

# **The Psychologically Literate Citizen**

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**Foundations and Global Perspectives**

EDITED BY

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# What the World Needs Now Is Psychological Literacy

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JACQUELYN CRANNEY AND DANA S. DUNN

*Homo sapiens* considers itself the dominant species on earth (insects may disagree). Our species has broken tribal geographical boundaries to develop national and international communities, and technology has clearly revolutionized our daily lives, especially by allowing instant global communication and immediate access to boundless global information. We argue that in this new age, psychological literacy (McGovern et al., 2010) is key to both the survival and well-being of our species, and that psychological literacy thus needs to be a major outcome—possibly the major outcome—of undergraduate education. We briefly review the current aims of undergraduate programs in several countries, and then argue for a minimum, compatible set of aims for the global undergraduate psychology education of the new millennium. We then suggest some curriculum and pedagogical strategies to meet these new aims. We conclude this chapter by looking ahead to a psychologically literate future and what it might be like.

## PERSPECTIVES ON PSYCHOLOGICAL LITERACY

As sentient and seemingly autonomous beings, we are naturally preoccupied with our own well-being now and into the vague future of our lifetimes, and we are also driven by evolutionary biological and cultural mechanisms to be concerned with the well-being of our families and, in more recent human history, our friends (Buss, 2008; Dunbar & Barrett, 2009). Psychology is the scientific study of thoughts, feelings, and actions. Thus, education in psychology should impart to learners some of the knowledge acquired through the process of psychological science. We argue here that we are no longer a “young” science (cf. Stanovich, 2009), but we have reached an age of rights and responsibilities. Our right is to be recognized for what we are: a discipline that uses the scientific method to understand human thoughts, feelings, and behavior, and a profession that applies evidence-based strategies to change human behavior for the better. Because the subject matter of

psychology is inherently interesting to every human being, it is a central discipline in all human knowledge endeavor, as is evident by the infusion of psychology into most other disciplines and professions (Boyack, Klavans, & Börner, 2005; Cacioppo, 2007; Gray, 2008). Our responsibilities in the discipline and profession of psychology are emergent and unique. An awareness of the genesis of our thoughts, feelings, and behaviors within the context of evolutionary and cultural history (Cranney & Morris, Chapter 18 in this volume), and particularly an appreciation of the increasing interdependence of human global communities and the interconnectivity of our habitat, naturally leads to our responsibility both to apply our psychological literacy as global citizens and to facilitate the development of psychological literacy in our students.

Many of our colleagues (e.g., White, Chapter 5 in this volume) have focused on why psychological literacy is important, and how best to impart this psychological literacy in undergraduate (UG) education. UG education is currently one of our most convenient vehicles for increasing psychological literacy in the general population. The psychology major is the second most popular major in the United States (National Center for Education Statistics, 2008), and an estimated 16% of all Australian university students take a first-year psychology course (Cranney et al., 2008b). Psychology major graduates with at least a Level 1 psychological literacy acquisition (Cranney & Morris, Chapter 18 in this volume) will have the capacity to apply psychological knowledge, skills, and attitudes to enhance their own well-being, and also that of their family and friends. Higher levels of psychological literacy attainment result in what Charlton and Lymburner (Chapter 17 in this volume) call “psychologically literate global citizens,” graduates who can use their psychological literacy to help solve local (e.g., a problem similar to that illustrated by the “Dr. Cantrell” case of McGovern et al., 2010) or global human problems (e.g., behavioral interventions to reduce water use). These are the psychologically literate community leaders—indeed, the more professions that our psychologically literate UG graduates influence or shape beyond psychology, the greater is the potential positive impact of psychological literacy. The value of becoming a psychologically literate psychology major and graduate needs to be emphasized within our own departments, as well as shared outside with the general public, including potential employers. Our work as educators is clear, and in undertaking this work, Bernstein (Chapter 20 in this volume) and McGovern (Chapter 21 in this volume) entreat us to be role models in displaying psychological literacy in our actual and virtual college classrooms.

Beyond the context of undergraduate education, Cynthia Belar of the Education Directorate of the American Psychological Association (APA) makes the point that there are large numbers (about one third) of high school students taking psychology in the United States, and that these classes “play a crucial role in promoting psychological literacy among our citizenry” (Clay, 2010, p. 64). Karandashev (Chapter 15 in this volume) makes a similar point about psychology education in contemporary Russia, and with the increasing numbers of high school students studying psychology in many different countries (Prandini, 2007) this educational context deserves much more attention with regard to psychological literacy.

A broader agenda for psychological literacy is signaled by Sarwono's (Chapter 13 in this volume) application of psychological principles to many behavioral contexts in Indonesia. In essence, the approach is to increase psychological literacy in the general population through media and other "outreach" activities of professional psychologists within the contexts they know best. One now sees more evidence for this kind of approach in the West—for example, the Association for Psychological Science (APS) has a "Bringing it Home" public oration at its annual conference that features a psychological scientist "translating" the psychological principles and findings of his or her particular research topic for "public consumption." Here we argue that the discipline and profession of psychology can and should reach far beyond formal educational contexts in order to increase the psychological literacy of the general population through more "popular" venues. We might add that the increasing number of trade books dealing with the popularization and application of psychological research findings (e.g., Fredrickson, 2009) also represents such forms of psychological literacy.

During our short official history as a discipline and a profession, we have been overly concerned with (a) establishing ourselves as a legitimate science, placing high value on knowledge creation, particularly through basic laboratory research, and (b) sorting out professional boundaries both within and outside of psychology. There has been less value placed on applied research and on facilitating the application of psychological principles to solving or preventing human problems. Now is the time for us to poke our heads beyond laboratory doors and cease our adolescent intradisciplinary squabbles. Perhaps unique to psychology, the science and the practitioner camps are inextricably intertwined (Benjamin & Baker, 2000), and we should be taking every opportunity to apply what we know to the benefit of humanity.

## INTERNATIONAL MODELS AND AIMS OF UG EDUCATION

Historically, European and American psychology has driven the development of psychology in other countries. A brief overview of models of UG education may give us some sense of the degree of overlap in the aims of such UG programs, and allow us to judge the extent to which such programs could be shaped to meet the aim of psychological literacy.

But first, we should consider what we may value or acknowledge as realities in judging the quality of a program (Cranney et al., 2008b, 2009). For example, do we value (a) education in disciplines other than psychology, during the UG program, (b) exposure to the possibility of other careers in psychology, besides the dominant Western individualistic clinical psychology profession, (c) a significant individual research experience, and (d) the gaining of personal maturity prior to entry into professional practice? What are some of the structural constraints linked to this goal? For example, does poor funding of professional programs necessitate departments of psychology drawing upon increased UG enrollments, which means that there may be large numbers of psychology majors who do not progress

to professional psychology, and large first-year psychology classes made possible by all UG programs being open to “other discipline” units? What are the accompanying societal constraints? For example, there may be pressure to produce mental health professionals in as few years as possible. Finally, what are the quality assurance (accreditation, registration/licensure) systems in place that shape university programs? Are these primarily input-driven (e.g., number of years) or output-driven (e.g., meeting a specific set of competencies)?

UG psychology education in the United States consists of four years, and the requirements for the major vary considerably across institutions, there being no *national* accreditation of the program. In undertaking state registration accreditations, departments of psychology often draw upon the APA Guidelines (2007) to make a case for quality education (Don Leitner, personal communication, Dec. 22, 2006). Division 2 of the APA, the Society for the Teaching of Psychology, also supports a voluntary system of departmental review (<http://teachpsych.org/otrp/deptconsult.php>). Nevertheless, there remains the real possibility, for example, that a student could complete a psychology major without ever taking a research methods course or a statistics course.

Most U.S. psychology degree programs specify undertaking course units across the arts and sciences, ensuring a broad education. There have been recent “calls for a core” for the psychology major; for example, Dunn and colleagues (2010) specified a nine-course major emphasizing ethics, diversity, and research methodology coupled with broad study of the discipline’s main areas of inquiry (i.e., learning and cognition, sociocultural issues, biopsychology, developmental psychology), as well as both an applied and a capstone experience. Yet, the U.S. system lacks a compulsory research thesis, and “honors” may involve students working with faculty on a research project in the fourth year or simply earning high grades. However, this designation is not a requirement for undertaking further graduate training. There appear to be two major aims of UG education in the United States: (a) to provide a general liberal arts and social sciences education, which may be an end in itself, and (b) to provide relevant disciplinary knowledge in preparation for application for graduate professional training, primarily for a PhD, often but not always in clinical psychology. However, it should be noted that it is possible to enter graduate programs in clinical psychology without having undertaken a psychology major. Admission to graduate programs is based on a student’s academic profile as measured by grade point average, standardized test scores (e.g., Graduate Record Exam [GRE]), letters of recommendation, and relevant experiences (e.g., fieldwork). In this sense, the UG major, because it is not a prerequisite for graduate training in psychology, is undervalued. The call for psychological literacy as a significant aim of UG education in the United States is recent (Halpern et al., 2010; McGovern et al., 2010) and overlaps with the first aim stated above.

The Bologna Model of education in Europe has been translated for psychology by the EuroPsy program (Lunt et al., 2001; Trapp & Upton, 2010). Essentially the UG program (cycle 1) is three years in duration, and focuses on acquisition of foundational knowledge, although it does also specify the acquisition of some generic practical skills, in particular diagnostic, interviewing, and group intervention

skills training. Some exposure to other disciplines is seen as essential, however, it is expected that most of the program will consist of coursework in psychology. There is no research thesis requirement; this is required instead in cycle 2, the two-year master's thesis (which is followed by a one-year internship prior to registration or licensure as a psychologist). The aims of UG education, then, appear to be a thorough grounding in the science of psychology, and preparation for cycle 2. Through the so-called Tuning Project (2004), countries such as Italy (Job et al., Chapter 12 in this volume) and Russia (Karandeshev, Chapter 15 in this volume) are attempting to realign their psychology education and training to meet the EuroPsy requirements; however, other countries, such as England, consider their current program to be adequate, if not superior, to the Bologna EuroPsy model.

The English model for UG education involves a three-year program, the majority of which is psychology, and includes a research thesis in year 3. The QAA Benchmarks (2007) specify foundational knowledge but no professional skills training. Clinical psychology training is undertaken increasingly in a three-year government-sponsored doctoral program, the delivery of which is primarily driven by the government. UG programs are accredited by the British Psychological Society in England. The aims of UG psychology in England, then, appear to be primarily as foundational preparation for graduate professional psychology training. This is despite the facts that (a) less than 25 percent of psychology majors will go on to undertake any other form of higher education related to psychology (research or professional), and (b) it may soon become possible to enter graduate programs in clinical psychology without previously undertaking a psychology major (Upton & Trapp, 2010). Currently, a re-examination of the aims of UG psychology in England is under way (Trapp, Banister, Ellis, Latto, Miell, & Upton, 2011).

The Australian UG psychology major consists of three years and is accredited by a national body. There are content specifications, more recently in the form of graduate attributes, including knowledge, research methodology, critical thinking, values, communication, and application. Less than 50 percent of the program is required to be psychology; thus this requirement is somewhere between the English and the U.S. model. A fourth (usually honors) year requires a substantial research thesis, as well as some low-level exposure to assessment and intervention. The latter is driven by the desire of the government, but not the profession, to maintain an archaic route to registration/licensure as a psychologist, which involves having completed an accredited three-year and year 4 sequence, and having undertaken two years of supervised practice as a psychologist. Under a new national registration system (the Psychology Board of Australia), there is the possibility of an exam being imposed as an additional requirement for the "4+2" pathway to registration as psychologists. The more professionally accepted pathway to registration is through a two-year master's program (or three-year doctoral program) in one of several psychology specialties (e.g., clinical, forensic, organizational). Thus, the current aim of UG education is to provide the basic science foundation for further graduate study (or supervision) to become a professional psychologist or a researcher/academic.

Asian models are highly variable but usually simulate the American or European models (McCarthy, 2007; Sarwono, Chapter 13 in this volume). One notable aspect is that an UG psychology major may not be the only entry to graduate training in clinical psychology. South American (e.g., Abramson & Bartoszeck, 2006; McCarthy, Hutz, & Gomes, 2007) and African (e.g., Plattner & Moagi-Gulubane, 2010) UG programs are more likely to be professionally oriented from the very first UG year; this choice clearly reflects a certain pragmatism in approaching the need for professional psychology training in non-affluent countries.

Four points emerge from this very brief overview of primarily Western programs. First, although there is some variation in the aims of a three- or four-year UG program, as McGovern and colleagues (2010) argued, there is also substantial overlap in the desired outcomes of some national programs, with the primary shared aim being to impart foundational psychological knowledge. Some points of difference include (1) whether students are required to undertake a research thesis, (2) whether any “pre-professional” (or professional) skill training is undertaken, and (3) the extent to which attributes such as critical thinking, communication, values, and application are explicitly developed in the curriculum. This variation may decrease the global “mobility” of UG graduates; for example, it is unlikely that U.S. graduates will gain admission to a clinical graduate program in Australia unless they can provide evidence that they have undertaken an independent research project. Second, there is variation in the systems for quality control, which again will affect global mobility. Third, there is little if any explicit emphasis on psychological literacy as a viable outcome for the estimated 75 percent or so of graduates who do not undertake further psychology training following their psychology major (and, of course, psychological literacy should be seen as foundational for the other 25 percent, as well). Fourth, there appears to be little emphasis on the employment destinations of those 75 percent of graduates who do not undertake further training in research or professional psychology.

We argue that, given some “tuning” of our curriculum, and particularly our pedagogy, we should be able to accommodate within a psychology major, the following aims:

- Laying the science foundations for subsequent training in research or in professional psychology
- Acquiring psychological literacy, at least to a basic level of application to personal and work lives, and preferably to a higher level, producing psychologically literate global citizen leaders who will make positive contributions to their communities (Cranney & Morris, Chapter 18 in this volume; Charlton & Lymburner, Chapter 17 in this volume; Halpern et al., 2010).

If these two aims are met, then psychology major graduates also will be (a) highly employable (Hamilton, Charlton, & Elmes, 2008) and (b) good ambassadors for the discipline and profession of psychology, helping to alleviate public misperceptions about the nature of psychology, and enabling greater contribution



of psychology to solving societal problems. In the next section we consider how these aims can be met within UG psychology programs.

## CURRICULUM RENEWAL AND PEDAGOGY

A simple definition of “curriculum” is that it is “an educational plan that spells out which goals and objectives should be achieved, which topics should be covered and which methods are to be used for learning, teaching and evaluation” (Wojtczak, 2002, p. 1). Educational theorists recognize that there may be differences between the formally prescribed intended learning outcomes in a curriculum, what the individual classroom educator intends, and what students perceive to be important and thus learn (i.e., differences between the “planned” and “received” curriculum; Kelly, 2004). In addition, the “informal curriculum” is a set of activities (extracurricular activities) that may be organized by the education provider, but that does not attract a grade (Kelly, 2004). Kelly (2004) argues that educators should be concerned about the “total curriculum”—that is, the entire curricular experience for the student, including what is termed the “hidden curriculum” (see also Ratcliffe, 1996).

Curriculum renewal involves review of current curricula and practices against stated criteria, followed by strategic change programs to achieve specific aims (e.g., Macquarie University, 2008). Review of the aims, outcomes, curricular structures, and pedagogical approaches of UG psychology education (i.e., the initiation of curriculum renewal) was the purpose of the National Conference on Undergraduate Education in Psychology at the University of Puget Sound in 2008, which resulted in the volume edited by Halpern (2010), the delineation of psychological literacy and the psychologically literate citizen as desired outcomes of UG psychology (McGovern et al., 2010), and the delineation of the Principles for Quality Undergraduate Education in Psychology (Halpern et al., 2010), one of which is that students should strive to become psychologically literate citizens.

Bobbit (1918), one of the earliest writers on the nature of the curriculum, idealistically described the curriculum as a social engineering mechanism whereby “scientific experts” determined (a) what “qualities” should be developed in inexperienced individuals to meet the needs of society and (b) how to develop such qualities through curriculum activities. In reality, current higher education psychology curricula likely reflect what is perceived to be the current needs of society—for example, the delivery of a liberal education (for broader, flexible employment options) or preparation for professional psychology training. The nature of current curricula is determined by disciplinary traditions, authoritative bodies such as accreditation organizations, and local constraints and opportunities. We argue here that an additional explicit aim of UG education should be psychological literacy, and this aim should be delivered through renewal of the curriculum.

“Pedagogy” is what educators do to facilitate students’ acquisition of the learning outcomes, as evidenced by assessment performance. There are many different

definitions, approaches, and theories of pedagogy (Watkins & Mortimore, 1999). For example, "critical pedagogy" refers to a teaching approach that recognizes the social, political, and historical construction of knowledge and societal structures and norms (Kincheloe, 2008). This approach may be aligned with the movement in psychology called "critical psychology," which challenges the Western positivist orientation in psychological science and practice (e.g., Kirschner & Martin, 2010). Another example is "creative pedagogy," which is "a trend in contemporary education emphasizing creativity and innovation as the ultimate goal for individual development and aiming at creation of a creator, not just an informed and trained individual" (Aleinikov, 1999, p. 837). Creative pedagogy can be applied to any subject matter, and the approach is congruent with (a) the general higher education goal to produce life-long learners through student-centered approaches and (b) the UG psychology goal to build students' capability to engage in continuous personal and professional development (e.g., Graduate Attribute 6, Cranney et al., 2008b).

One pedagogical tool that has gained transdisciplinary appeal is Bloom and associates' (1956) "original" taxonomy of educational objectives (knowledge, comprehension, application, analysis, synthesis, evaluation), whereby it was generally considered preferable that objectives beyond the knowledge level were achieved. Krathwahl's (2002) "revised" taxonomy contains two dimensions: subject matter content and cognitive processes. The four categories of knowledge are factual knowledge, conceptual knowledge, procedural knowledge, and metacognitive knowledge ("knowledge of cognition as well as awareness and knowledge of one's own cognition," including self-knowledge, p. 214). The six cognitive processes are remember, understand, apply ("carrying out or using a procedure in a given situation"—executing and implementing, p. 215), analyze, evaluate, and create ("putting elements together to form a novel, coherent whole or make an original product"—generating, planning, producing, p. 215). Although this is a cognitive hierarchy of sorts, this does not mean that application, for example, cannot occur at an early stage of the curriculum; for example, a simple but fundamental psychological principle (e.g., knowledge of how to test a hypothesis) could be implemented by students in a first-year group research project (Cranney & Morris, 2009; see also Klatzky, 2009). The value of this taxonomy is that it has some psychological credibility in terms of its relationship to cognitive psychology, and so can be applied to classifying learning outcomes and so guide pedagogical strategies. Higher-level integrative knowledge aspects (e.g., metacognitive knowledge, including self-knowledge; Wilson, 2009) and cognitive processes (e.g., evaluate and create) would be indicative of psychological literacy, which is considered the "gestalt concept" that encapsulates many semi-discrete attributes or capabilities.

How can the aim of psychological literacy as a psychology major outcome be realized through renewed curricular and pedagogical approaches? We give two examples here: the first-year psychology unit and the capstone unit in the final year of the program (here "unit" is a single subject or module in the larger degree program). In the higher education literature, there has been recent focus on "induction," the transition experience in first year, particularly with the increasingly diverse

student body as higher education becomes more accessible. We should not ignore the opportunity to shape first-year (introductory) psychology units to facilitate transition, and simultaneously imbue maximum psychological literacy.

To make the most of this opportunity, some initial effort will be needed on the part of educators to “tune” their courses to include these aims; this effort will be less if there is sharing of successful strategies in the wider psychology educator community. Students may need to work harder to achieve these increased aims; however, pedagogical approaches aimed at increasing student engagement, as well as increased centrally provided safety-net systems to support the development of enabling skills (Starfield et al., 2005) in students from non-privileged backgrounds, should turn such effort into what Bjork and Linn (2006) call “desirable difficulties.” For example, the establishment of small groups of students working on a group assessment, supported by group strategies such as those outlined by Gibbs (1995), provides the possibility of the development of social support for first-year students during the sometimes challenging transition to higher education (Cranney et al., 2008a). In learning to write a research report, scaffolded group-based assessments on information literacy and deconstructing a journal research article will help students build up their skills not only to support the eventual writing of the research report, but also to support other assessments that require those enabling skills (Cranney et al., 2008a).

A further consideration is that students and graduates who have taken quality first-year psychology units should be able to recognize the potential for psychology to contribute to solving behavioral problems; even when they have embarked on non-psychology career paths, they will be more open to such a contribution. In this way, students and graduates will contribute to more fruitful interdisciplinary and interprofessional collaborations (Cranney, 2008).

In the final year of the UG program (whether this is third or fourth year), it is desirable for students to take a capstone unit (Dunn & McCarthy, 2010) whereby there is an opportunity for students (a) to integrate what they have learned across the previous psychology units and (b) to prepare for the next step in their career development (whether this is research or professional psychology training, or non-professional psychology careers). For example, capstone courses could allow students to explore some research question or issue by applying both psychological knowledge learned across the major as well as liberal education skills acquired elsewhere in the UG curriculum (Dunn & McCarthy, 2010). Some argue that a transdisciplinary integrative experience is even more beneficial, and where this is possible through interdisciplinary collaborations, this should be considered, given the likelihood of graduates needing to work in multidisciplinary teams. Capstones preferably involve application of psychological principles to “real-life” problems. For example, McGovern and coworkers’ (2010) “Dr. Cantrell” model case involved groups of students testing different hypotheses about why a school counselor was not being appropriately used in a elementary school; Harré and colleagues (Chapter 16 in this volume) describe a year 4 community psychology project on developing environmentally friendly behavior in a local school.

Other possible capstone experiences can be built around the history of psychology course (Benjamin, 2010), a research intensive course (Messer & Porter, 2010) or honors thesis research (Serdikoff, 2010). Some faculty members craft capstone experiences by having students participate as members of research teams (Beins & Wann, 2010) or by doing fieldwork (Grayson, 2010). Capstone experiences can even be designed to help students make the transition from college to the workplace (Hettich, 2010).

In programs where there is an individual research thesis, that project is sometimes conceptualized as a capstone experience. However, it is a relatively narrow capstone experience, and could easily be enhanced by having students (a) keep an assessable journal of the process, and (b) write a reflection of how their year's experience integrates research and practice in their UG education, as a "scientist-practitioner" capstone statement.

A pedagogical strategy that could complement the capstone experience is the use of a whole-program graduate attribute portfolio, whereby students continuously track their development of these attributes from their first to their final year, reflecting on what progress they have made and what formal and informal curricular activities they could undertake to further develop their attributes (e.g., Cooper, Cohen, & Pooley, 2006; Cranney et al., 2005). These activities can be assessed using the "new" taxonomy. Indeed, this assessment provides an index of the capacity for continuous professional and personal development.

## CONCLUSIONS

One fundamental outcome of university education should be the ability to challenge one's own and others' beliefs with publicly verifiable knowledge derived through rigorous methodology, such as the scientific method (Stanovich, 2009). One of the main outcomes of UG psychology education should be that students understand that many aspects of their personal, implicit "theories" of human behavior are flawed. By creating opportunities through structured learning activities to experience challenges to their beliefs and attitudes, students become more critical and questioning about other aspects of their thinking, and are more likely to search out sound evidence to test claims regarding human behavior. The process of "unlearning" these false beliefs about human behavior is difficult and requires courage and effort on behalf of both the learner and the educator (McGovern et al., 2010). This kind of hard thinking, however, is surely what a university education should be about (Armstrong, 2008; Bjork & Linn, 2006). Although most educators aspire to teaching students such critical thinking skills (Halpern & Butler, Chapter 3 in this volume), because of the nature of the discipline, psychology educators should be more effective than most in this domain, and there is some evidence to support this view (Lehman, Lempert, & Nisbett, 1988; see also Pascarella & Terenzini, 2005). Critical thinking about human behavior is, of course, a core aspect of psychological literacy (Cranney, 2008).

As many current global problems such as climate change, terrorism, and ill health are related to human behavior (Marsella, 2007), we need to accelerate psychological literacy in the general population. The increasing popularity of UG psychology signals not only an expressed need by members of the public to better understand human behavior, but also an opportunity for psychology educators to assist current generations to gain the knowledge, skills, and especially attitudes to help solve these global problems.

“Educators are the stewards and custodians of the discipline” . . . that role also makes education a lightning rod for tensions over such issues as psychology’s identity. Given the breadth and diversity of the discipline, conflicts occur as to what and how psychology is to be taught as well as how psychologists are to be prepared. “Education is the fundamental infrastructure for the whole discipline—not just for practice, science or public interest—but in creating the next generation of psychologists for all purposes.” (Clay, 2010, p. 65, quoting Cynthia Belar)

We argue that psychology educators are the stewards and custodians of humanity, as through the application of psychological literacy we can help students—our future leaders—become more psychologically literate. Indeed, UG psychology education should produce graduates motivated to reduce psychological illiteracy in the general population.

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