructor needs to ensure that all ethical issues have been covered prior to undertaking this exercise (L. Zinkiewicz, Deakin University).

Variation 1: Films can also be used effectively toward this end. Meiners (2009) provides an extensive list of feature-length films produced in countries around the world that can effectively be used to observe and discuss human social behavior in various cultural settings. Many instructors successfully incorporate films into their classes to provide focused observations of psychological phenomena, and many lists and guidelines exist (S. McCarthy, Northern Arizona University-Yuma; see Atkinson, 2006; Green, 2003; Nelson, 2008; Wedding et al, 2005; see also Denson & Ing, Chapter 8 in this volume).

Example 4.2: Ethical Dilemmas

Some national psychology societies provide a set of case studies demonstrating a number of different ethical dilemmas. These can be given to small groups to discuss in tutorials, with each identifying what part of the ethical code is relevant, what the consequences might be, and how to avoid the situation or behave ethically and adequately in the context (see Davidson & Morrissey, Chapter 4 in this volume).

Example 4.3: Intergroup Imagined Contact

In a tutorial, actively involve UG students to reduce their outgroup bias and increase their intergroup harmony by having second- and third-year students imagine positive or "cooperative contact" with a cultural minority outgroup. This imagined contact situation should last for a few minutes. Measure pre-test and post-test attitudes towards this outgroup to see whether the students' cultural awareness and respect have improved after the imagined contact. Finally, use these results as a basis for a class discussion on how students can effectively implement this strategy outside the classroom (see White, Chapter 5 in this volume).

Example 4.4: The Ethics of Animal Research

Students are led through a brief structured debate as part of the core physiological psychology tutorial material. They are asked to prepare with set readings covering a number of perspectives. In the tutorial, form groups of three: one in the judge/timekeeper/chairperson role, one in the "for" role, and one in the "against" role. The question could be, "Should we be able to use rats in research to model human behavioral disorders?" The debaters receive 5 minutes to prepare their arguments and 3 minutes to present, and the judge tallies up the valid points made. Each receives a further 2 minutes to prepare and 2 minutes for rebuttal. Again, the judge keeps tally. Finally, the judge determines who has won. The tutor then ascertains how many "for" and "against" outcomes there are, and reiterates some of the main arguments on each side. The tutor should then inform students of the ethical codes, procedures, and laws regarding animal research relevant to either that department/school or a typical department that undertakes such research (J. Cranney, UNSW).

5. Communication Skills in Psychology

Communicate effectively in a variety of formats and in a variety of contexts.

Suggested Specific SLOs

- Write a standard research report using American Psychological Association (APA) structure and formatting conventions.
- Write effectively in a variety of other formats (e.g., essays, research proposals, reports) and for a variety of purposes (e.g., informing, arguing).

- Demonstrate effective oral communication skills in various formats (e.g., debate, group discussion, presentation) and for various purposes.
- Demonstrate basic interviewing skills.
- Demonstrate effective interpersonal communication skills, including the abilities to: listen accurately and actively; use psychological concepts and theories to understand interactions with others; identify the impact or potential impact of one's behavior on others; provide constructive feedback to others; and adopt flexible techniques to communicate sensitively and effectively with diverse ethnic and cultural partners, including in the context of teamwork.
- Collaborate effectively, demonstrating an ability to work with groups to complete projects within reasonable timeframes, and manage conflicts appropriately and ethically.

The primary communication tool in UG education in many countries is the research report. Some survey and anecdotal data suggest that even for ubiquitous psychology major graduates, this style of writing (no doubt reflecting other skills such as information literacy and critical thinking) translates well into diverse workplaces (Cranney et al., 2008). Structured developmental activities and formative assessment could help students apply written communication knowledge before the final submission of a full report (see Example 5.1). Moreover, we have rarely ventured beyond the research report and essay in terms of forms of written communication (e.g., writing of "briefs," a key task for many graduates in the workplace; preparing posters). Also, we have lacked creativity in teaching oral communication, despite the value of these skills in diverse work settings. This omission may simply perpetuate the nature of our own training—that is, we ourselves may not have experienced structured learning and assessment opportunities. If we lack the capabilities needed to help students develop these communication skills, then we must call upon our colleagues in the university student learning centers to assist us.

Subcomponents of these relatively standard forms of communication include the appropriate creation of figures, tables, diagrams, and flowcharts. We should also be considering communication forms relevant to our students' new technological world, such as the use of Facebook and Second Life. Regardless of the mode of communication, however, the effective use of these forms of communication requires critical and analytical thinking as students condense information into logical structures and sequences.

Example 5.1: Formative Development of Research Report Writing Skills

We all teach report writing differently; and there are many handbooks and websites (e.g., http://writingworkshop.edtec.unsw.edu.au/psyc_report/overview.htm) to draw on. One way to use "formative" strategies in the first year is to take students through a number of structured exercises and to make the first assessable task a group write-up of the Introduction and Method sections of a class experiment (see also Beins, Smith, & Dunn, 2010). Then each student writes the whole

report by herself or himself, drawing on the feedback he or she received for the group effort. Similar but less intense strategies can be employed in larger first-year courses, where structured group literature search exercises lead up to the individual writing of the Introduction and Method sections in the first semester (J. Cranney, S. Morris, G. Huon, & B. Spehar, UNSW; see also Martin & Adam, 2008). For beginning students, connecting to more familiar topics as a bridge to research writing can be useful. There are a variety of ways to do this. Gokhan (2009) offers an excellent, detailed writing unit using art (see McCarthy et al., 2009, pp. 464–480).

Example 5.2: Summarizing Psychology Research in Lay Terms
Students are required to write a letter in response to a request from a teacher/company director/other non-psychologist, outlining the psychological principles involved in a particular area and the evidence for and against. For example, parents approach you and ask whether they should be allowing their child to continue to speak their language of origin in the home, as they suspect that doing this will compromise the child's ability to become fluent in English (F. Martin, U. Tasmania).

6. Learning and the Application of Psychology

Understand and apply psychological principles to personal, social, and organizational issues.

Suggested Specific SLOs

- Describe major areas of applied psychology (e.g., clinical, counseling, organizational, forensic, health).
- Apply knowledge of legislative frameworks (including privacy, human rights).
- Apply knowledge of consumer and carer participation in psychological care.
- Apply knowledge of psychology, society, and the workplace/influencing systems.
- Apply psychological concepts, theories, and research findings to solve problems in everyday life and in society.
- Reflect on one's experiences and learn from them in order to identify and articulate one's personal, sociocultural, and professional values; demonstrate insightful awareness of one's feelings, motives, and attitudes based on psychological principles.
- Apply psychological principles to promote personal development through self-regulation in setting and achieving career and personal goals; self-assess performance accurately; incorporate feedback for improved performance; and purposefully evaluate the quality of one's thinking (metacognition).

- Demonstrate a capacity for independent learning to sustain personal and professional development in the changing world of the science and practice of psychology.

This might appear to be the most relevant "applied" graduate attribute, but that depends on how you define "applied." The examples given below may help academics less familiar with this attribute.

Example 6.1: Applying Psychological Principles to Self-Understanding

Completing first-year psychology should give students increased understanding of themselves, including aspects of personality and capability (Gray, 2008). One early strategy would be to complete the "VIA Signature Strengths Questionnaire" on Seligman's "Authentic Happiness" website, http://www.authentichappiness.sas.upenn.edu/Default.aspx (see also McGovern, Chapter 21 in this volume). Then, following ethical guidance regarding students' choice of the extent of self-disclosure, students engage in a class discussion about personality and individual differences. The questionnaire results also could become part of a personal learning portfolio (see Example 6.3). A class discussion of the reliability and validity of such questionnaires, compared to those found in popular magazines, could also be informative (J. Cranney & S. Morris, UNSW).

Variation 1: A further exercise could be writing a newspaper article where each student interviews herself or himself with some focused common questions relevant to psychological concepts (L. Zinkiewicz, Deakin University).

Variation 2: Some schools have a careers counseling service; if viable, first-year psychology students could be encouraged to attend the service and reflect on the results, in particular any increased understanding of themselves and their potential career paths, in their (assessable) journal (J. Earl, UNSW).

Example 6.2: Career Development from First Year

First-year students are given a career development exercise that has three stages. First, they submit an "expression of interest" (similar to a cover letter) and a curriculum vitae (CV) for a bogus professional psychology internship position (different settings across different years). Second, they receive lectures and participate in tutorial activities about how to write CVs and cover letters, and other optimal career development strategies. Finally, they again submit their expression of interest and CV, which are then fully assessed (E. Chan, M. Kofod, J. Cranney, UNSW). Some universities have introduced a capstone unit in the final year of undergraduate study with the explicit aim of putting theory into practice with an emphasis on career development (J. Homewood, Macquarie University).

Example 6.3: Psychological Literacy Portfolios and Reflective Journals

Portfolios and reflective journals do not have to be work-intensive for assessors. For the psychological literacy example, although students may need to address all

the graduate attributes that make up psychological literacy and/or make fortnightly journal entries, they can be required to (a) indicate one particular entry that they think displays high-quality reflection, and (b) write a 250-word summary of what they learned during the unit. In addition, the marker randomly chooses one other entry to mark in addition to these two. To prevent last-minute journal creation, students may be required to submit entries electronically. Although many universities now have electronic portfolios, for psychology students this is not essential. See Cranney and colleagues (2005) for one description of this application.

Example 6.4: Work-Integrated Learning

Some universities have a stand-alone placement unit during Year 3 where students find a setting that interests them (e.g., a school, a counseling service), are responsible for organizing all legal and ethical preconditions (e.g., criminal checks), and contract with the supervisor and unit coordinator to develop certain capacities during work in that setting. Assessment is based on a reflective essay and the supervisor's evaluation. Because placements for clinical masters students are in short supply, students may choose placements in any workplace where there is significant interaction with other workers and/or clients. They analyze the work situation from applied social psychology perspectives and use their psychology knowledge and skills to construct a proposal that will assist the organization in some way. For example, higher-level students could undertake a needs analysis and design a program; others could implement the program; then another set could evaluate it (L. Zinkiewicz, Deakin University). Finally, McGovern and associates (2010) give the "Dr. Cantrell" example of a class project that involves students solving problems in an elementary school setting.

CONCLUSIONS

In theory, implementing these kinds of "applied" psychology L&T strategies should develop greater psychological literacy. At the very least, students should better understand their own strengths and weaknesses, and be more effective in their personal and professional lives—and potentially be more effective citizen-ambassadors for psychology.

Finally, although the ideas in this paper should seem reasonable to most stakeholders, there remains a huge gap in our knowledge about the effectiveness of different L&T strategies. In "valuing empirical evidence," we should be reviewing our current educational practices periodically in light of the evidence base (for reviews see Halpern & Hakel, 2003; Pashler et al., 2007; Trapp, 2010; Worrell et al., 2010; Zinkiewicz et al., 2003). Although there are many psychological principles from cognition, social, and motivational psychology that should be applied to tertiary educational settings (across all programs), psychology academics have been reticent in taking on this kind of applied research. It is time we moved beyond this maladaptive practice, for the direct benefit of our students, and for

the indirect benefit of the discipline and profession of psychology, and for society generally.

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