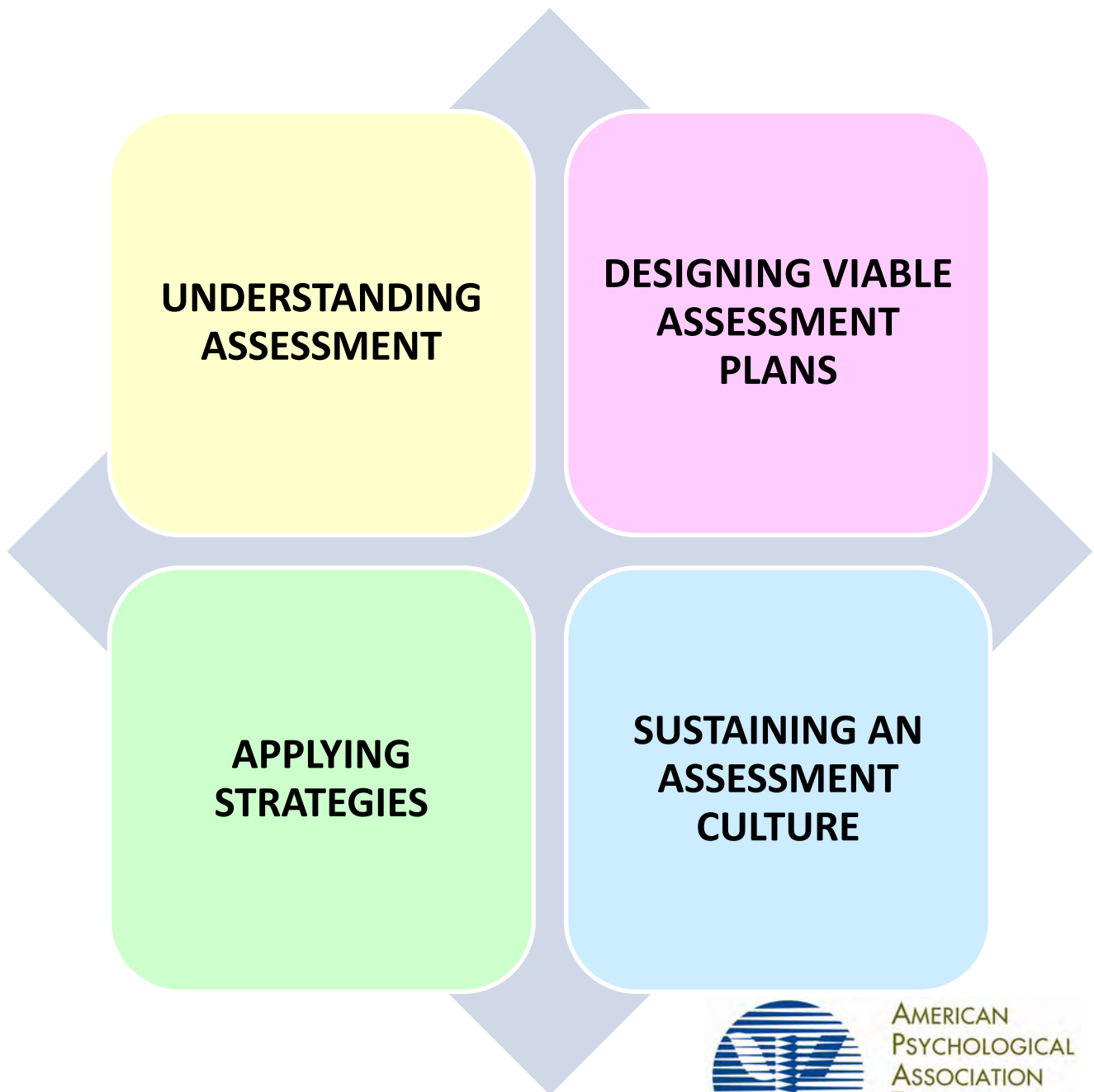


# The Assessment CyberGuide for Learning Goals and Outcomes

(Second Edition, November 2009)

Compiled by Thomas Pusateri

with assistance from Jane Halonen, Bill Hill & Maureen McCarthy



AMERICAN  
PSYCHOLOGICAL  
ASSOCIATION  
EDUCATION  
DIRECTORATE

## The Assessment CyberGuide for Learning Goals and Outcomes (Second Edition) revised October 2009

produced under the auspices of the Board of Educational Affairs (BEA), American Psychological Association (APA)

### PREFACE

The Assessment CyberGuide evolved from the work of the APA Board of Education Affairs' (BEA) Task Force on Psychology Major Competencies. In March 2002, the BEA endorsed the task force's report on Undergraduate Psychology Major Learning Goals and Outcomes. Subsequently, BEA charged the task force to develop a companion document to address assessment strategies based upon these learning goals and outcomes. Members of the task force convened an Assessment CyberGuide Task Force, which produced the first version of the Assessment CyberGuide in 2002.

In 2006, the APA Council of Representatives adopted a revised version of the task force's report under the title *APA Guidelines for the Undergraduate Psychology Major* ([http://www.apa.org/ed/psymajor\\_guideline.pdf](http://www.apa.org/ed/psymajor_guideline.pdf)).

In 2009, the Assessment Cyberguide Revision Task Force updated the CyberGuide to reflect current practice and revised links. The CyberGuide serves as a companion resource for implementing the APA Guidelines for the Undergraduate Major in Psychology. These resources should aid psychology departments and their faculty to design the most appropriate and effective assessment plans.

We have organized this Cyberguide into four parts that will assist departments in developing assessment plans:

- A. Understanding Assessment: Departmental, Institutional, Educational, and Societal Perspectives
- B. Designing Viable Assessment Plans
- C. Sustaining an Assessment Culture
- D. Applying Assessment Strategies in Psychology

We are taking advantage of the flexibility of the cyber medium to provide links to resources or the full-text documents when they are available. Otherwise, the recommendations and insights provided in this CyberGuide emerge from the collective experience and scholarship of the members of the Assessment CyberGuide Task Force and the Assessment CyberGuide Revision Task Force.

### ACKNOWLEDGEMENTS

We are indebted to the contributions of Jane Halonen and the members of both CyberGuide Task Forces who spent countless hours working on this project. In addition, we extend special thanks and appreciation to Tom Pusateri for his extensive editing, formatting, and additions to the current revision.

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**A. Understanding Assessment**

**1. Departmental Perspective: Questions and Recommendations from the APA Task Force**

Members of the Task Force on Psychology Major Competencies provide answers to a set of questions and provide a list of recommendations for developing effective assessment processes at the departmental level.

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**Considering Important Questions in Assessment**

Jane Halonen and Bill Hill, APA Board of Educational Affairs Task Force on Psychology Major Competencies (2002)

Departments should maintain a dynamic assessment plan and actively engage in assessment practices throughout the educational process. Inherent in this plan is the need to evaluate student progress toward the learning goals and outcomes established in the *APA Guidelines for the Undergraduate Major in Psychology* (2007). Assessment of progress toward these goals includes evaluation of student learning both developmentally and at the end of the major. A viable assessment plan also includes student self-report data, student perceptions and archival records. We describe and evaluate each of these assessment categories and we make specific recommendations for using these methods for maximizing the assessment plan. First, we consider several important questions in assessment.

***Why are you doing assessment?***

**You have to.** Accreditation in higher education requires evidence. Departments now routinely face requirements for verifying that the institution can live up to its mission statement. An external mandate for assessment will not produce the best conditions for assessment practices, but required assessment planning has become an operational reality in higher education.

**You want to.** Faculty recognize that sound assessment practices will provide appropriate feedback about the quality of the education they offer. The results can influence changes in curriculum practices and lead to improvement in student learning.

***Who is the target of assessment?***

**Students.** We can assess the attitudes and performance of students at various stages throughout the curriculum and after graduation as alumni.

**Faculty.** Faculty quality can be assessed through peer review, student evaluations, administrator critique, or external review.

**Program Quality.** Although students provide the data source, the target for improvement will often be the program itself.

***When and where do you assess?***

**Classroom Grading.** Course performance judged by the instructor of record for a course does provide a measure of student learning. However, uncorroborated judgment within a class does not typically meet the more strenuous requirements advocated by accrediting agencies.

**Embedded Assessment.** Departments demonstrate efficient planning when they embed assessment practices in existing coursework. The department agrees in which courses this data collection should occur and collectively designs the strategy and uses the data to provide feedback about student progress within the program.

**Milestone.** Some programs may designate certain gate-keeping courses as opportunities to capture specific skills levels. An example of embedded assessment is the acceptable production of an APA-style experimental paper as a benchmark of learning experimental psychology. Capstone courses may routinely provide an assessment opportunity that reflects development up to that point.

**Pre-post Comparisons.** Departments may measure knowledge and abilities on the front end of a program to establish baseline for their students. They may re-administer the same instrument at the conclusion of the program to determine "value added" by the student's educational experiences.

**"Assessment Days."** Many departments designate a common time to assess student progress. In some cases, classes may be canceled to facilitate completion of the work; however, care needs to be taken to insure student motivation in rendering solid performance.

**After graduation.** Interest in alumni satisfaction and performance skills prompts many departments to assess students after they have graduated. Length of time can range from six months after graduation (e.g., typical length of time to look at employment success) to five years (e.g. typical length of time to look at graduate school completion rates/adjustment). Employers or graduate advisors may be asked to evaluate the former student's strengths and weaknesses.

### ***What do you assess?***

**Achievement in the Major.** Assessment activity can establish how well students have learned the content, skills, and attitudes of the major. Quality is easiest to assess when the department has formulated explicit learning outcomes that characterize the major.

**General Education Achievement.** Some institutions assess the overall development within the liberal arts.

**Performance Patterns.** Programs may want answers to specific issues about student performance. For example, how do transfer students compare to students who have been in the program from the outset of their studies? How do female students compare to male students in their relative performances?

**Impact of Faculty or Program.** Program faculty may want to determine what kind of impact the program or the faculty have had on students beyond their academic achievement. Satisfaction surveys, focus groups, and other strategies may help the faculty to address these questions.

**Quality of Instructional Practice.** Faculty may want to evaluate whether a new instructional technique produces improved learning over other approaches. They may evaluate questions of this type through systematic comparison of student performances across semesters.

### ***Who assesses?***

**Faculty.** Historically, faculty have been charged with evaluating the quality of their students' work. They remain the primary source of expert feedback on student performance in assessment activities.

**Expert External Judges.** Assessors can provide feedback on student performance as long as they can be trained properly on performance criteria. Experts can be recruited from among other faculty or professionals in the community.

**Peers.** Student colleagues can provide feedback on performance if properly trained on clear criteria.

**Employers.** We can find out the quality of performance of our graduates by asking for a review of their work from current employers. Although the student is the focus, the attitudes being assessed are the employers.

**Family.** Some strategies can involve assessing parental satisfaction with changes in their children as a result of education. Although the student is the focus of the assessment, the attitudes being assessed are the parents.

**Students.** Students can evaluate their own performances through self-assessment strategies. Advocates of self-assessment suggest such practices can encourage student development and independence.

### ***What is the quality of your assessment measures?***

**Validity and reliability of the measure.** The selected strategy needs to produce both a valid and reliable measure of learning. Students should be optimally motivated to engage in the assessment.

**Appropriateness for the targeted learning goal as well as the mission and goal of the program.** The measure should be logically connected to the objectives of the assessment.

### ***How will you use the assessment results?***

**Direct feedback to students/faculty.** In most cases, the individuals who are being assessed can benefit from feedback on their performances. An assessment experience can highlight both strengths and areas of potential weakness, which can have an impact on individual plans for improvement.

**Systematic feedback for program improvement.** The results of assessment can be used by program faculty to determine strengths and weaknesses. Strengths can be used to enhance recruitment and procure resources. Weaknesses can be remediated once they have been recognized.

**Benchmarking for program comparison.** In some institutions, programs may have to provide evidence of effectiveness for continued support. Clear indications of effectiveness may secure additional support funds.

### ***How will you manage assessment obligations with other academic tasks?***

**Adjust loads to reflect assessment requirements.** Faculty members are unlikely to be successful or enthusiastic with assessment responsibilities treated as an "add on." Faculty loads must be adjusted to make time and space for the activities related to assessment. Provide release time for substantial assessment contributions.

**Embed assessment activities, wherever possible.** Taking advantage of existing structures can reduce the impression that assessment is eating up discretionary time.

**Reward successful assessment activity.** Assessment participation should receive public recognition and financial reward to enhance the incentive for faculty to participate.



## **Best Practices in Assessment: Top 10 Task Force Recommendations**

from the APA Board of Educational Affairs Task Force on Psychology Major Competencies (2002)

### **1. Encourage department ownership to drive the process.**

Faculty resistance to assessment activity can defeat the best designed assessment practices. Assessment planning should grow out of the fundamental questions the faculty have about how their contributions shape program success. This emphasis may involve addressing differences between an individual faculty member's personal goals (e.g. income, convenience, lifestyle, security, autonomy) and the collective goals of the department.

### **2. Define your objectives in the context of your institutional mission.**

Create a shared mission and goals statement that reflects an emphasis on student learning. The values of the institution should be reflected in your department's plan. Faculty identification with the institution will reinforce assessment activities, particularly if faculty can envision that their results will have a positive impact on how the institution works.

### **3. Focus on collaboration and teamwork.**

Faculty members must agree on assessment goals for planning to be meaningful. They may have to rise to a higher level of collaboration than may have been traditionally practiced in most departments. Collaboration within the department, across departments, and with higher administration will facilitate the best outcomes from assessment planning. All constituents must recognize that assessment skills must be developed and that colleagues can assist each other by sharing practices and strategies.

### **4. Clarify the purpose of assessment.**

Assessment can serve dual purposes: Assessment can promote student learning or provide evidence for accountability requirements through an evaluation of strengths and weaknesses. Wherever possible, students should experience a direct, positive benefit from their participation in assessment activities.

### **5. Identify clear, measurable, and developmental student learning**

Explicit identification of learning expectations facilitates the department's coherence about their goals. Sharing those expectations explicitly with students can provide an effective learning scaffold on which students can build their experiences and render effective performance. Outcomes can be specified in a developmental hierarchy, where possible.

### **6. Use multiple measures and sources consistent with resources.**

Effective assessment planning can only occur when properly supported with appropriate time, money, and recognition for good work. The expansiveness of the assessment plan will depend on those resources. As resources permit, additional measures can be added to planning. These measures address variations in learning style, differences in types of learning, and interests from variable stakeholders.

### **7. Implement continuous assessment with clear, manageable timelines.**

Better assessment practice involves spreading out assessment activity throughout the year and across years rather than conducting a marathon short-term assessment effort in a single year. Projecting a schedule of regular formal reviews can facilitate appropriate interim activity.

### **8. Help students succeed on assessment tasks.**

Students will fare best in assessment activities when faculty make expectations explicit, provide detailed instructions, and offer samples or models of successful performance. They will benefit most with opportunities to practice prior to assessment and when given detailed feedback about the quality of their performance.

### **9. Interpret and use assessment results appropriately.**

Assessment should be a stimulus for growth, renewal, and improvement, not an action that generates data to ensure positive outcomes. Linking funding to assessment outcomes may encourage artificial results. Assessment data should not be used for personnel decisions. If cross-institution comparisons are inevitable, care should be taken to ensure comparisons across comparable institutions (benchmarking).

### **10. Evaluate your assessment practices.**

Results from assessment activity should be evaluated to address their reliability, validity, and utility. Poor student performance can reflect limited learning or an ill-designed assessment process. Examining how effectively the assessment strategy meets departmental needs is a critical step in the evolution of the department plan.

**A. Understanding Assessment**

**2. Institutional Perspective: Supporting an Institution’s Culture of Assessment**

Peggy Maki, former Director of Assessment for the American Association for Higher Education, has written several articles that discuss strategies for institutions to develop and sustain a culture of assessment. Here are excerpts, references, and links to two of her articles.

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**Developing an Assessment Plan to Learn about Student Learning**

Peggy Maki

- Part I: Determining your institution's expectations
  - A. State expected outcomes
  - B. Identify where expected outcomes are addressed
  - C. Determine methods and criteria to assess outcomes
  - D. State institution's or program's level of expected performance
  - E. Identify and collect baseline information
- Part II: Determining timing, identifying cohort(s), and assigning responsibility
  - A. Determine whom you will assess
  - B. Establish a schedule for assessment
  - C. Determine who will interpret results
- Part III: Interpreting and sharing results to enhance institutional effectiveness
  - A. Interpret how results will inform teaching/learning and decision making
  - B. Determine how and with whom you will share interpretations
  - C. Decide how your institution will follow-up on implemented changes

Maki, P. L. (2002). Developing an assessment plan to learn about student learning. *The Journal of Academic Librarianship*, 28, 8-13. Retrieved from <http://tinyurl.com/Maki2002>

**Moving from Paperwork to Pedagogy: Channeling Intellectual Curiosity into a Commitment to Assessment**

Peggy Maki

Here are some questions that might extend faculty intellectual curiosity into inquiry about student learning:

- What kinds of understanding, abilities, dispositions, habits of mind, and ways of thinking, knowing, and problem solving do faculty members believe students should achieve by the time they graduate? How do faculty members build on one another’s work to ensure that student have ample opportunity to develop institutional and programmatic learning outcomes?
- What evidence would document students’ progress towards those expectations, and how could that evidence be captured so that faculty members could learn about patterns of student achievement to inform pedagogy and curriculum?
- How do educational experiences outside the classroom complement and contribute to expected learning outcomes? What do the curricular and other educational experiences “add up to”?
- Given the diversity of students in higher education, including their experiences and learning histories, which students benefit from which teaching strategies, educational experiences, or educational processes believed to be responsible for contributing to expected student learning and development?...
- What assumptions about teaching and learning underlie how faculty members teach in a discipline? What assumptions about assessment methods underlie when and how faculty members assess their students’ learning? How are methods of assessment aligned with content, pedagogy, and instructional design to deepen students’ learning to foster transference of knowledge and abilities to new situations?

Maki, P. L. (2002). Moving from paperwork to pedagogy: Channeling intellectual curiosity into a commitment to assessment. *AAHE Bulletin*, 54(9), 3-5. Retrieved from [http://www.aacsb.edu/resource\\_centers/assessment/Maki-Reprint.asp](http://www.aacsb.edu/resource_centers/assessment/Maki-Reprint.asp)

**Additional Resource**

Maki, P. L. (2004). *Assessing for learning: Building a sustainable commitment across the institution*. Sterling, VA: Stylus. Retrieved from <http://www.styluspub.com/clients/STY/Books/BookDetail.aspx?productID=85566>

**A. Understanding Assessment**

**3. Undergraduate Education Perspective: Principles for Sound Assessment Practices**

In 1993, a task force from the American Association of Higher Education (AAHE) articulated some philosophical principles about enacting assessment planning. This entry summarizes nine ideas and provides a link to the original article. Lee Shulman (2007) provided a related set of principles in response to the recent Spellings Commission report.

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**Principles of Good Practice for Assessing Student Learning**

developed under the auspices of the  
American Association of Higher Education's (AAHE) Assessment Forum

1. The assessment of student learning begins with educational values.
2. Assessment is most effective when it reflects an understanding of learning as multidimensional, integrated, and revealed in performance over time.
3. Assessment works best when the programs it seeks to improve have clear, explicitly stated purposes.
4. Assessment requires attention to outcomes but also and equally to the experiences that lead to those outcomes.
5. Assessment works best when it is ongoing and not episodic.
6. Assessment fosters wider improvement when representatives from across the educational community are involved.
7. Assessment makes a difference when it begins with issues of use and illuminates questions that people really care about.
8. Assessment is most likely to lead to improvement when it is part of a larger set of conditions that promote change.
9. Through assessment, educators meet responsibilities to students and to the public.

Astin, A. W., Banta, T. W., Cross, K. P., El-Khawas, E., Ewell, P. T., Hutchings, P., Marchese, T. J., McClenney, K. M., Mentkowski, M., Miller, M. A., Moran, E. T., & Wright, B. D. (1993). Principles of good practice for assessing student learning. *Leadership Abstracts*, 6(4), 1-2.

The full version of this article is available from Education Resources Information Center (ERIC), [http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/0000019b/80/15/56/76.pdf](http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/15/56/76.pdf)

**Seven Pillars of Assessment for Accountability**

Lee Shulman

1. Become explicit about the story you need to tell and the rationale for choosing it.
2. Do not think that there is a "bottom line." An early step in the deployment of any instrument, new or old, should be a process of locating the instrument in a larger conceptual framework that explicitly stipulates what it does measure and what it does not.
3. Design multiple measures... [N]early any use of assessment for serious practical and policy guidance should intentionally employ an array of instruments that will constitute a "union of insufficiencies."
4. Work on combining multiple measures.
5. Remember that high stakes corrupt.
6. Embed assessment into ongoing instruction.
7. Become an active and collaborative site for research on new forms of assessment, new technologies to support such work, and better strategies for integration of such approaches with instruction

Shulman, L. S. (2007). Counting and recounting: Assessment and the quest for accountability. *Change: The Magazine of Higher Learning*, 39(1), 20-25.

The full version of this article is available from the Web site of *Change: The Magazine of Higher Learning*: <http://www.changemag.org/Archives/Back%20Issues/January-February%202007/full-counting-recounting.html>

**A. UNDERSTANDING ASSESSMENT****4. Societal Perspective: National and International Conversations on Assessment and Accountability**

To provide a broader context for discussions on assessment, we briefly describe the Spellings Report, the Bologna Process, and assessment resources from some national organizations and associations.

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**National Perspective: Spellings Commission Report**

In September 2006, The United States Department of Education published a report and several issue papers (available online at <http://www.ed.gov/about/bdscomm/list/hiedfuture/reports.html>) that called for reforms in the country's higher education system in six key areas: Access, Cost and Affordability, Financial Aid, Learning, Transparency and Accountability, and Innovation. Here is a summary of their recommendations concerning the two areas most related to assessment of student learning.

**Learning:** "In our view, correcting shortcomings in educational quality and promoting innovation will require a series of related steps, beginning with some of the accountability mechanisms that are summarized below and discussed at greater length later in this report. In addition, we urge postsecondary institutions to make a commitment to embrace new pedagogies, curricula, and technologies to improve student learning."

**Transparency and Accountability:** "We believe that improved accountability is vital to ensuring the success of all the other reforms we propose. Colleges and universities must become more transparent about cost, price, and student success outcomes, and must willingly share this information with students and families. Student achievement, which is inextricably connected to institutional success, must be measured by institutions on a 'value-added' basis that takes into account students' academic baseline when assessing their results. This information should be made available to students, and reported publicly in aggregate form to provide consumers and policymakers an accessible, understandable way to measure the relative effectiveness of different colleges and universities."

U.S. Department of Education (2006). *A test of leadership: Charting the future of U.S. higher education*. Washington, DC: Author. (ERIC Document Reproduction Service No. ED493504)

**International Perspective: The Bologna Process**

In 1999, a Joint Declaration of the European Ministers of Education established the "Bologna Process" whose goal is to develop shared standards and articulation agreements for all academic degree programs across all participating countries. The European Commission's Web site indicates that "The three priorities of the Bologna process are: Introduction of the three cycle system (bachelor/master/doctorate), quality assurance and recognition of qualifications and periods of study." ([http://ec.europa.eu/education/higher-education/doc1290\\_en.htm](http://ec.europa.eu/education/higher-education/doc1290_en.htm))

The following articles discuss the Bologna Process in relation to degree programs in psychology. The abstracts of these articles can be viewed at <http://www.psycnet.org/journals/epp/10/2/> by clicking on the links to the "Full Text/HTML version of each article:

Bartram, D. & Roe, R. A. (2005). Definition and assessment of competences in the context of the European Diploma in Psychology. *European Psychologist, 10*, 93-102.

Fisch, R. (2005). Commentary on the articles by Lunt, Bartram and Roe, and Poortinga. *European Psychologist, 10*, 110-112.

Frederickson, N. (2005). Commentary on the articles by Lunt, Bartram and Roe, and Poortinga. *European Psychologist, 10*, 112-113.

Lunt, I. (2005). Reply to the commentaries on the articles by Lunt, Bartram and Roe, and Poortinga. *European Psychologist, 10*, 113-115.

Lunt, I. (2005). The implications of the 'Bologna Process' for the development of a European Qualification in Psychology. *European Psychologist, 10*, 86-92.

Poortinga, Y. H. (2005). Balancing individual interests and quality of the profession in the formulation of professional standards. *European Psychologist, 10*, 103-109.

## National Associations and Organizations of Higher Education: Assessment Resources

The following national associations and organizations prepare resources and materials on assessment and accountability in higher education that may be relevant to psychology departments in some institutions.

### **Association of American Colleges and Universities (AAC&U):** <http://www.aacu.org>

AAC&U leads initiatives and disseminates publications that promote and support assessment of student learning in higher education. Here are examples of AAC&U publications on assessment:

- 2008    New Leadership for Student Learning and Accountability: A Statement of Principles, Commitments to Action ([http://www.aacu.org/resources/assessment/documents/New\\_Leadership\\_Statement.pdf](http://www.aacu.org/resources/assessment/documents/New_Leadership_Statement.pdf))  
A joint statement with the Council on Higher Education Accreditation (CHEA) that calls upon colleges and universities to articulate goals for student learning and assesses student achievement towards those goals.
- 2008    Our Students' Best Work: A Framework for Accountability Worthy of Our Mission  
(Available for purchase at <http://tinyurl.com/StudentBestWork>)  
The statement calls for a focus on a broad set of learning outcomes essential for global citizenship and success in today's volatile and competitive workplace.
- 2005    Liberal Education Outcomes: A Preliminary Report on Student Achievement in College  
([http://www.aacu.org/advocacy/pdfs/LEAP\\_Report\\_FINAL.pdf](http://www.aacu.org/advocacy/pdfs/LEAP_Report_FINAL.pdf))  
AAC&U proposed a core set of knowledge, skills, and values that students should achieve in college.

### **Association for Institutional Research (AIR)**

AIR has published 3 volumes in its series, *Assessment in the Disciplines*. Although AIR has not yet published a volume in psychology, the articles in other disciplines may be useful for adaptation to psychology. Volumes in Business, Mathematics, and Engineering are available for purchase at <http://www.airweb.org/page.asp?page=1222>.

### **Council on Higher Education Accreditation (CHEA):** <http://www.chea.org>

CHEA is "[a] national advocate and institutional voice for self-regulation of academic quality through accreditation." Since 2005, CHEA holds an annual competition for CHEA Awards for Institutional Progress in Student Learning Outcomes and publishes descriptions of awards recipients in the CHEA Chronicle (<http://www.chea.org/Research/index.asp#chronicle>). The Department of Psychology at Southern Illinois University, Edwardsville, was a 2006 recipient of this award for its Senior Capstone experience.

### **National Center for Public Policy and Higher Education**

Every two years, the National Center for Public Policy and Higher Education publishes its "Measuring Up" report, which provides both national and state-by-state report cards on the status of higher education in the United States in terms of Preparation, Participation, Affordability, Completion, Benefits, and Learning. The 2008 report is available at <http://measuringup2008.highereducation.org/index.php>. This report grades the nation and all states with an "Incomplete" as it pertains to assessment of learning outcomes. Here is the summary statement for Learning:

"As in 2000, there are still no common benchmarks that would permit state comparisons of the knowledge and skills of college students. There are isolated instances in which learning outcomes are assessed, such as South Dakota's mandatory exam of rising college juniors. There are assessments that cover portions of the population, such as Graduate Record Examinations (GREs), which test those pursuing graduate study. And there are assessments in selected fields, such as licensure exams in nursing or WorkKeys in selected vocational fields. But there is no nationwide approach to assessing learning that would allow state-to-state comparisons. What energy was available for state assessments in 2000 has been directed to campus-level assessments in 2008, such as the Voluntary System of Accountability. This represents a step backward, not forward."

### **Voluntary System of Accountability (VSA)**

The VSA is a joint initiative of the American Association of State Colleges and Universities and the Association of Public and Land-Grant Universities that generates a "College Portrait" with 3 sets of data elements: Consumer Information, Student Experiences and Perceptions, and Student Learning Outcomes. The Student Learning Outcomes section includes a description of each institution's methods for evaluating student learning and reports institution-wide results of student performance on standardized tests of critical thinking and written communication. The Web site for the VSA is <http://www.voluntarysystem.org>.

**A. Understanding Assessment: Departmental, Institutional, Educational, and Societal Perspectives****5. Understanding Assessment: An Annotated Bibliography**

We offer a summary of helpful print and electronic resources that introduce assessment issues, some of which are focused on psychology programs and some of which apply to any discipline.

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 Note: *Italicized descriptions are summaries written by the authors of the Assessment Cyberguide.*

**Resources for Assessment of Student Learning in Psychology Programs**

Dunn, D. S., Mehrotra, C. M., & Halonen, J. S. (Eds.), *Measuring up: Educational assessment challenges and practices for psychology* (pp. 209-224). Washington, DC: American Psychological Association.

*This edited book contains articles that provide an overview of assessment challenges and practices for psychology programs. For more information, visit <http://books.apa.org/books.cfm?id=4318011>*

Education and Behavioral Sciences Section Psychology Committee Task Force on Information Literacy Standards. (n.d.). *Information literacy standards for psychology students*. Current draft retrieved from [http://connect.ala.org/files/29837/info\\_lit\\_psych\\_pdf\\_4a60828636.pdf](http://connect.ala.org/files/29837/info_lit_psych_pdf_4a60828636.pdf)

*The information literacy standards represent a librarian's viewpoint and are designed to complement the APA Guidelines for the Undergraduate Major. The standards are a psychology version of the Association of College & Research Librarians' (ACRL) Information Standards for Higher Education (which can be found at <http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm>). Upon final approval from the ACRL, these standards will appear at <http://www.ala.org/ala/mgrps/divs/acrl/standards/>*

Graham, S. E. (1998). Developing student outcomes for the psychology major: An assessment-as-learning framework. *Current Directions in Psychological Science*, 7, 165-170.

*This article outlines the approach to assessment of student learning adopted by Alverno College. It also includes a description of expected learning outcomes for the psychology major. For more information, visit <http://www3.interscience.wiley.com/journal/119131090/abstract>*

Halpern, D. F. (1988). Assessing student outcomes for psychology majors. *Teaching of Psychology*, 15, 181-186.

*Halpern makes a case for the importance of assessing student learning in psychology as a tool for improving teaching and learning, including the key role that the discipline of psychology should play in assessment in general. She also suggests six general learning outcome areas for the psychology major and reviews assessment methods and approaches. For more information, visit <http://www.informaworld.com/smpp/content~db=all~content=a785860104>*

Halpern, D. F. (Ed.). (2010). *Undergraduate education in psychology: A blueprint for the future of the discipline*. Washington, DC: American Psychological Association.

*This book examines recent changes in our undergraduate students and faculty; in our knowledge about how people learn; in our understanding of diversity; and in our beliefs about what our students need to know to be psychologically literate citizens of the world, caring family members, and productive workers who can meet today's challenges. With practical recommendations in every chapter, this book will help teachers and administrators design the most effective undergraduate psychology programs using the best modes of teaching for the coming decades. For more information, visit <http://books.apa.org/books.cfm?id=4316115>*

Halpern, D. F. in collaboration with Appleby, D. C., Beers, S. E., Cowan, C. L., Furedy, J. J., Halonen, J. S., Horton, C. P., Peden, B. F., & Pittenger, D. J. (1993). Targeting outcomes: Covering your assessment concerns and needs. In T. V. McGovern (Ed.), *Handbook for enhancing undergraduate education in psychology* (pp. 23-46). Washington, DC: American Psychological Association.

*In this chapter, Halpern et al. set forth a model of student-centered assessment. They also include a proposed list of outcomes for the undergraduate major in psychology and an extensive review of assessment methods, including advantages and Disadvantages of each method, as well as suggested strategies for implementing and using a departmentally-based assessment program. For more information, visit <http://books.apa.org/books.cfm?id=4313050>*



## General Resources for Assessment of Student Learning

American Psychological Association. (1997). *Learner-centered psychological principles: A framework for school reform & redesign*. Retrieved from <http://www.apa.org/ed/cpse/LCPP.pdf>

*Effective assessment strategies require an understanding of the learning process. The Learner-Centered Principles Work Group of the American Psychological Association's Board of Educational Affairs (BEA) articulate 14 learner-centered psychological principles that address cognitive and metacognitive factors, motivational and affective factors, developmental and social factors, and individual difference factors in learning.*

Angelo, T. (1999, May). Doing assessment as if learning matters most. *AAHE Bulletin*, 51(9), 3-6. Retrieved from [http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/0000019b/80/17/a5/10.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/17/a5/10.pdf) (Note: This article appears on pages 133-136 of the PDF.)

*Angelo argues for assessment that is focused on learning-centered principles and that transforms the culture of the university. He advocates for shared trust, shared vision and goals, shared language and concepts, and research-based guidelines to enhance the quality of assessment practices.*

Banta, T. W., Jones, E. A., and Black, K. E. (2009). *Designing effective assessment: Principles and profiles of good practice*. San Francisco, CA: Jossey-Bass.

*Banta, Jones, and Black discuss good practices in planning, implementing, and sustaining assessment and provide examples from 130 institutions (49 of which are in detail) that illustrate varying approaches to assessment at the institutional, departmental, and program level. For more information, visit <http://www.josseybass.com/WileyCDA/WileyTitle/productCd-0470393343.html>*

Biggs, J. (1999, May). Assessment: An integral part of the teaching system. *AAHE Bulletin*, 51(9), 10-12. Retrieved from [http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/0000019b/80/17/a5/10.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/17/a5/10.pdf) (Note: This article appears on pages 140-142 of the PDF.)

*Following a brief review of different approaches to classroom assessment, Biggs presents a model that emphasizes defining learning objectives and adopting teaching methods and assessment procedures that follow from one's objectives.*

Malik, D. J., & Lees., N. D. (2009). The accountability movement: Its role, opportunities, and meaning for chairs. *The Department Chair: A Resource for Academic Administrators*, 19(3), 3-5. Retrieved from The Tomorrow's Professor Blog, <http://cgi.stanford.edu/~dept-ctl/cgi-bin/tomprof/posting.php?ID=924>

*Malik and Lees discuss the Spellings Commission report and recent pressures on institutions to participate in the Voluntary System of Accountability, both of which have implications for faculty roles, curriculum development, and assessment of student learning.*

National Center for Academic Transformation (2005). *Five models for assessing student learning*. Sarasota Springs, NY: Author. Retrieved from [http://www.thencat.org/PlanRes/R2R\\_ModAssess.htm](http://www.thencat.org/PlanRes/R2R_ModAssess.htm)

*Provides recommendations for various methods of conducting assessments of student learning such as comparisons of performance on common exams among parallel sections of courses, pretest-posttest comparisons, and comparisons of student work using common rubrics.*

National Research Council. (2001). *Knowing what students know: The science and design of educational assessment*. National Academies Press. Retrieved from [http://www.nap.edu/catalog.php?record\\_id=10019](http://www.nap.edu/catalog.php?record_id=10019)

*Links assessment reform to what cognitive science has proposed about effective learning strategies.*

Quality Assurance Agency for Higher Education. (2005). *Reflections on assessment: Volume I*. Gloucester, UK: Author. Retrieved from <http://www.enhancementthemes.ac.uk/themes/Assessment/outcomes.asp>

*Contains papers on four workshops:*

*Workshop 1: Streamlining assessment- how to make assessment more efficient and more effective*

*Workshop 2: Using assessment to motivate learning*

*Workshop 3: Constructive alignment of learning outcomes to assessment methods*

*Workshop 4: Developing a variety of assessment methods, including self and peer assessment*

Quality Assurance Agency for Higher Education. (2005). *Reflections on assessment: Volume II*. Gloucester, UK: Author. Retrieved from <http://www.enhancementthemes.ac.uk/themes/Assessment/outcomes.asp>

*Contains papers on four workshops:*

*Workshop 5: Assessing online*

*Workshop 6: Issues of validity, reliability and fairness*

*Workshop 7: Improving feedback to students (link between formative and summative assessment)*

*Workshop 8: Assessing personal transferable skills*

Quality Assurance Agency for Higher Education (2007). *Integrative assessment*. Gloucester, UK: Author. Retrieved from <http://www.enhancementthemes.ac.uk/themes/IntegrativeAssessment/themes.asp>

*Contains links to four separate guides:*

*Guide no. 1: Monitoring Students' Experiences of Assessment*

*Guide no. 2: Balancing Assessment of and Assessment for Learning*

*Guide no. 3: Blending Assignments and Assessments*

*Guide no. 4: Managing Assessment Practices and Procedures*

Volkwein, J. F. (2003, May). Implementing outcomes assessment on your campus. *eJournal*, 1. Retrieved from [http://rpgroup.org/publications/eJournal/volume\\_1/volkwein.htm](http://rpgroup.org/publications/eJournal/volume_1/volkwein.htm)

*Provides an overview of assessment planning that links institutional, departmental, and course levels.*

Walvoord, B. E. (2004). *Assessment clear and simple: A practical guide for institutions, departments, and general education*. San Francisco, CA: Jossey-Bass.

*Walvoord introduces the basics of assessment for both administrators and faculty members, and she includes samples of rubrics and guidelines for collecting and analyzing data and for writing assessment reports. For more information, visit*

<http://www.josseybass.com/WileyCDA/WileyTitle/productCd-0787973114.html>

Wehlburg, C. (1999, May). How to get the ball rolling: Beginning an assessment program on your campus. *AAHE Bulletin*, 51(9), 7-9. Retrieved from

[http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/0000019b/80/17/a5/10.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/17/a5/10.pdf)

(Note: This article appears on pages 137-139 of the PDF.)

*Wehlburg describes the steps necessary to implement an assessment program, including points of resistance and characteristics of effective assessment programs.*



## B. Designing Viable Assessment Plans

### 1. Linking Assessment to the Learning Outcomes in the *APA Guidelines*

The Task Force constructed the Learning Outcomes in the *APA Guidelines for the Undergraduate Psychology Major* from the standpoint that they should be assessable. In this entry, we outline the assumptions that provided the foundation for goals and outcomes and the implications these assumptions have for good practice in psychology assessment.

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The Task Force members view the Learning Outcomes in the *APA Guidelines for the Undergraduate Psychology Major* and assessment planning as inextricably intertwined. Specifying performance criteria in the absence of well-designed plans to gather evidence on program effectiveness is likely to be an unproductive enterprise. The development of the Learning Outcomes was driven by our belief that each goal with its associated outcomes must reflect measurable aspects of the undergraduate psychology major.

After drafting the goals and outcomes, we discussed appropriate assessment methods that could be applied to each goal and its related outcomes. We considered a wide variety of both quantitative and qualitative assessment methods (e.g., objective tests; essays tests; formative assessments; projects; student portfolios; self-assessment practices; surveys of current students, alumni, and employers; and unobtrusive/archival measures). We also examined the potential advantages and disadvantages of each strategy for measuring specific outcomes listed for each goal. Ultimately, we estimated how optimal the various methods might be in producing a viable assessment strategy for a specific learning goal.

### Principles of Assessment in Psychology

APA Board of Educational Affairs Task Force on Psychology Major Competencies (2002)

- A set of outcomes is meaningful and useful in improving instruction only if student abilities are measured thoughtfully with the specific intent of improving teaching and learning. Whenever possible, students should receive direct feedback to facilitate their learning from completing assessment activities.
- Assessment planning should encourage systematic improvement rather than concentrate on deficiency. Depersonalizing the potential threat imposed by assessment may make it easier for faculty members to embrace assessment practices.
- Although some aspects of assessment can be accomplished using multiple-choice testing formats, other approaches to assessment often provide a richer picture of student achievement.
- Departments may choose to focus only a few goals on an annual basis. The document proposes ideal goals and outcomes under optimal conditions with appropriate resources to support assessment activity. Departments can craft assessment plans that provide feedback on targeted dimensions that will help improve or maintain high quality education. One strategy may involve assessing a subset of desired goals and outcomes in a given year with the expectation of assessing other goals and outcomes in later years.
- Departments will benefit from discussions that compare existing curricula to the Learning Outcomes to establish departmental expectations. Examining how individual courses contribute to achieving departmental expectations will help departments identify their relative strengths as well as areas that need improvement or are less highly valued in the mission of the department.
- Wherever possible, assessment is most beneficial when embedded within existing coursework. Such strategies reduce the burden for faculty and increase the motivation for students to take assessment activities seriously.
- In assessment-unfriendly departments, individual faculty may still be able to participate in assessment activities by using the Learning Outcomes to facilitate individual course planning.
- Assessment deserves to be treated as a legitimate area of applied scholarship for faculty. To the extent that the results of an assessment activity receive an external review, such work should count as part of the faculty scholarship portfolio.
- Departments will need to ask specific individuals in the department to assume overview responsibilities for departmental assessment. Assessment planning is energy and time intensive. This important work should be supported with release time and recognition for service to forestall deteriorating attention to assessment concerns.
- Assessment activities are expensive. Departments should not be expected to implement assessment plans without appropriate financial support.
- Assessment activities can involve activities that are not classroom based. Co-curricular activities, advising measures, and conference attendance represent viable venues for the collection of data that can influence program planning.
- Successful strategies in assessment may begin with the recognition that faculty are looking for an acceptable minimum of contribution. Departments may want to start from the proposition of the least intrusive activities and determine how satisfying the answers to curricular evolution might be. Arguing for more complex strategies may emphasize saving time and aggravation in the long run by adopting a proactive stance of curriculum evaluation.

**B. Designing Viable Assessment Plans****2. An Overview of Assessment Strategies**

The 2002 Task Force developed a taxonomy that provides a comprehensive listing of various categories of good assessment practice. This link offers a graphic depiction of the taxonomy and lists an assortment of specific strategies in each category.

What types of data might faculty collect to determine whether students are achieving the learning outcomes of the degree program? This section discusses several potential sources of data, discusses the advantages and disadvantages of each source of data (e.g., quality of the data, validity, usefulness, ease of data collection, interpretability), and provides some general recommendations on each data source.

**An Overview of Assessment Strategies**

APA Board of Educational Affairs Task Force on Psychology Major Competencies (2002)

**Course Data**

Objective Tests (e.g., multiple choice, true-false, fill-in-the-blank items)  
 Essay Tests  
 Embedded Questions and/or Assignments  
 Classroom Assessment Techniques (e.g., 1-minute papers, course focus groups, free-writing, etc.)

**Individual Projects/Performance Assessment**

Written Products (e.g., term papers, lab reports, critiques)  
 New Oral Presentations (e.g., speeches, role plays)  
 Graphic Tests and Displays  
 Poster Presentations  
 Structural/Situational Assessments

**Summative Performance Assessment**

Standardized Tests  
 Locally-Developed Exams  
 Capstone Experiences  
 Internships/Professional Applications  
 Portfolios  
 Assessment Center Methods (e.g., in-baskets, guided problem-solving)  
 Case or Longitudinal Studies

**Self-Assessment/Reflection**

Student Journals or Self-Critiques

**Collaboration**

Research Teams & Group Projects (e.g., written and oral)  
 On-Line Group Activities (e.g., maintaining print record of interactions in chat room or other internet-based contact)

**Interviews and Surveys (Attitude Measurement)**

Satisfaction Measures (e.g., seniors, alumni, employers, graduate school advisors, parents)  
 Performance Reviews (e.g., alumni, employers, graduate school advisors)  
 Exit Interviews  
 Focus Groups  
 Follow-up Alumni Interviews  
 External Examiner Interviews (exit interviews conducted by objective, external expert)

**Archival Measures**

Transcript Analysis / Analysis of Transfer Patterns  
 Syllabus Audit  
 Demographic Data Analysis  
 Alumni Database  
 Library Use Statistics / Web Hits

**B. Designing Viable Assessment Plans**

**3. Evaluating Assessment Strategies**

In this entry, the 2002 Task Force defines each of the categories in our taxonomy of assessment and provides an overall analysis of the advantages and disadvantages of these approaches. The Task Force offers some recommendations to promote best practices within each assessment category.

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**Evaluating Assessment Strategies**

APA Board of Educational Affairs Task Force on Psychology Major Competencies (2002)

**COURSE DATA**

**NATURE OF CATEGORY**

This collection of assessment strategies involve methods that instructors have traditionally used to judge classroom performance (e.g., essay and objective testing) as well as approaches that reflect more recent attention to assessment-driven teaching-learning processes. These include embedded assessment strategies in which departments identify specify classes in which to embed assessments that are endorsed and designed by the department as well as classroom assessment techniques articulated by Cross and Angelo (1993).

**OVERALL ANALYSIS**

**Advantages:**

- maximizes faculty autonomy and investment in student learning
- facilitates prompt feedback
- can provide immediate feedback to faculty about teaching effectiveness

**Disadvantages:**

- Limited by pedagogical constraints of instructor
- Sometimes produces unreliable evaluation results
- Results can be affected by instructor or department bias
- Generally promotes disconnected course experiences

**Recommendations**

*Faculty who are new to accountability mandates often protest that these kinds of assessment activities are unnecessary. They advocate course grades as a meaningful index of student learning. Grades that reflect classroom performance do constitute one important source of data about student learning. However, most accrediting agencies recognize that solely relying on grades is not adequate evidence of learning quality. Responsible assessment plans will include strategies that make developing evidence of quality dependent on measures of particular target behaviors, rather than on more global measures such as grades.*

**OBJECTIVE TESTS (e.g., multiple choice, true-false, fill-in-the-blank items)**

**Advantages:**

- displays good psychometric properties
- facilitates rapid feedback through ease of scoring
- develops norms
- inexpensive
- comprehensive
- improves test validity through item analysis
- facilitates differential group scoring

**Disadvantages:**

- usually involves testing low level knowledge
- constructing high quality test questions difficult
- question banks are often of poor quality
- can be compromised by student test banks that may foster differential access

**Recommendations**

*Although constructing solid objective tests that tap deeper levels is not impossible, it is challenging. Instructors need to help students understand how objective testing can be designed to go after different levels of knowledge. Some find that teaching students Bloom's taxonomy as an organizer that faculty might intuitively use to create more targeted challenges will help students understand questions as challenging rather than picky.*

**ESSAY TESTS****Advantages:**

- showcases deeper learning, higher order thought processes
- requires transfer, integration of learning from other sources
- can include applications or problem-based learning
- develops writing skills and critical thinking
- cheap and easy to administer
- faster to construct than objective tests

**Disadvantages:**

- questionable psychometric properties
- may disadvantage ESL, students with poor writing or thinking skills
- takes longer to grade and provide feedback
- produces narrower sample of content knowledge

**Recommendations**

*Despite the labor intensiveness of essay evaluation, this kind of performance effectively addresses many aspects of what we want students to learn. Critical to defensible evaluation of essays is a well-designed rubric. Instructors can benefit from training to produce reliable feedback for student performance. Careful consideration should also be given to the instructions to clarify performance expectations. Some faculty provide an array of potential essay questions as a study guide, selecting a select number of those questions to comprise the actual exam.*

**EMBEDDED QUESTIONS AND/OR ASSIGNMENTS****Advantages:**

- saves time since assignments will already be required for the course
- overcomes faculty resistance due to reduced intrusion of external assessment activity
- encourages faculty to discuss common course outcomes, goals, & objectives promotes shared responsibility for agreeing where embedding should occur
- assessment phobic faculty exhibit greater comfort with embedded designs
- obligates faculty to have public discussion about their pedagogy
- limits demand characteristics

**Disadvantages:**

- can be time-consuming to coordinate effort
- may be taxing to isolate key aspects of performance
- limits faculty autonomy within the course

**Recommendations**

*Embedding departmental assessment measures in existing coursework will emphasize a strong relationship between course content and assessment content. Individual faculty autonomy is essentially preserved; however, the faculty must collaborate within the department and be responsible for reporting to department colleagues. That level of obligation may not be standard procedure. The department must also control, store, and protect data, including protection from misinterpretation and misuse by outside sources.*

**CLASSROOM ASSESSMENT TECHNIQUES (e.g., 1-minute papers, course focus groups, free-writing, etc.)****Advantages:**

- promotes experimental attitude in faculty about course design
- convenience
- provides immediate feedback to faculty about success
- vividly demonstrates faculty commitment to student satisfaction

**Disadvantages:**

- focus on teacher performance
- should be combined with other methods for full picture of student learning
- perceived to sacrifice content coverage for time required to assess
- demand characteristics may compromise validity of results

**Recommendations**

*Enthusiasts of classroom assessment advocate these techniques as a way of implementing continuous improvement efforts. Careful context-setting will avoid or minimize students making unfavorable judgments that the activities are potentially time-wasting, particularly when faculty share the conclusions drawn from the assessment data with the students and make efforts to address concerns, where appropriate.*

## INDIVIDUAL PROJECTS/PERFORMANCE ASSESSMENT

### NATURE OF CATEGORY

Individual projects have historically provided students the opportunity to apply their learning in projects that make optimal use of their potential intrinsic interest in the subject matter. The category includes individual writing, speaking, and graphic and poster production. Performance assessment strategies, sometimes also referred to as *authentic assessment*, are also evaluated in this section.

### OVERALL ANALYSIS

#### Advantages:

- student-centered design promotes investment, motivation
- promotes transfer of skills and integration of content
- clear expression of knowledge base
- engages active learning
- encourages time outside of class
- promotes library use
- can provide study in depth not possible during allotted class time
- student benefits directly from experience
- provides venue for creativity

#### Disadvantages:

- time consuming and labor intensive to design and execute both for instructor and students
- may use materials wastefully (e.g., making transparencies for one speech)
- narrows content range for which student is responsible
- student variability (ability, motivation) challenges reliability and value of performance
- labor intensive for student
- cost may be prohibitive

#### **Recommendations**

The types of projects faculty choose as assessment vehicles will depend, in part, on the expertise the faculty have in evaluating works in various modes. The clear articulation of expectations will be critical to success. Specifying student creativity as a criterion will facilitate efforts that go beyond minimum achievement of criteria. Some products may involve decisions about storage space. For example, student videos may have a limited shelf-life.

### WRITTEN PRODUCTS (e.g., term papers, lab reports, critiques)

#### Advantages:

- facilitates student command of specific area
- provides practice in critical skill area of writing

#### Disadvantages:

- challenging to writing-compromised students
- labor-intensive to score and return with timely feedback
- can be plagiarized created time-consuming/strategic confrontation with serious consequences for students who are caught
- instructors can be plagued with consequences of student procrastination

#### **Recommendations**

*Many professors design writing projects in stages that promote multiple drafts. Getting feedback in stages may be easier for students to incorporate and easier for faculty to see the impact of their feedback work. Learning disabled, ESL, and other writing challenged students may require additional support. Efficient feedback can be facilitated using rubrics or style sheets. Writing projects should be tailored to the developmental level of the student. For example, beginning courses can employ letters to friends to explain a concept. Formal term papers typically work best in advanced courses. Departments may adopt a style sheet based on APA writing conventions that can help students practice consistent format strategies.*

**ORAL PRESENTATIONS** (e.g., debate, role play)**Advantages:**

- builds expertise in important communication area of oral expression
- promotes importance of sharing knowledge
- enhances oral skills
- Q & A promotes thinking on your feet
- assists professor to cover course content

**Disadvantages:**

- may burden students with ESL, speech and language difficulties, speaking anxiety
- time consuming and time-wasting when work quality is bad or boring
- may be hard to grade

**Recommendations**

*Students understandably resist assignments that require them to speak in classes since public speaking remains one of our most pervasive social phobias. Success in oral presentations will depend on several elements:*

- *providing lots of guidance and structure beforehand*
- *normalizing speaking discomfort and pointing out that overcoming those fears can happen only through practice*
- *specifying and sticking to assigned time limits*
- *circumscribing topic areas or requiring topic approval*
- *coaching regarding use of support technologies*
- *developing appropriate performance criteria*

**GRAPHIC TEST AND DISPLAYS** (e.g., concept maps, outlines)**Advantages:**

- provides experience in applying and organizing course concepts
- assists in thinking through organization of information
- additional grappling with the material enhances recall
- appeals to visual learners

**Disadvantages:**

- students have limited practice with displaying graphic skills
- students may not have sufficient experience in interpreting graphics
- technological sophistication will influence production quality
- may waste resources

**Recommendations**

*Faculty have found some success in asking students to translate lecture input into graphic displays, such as a concept map. These strategies appeal to visual learners who may be able to encode and remember more course content by adopting this strategy.*

**POSTERS****Advantages:**

- hold students accountable for independent project
- reduces grading burden compared to writing projects
- provides opportunity to integrate communication skills (e.g., writing, graphics, oral defense)
- can incorporate team effort
- expert judgment, peer review can be facilitated with criteria
- simulates typical debut venue for most psychology scholars

**Disadvantages:**

- may need to make special arrangements for space
- students may invest money in project for one-shot exposure
- lack of aesthetic sense may handicap poster effectiveness
- stronger social interaction skills may produce halo effect in judging quality
- numbers of posters to be judged can create quality pressures on grading
- may not motivate best effort

**Recommendations**

*Providing models or performance criteria will facilitate better productions. Poster sessions can be scheduled within classes or across classes as a departmental event. Awarding best of show maybe a helpful strategy to enhance motivation among the best students. All-department events can become a public relations resource as well as an opportunity to work with local high school psychology teachers to recruit future students.*

**STRUCTURAL/SITUATIONAL ASSESSMENTS** (e.g., guided learning, in-baskets, critical situations, etc.)**Advantages:**

- provides realistic testing circumstance
- reality engages and motivates students
- promotes transfer of information, application
- taps complex skills

**Disadvantages:**

- difficult to construct and measure
- locating designed instruments is challenging
- prone to history/context/age cohort effects
- students may rely on common sense under pressure rather than their knowledge from the course

**Recommendations**

*The situation should correspond closely to the learning conditions to promote the best transfer of knowledge. Evaluating performance will be facilitated by clearly developed criteria. The quality of the rubric and the training of the evaluators will influence validity. If inter-rater reliability is not high, the results will be of limited value. Rubrics will sometimes not provide for unexpected, creative responses.*



## SUMMATIVE PERFORMANCE ASSESSMENT

### NATURE OF CATEGORY

Summative assessment strategies tend to be employed for purposes of evaluating program quality rather than primarily to provide developmental feedback to students. This collection of assessment strategies include methods that involve a single episode of data collection (e.g., nationally or locally normed tests) as well as those that incorporate tracking student performance over time (e.g., portfolio, case studies, longitudinal studies. Capstone courses and internships can also be appropriate contexts for summative evaluation.

### OVERALL ANALYSIS

#### Advantages:

- promotes coherence in curriculum planning
- provides feedback loop to improve quality
- some strategies can be adapted to student interests
- supports to earlier curriculum recommendations (e.g., St. Mary's conference to provide vehicle for integrating learning)

#### Disadvantages:

- some options are labor and/or cost intensive
- students may not receive direct feedback regarding their performances, thus limiting their own gains from effort expended
- departments may ignore available data in their planning

#### **Recommendations**

*Summative procedures can be invaluable in making the case for the overall quality of programs. Although all of the methods have advantages and drawbacks, the most benefit can be gained to all constituents when students receive direct feedback regarding their summative performance. Finding out relative scores on comprehensive exams or receiving feedback regarding performance over time can assist students with career and life planning in some instances.*

### STANDARDIZED TESTS

#### Advantages:

- typically one shot assessment
- facilitates comparisons over time
- convenient

#### Disadvantages:

- may not reflect gains or growth across time
- exiting students may not benefit from feedback
- existing instruments may not match to the mission and goals of departments
- expensive
- students may not be motivated to do their best work
- when test occurs may not maximize true learning
- administration may not be flexible
- not student-centered
- limited faculty ownership
- verifying bad performance can be threatening to motivation
- scores may be delayed in return, reducing the impact of feedback
- there may not be a standardized test for the identified content
- can facilitate problematic comparisons to other programs (e.g., comparisons may not take into account differential resources, student characteristics, etc.)

#### **Recommendations**

*The Disadvantages of the use of standardized tests can be minimized with some additional planning. Embedding the capstone test in an existing course will enhance student motivation since the student may take the experience more seriously. When student performance can also be tied to course grading, maximum motivation to do well is likely. Describing how well the existing test matched the required curriculum will encourage faculty support and student cooperation.*



### LOCALLY-DEVELOPED EXAMS

#### Advantages:

- can be tailored to match curricular/program goals
- standardizes local use
- relatively inexpensive
- provides opportunity to develop meaningful local norms
- avoids specious comparison with other colleges
- foster coherence in department about their objectives
- speedy feedback
- cheaper than national products
- after initial investment, saves time in the long run
- may be embedded in specific standard courses

#### Disadvantages:

- complex, time-consuming to develop
- may impede curricular change since test would need retooling after reforms
- reliance on test bank may not be adequate due to test bank quality
- vulnerable to student theft and distribution
- can be misused by comparing faculty member's areas

#### Recommendations

*Comprehensive local exams are very time-intensive on the front end; however, the pay-off for this activity is multiple. This strategy encourages strong collaboration across department members and will help department members learn about the academic goals of their colleagues. Security will be an important issue to keep the department test safe from test files that may exist across campus.*

### CAPSTONE EXPERIENCES

#### Advantages:

- fosters aura of importance that may motivate students throughout the curriculum
- encourages departmental endorsement of culminating experience
- promotes student responsibility for engaged course
- supports program coherence for faculty and students
- course content can be flexible
- topical design of capstone can engage faculty in planning (e.g., seminar topics can be taught in special interest areas as long as the performance goals meet department expectations)

#### Disadvantages:

- high stakes performance can be impaired by performance anxiety
- typically low enrollment course is expensive to provide seats for all seniors
- faculty can generate territorial concerns over right to teach capstone
- graduation may depend on successful completion of capstone which can generate some anxiety for faculty and students when performance wobbles late in the course

#### Recommendations

*Departments can use capstone courses as a unique way to express special interests of the faculty. Departments should secure the support of administration for this expensive option before broad implementation. Typically, capstones tend to have small enrollments to maximize faculty-student interaction. Capstones provide a great opportunity to have the student reflect meaningfully over the course of the curriculum. Putting in place some checkpoints on the process may prevent last-minute difficulties in the capstone that can compromise graduation plans.*

### INTERNSHIPS/PROFESSIONAL APPLICATIONS

#### Advantages:

- popular choice for students
- provides opportunity to sample future career
- positive public relations vehicle related to well-prepared students

#### Disadvantages:

- time intensive for faculty mentors to connect with on-site mentors and coordinate opportunities
- challenging to foster learning experiences across multiple sites
- poorly prepared students create public relations problems

#### Recommendations

*Departments may reduce the public relations strain by screening students for their readiness to represent the program in public contexts. Qualifying criteria that stress quality and quantity of course experience as well as professional expectations in the intern role can set a positive, appropriate tone. Maintaining close contact with on-site mentors can also reduce unsuccessful student performance.*

## PORTFOLIOS

### Advantages:

- shows sophistication in student performance
- illustrates longitudinal trends
- highlight student strengths
- identify student weaknesses for remediation, if timed properly

### Disadvantages:

- collection will be no better than the quality of collected instruments
- time consuming and challenging to evaluate
- space and ownership challenges making evaluation difficult
- content will vary widely with students
- students fail to remember to collect items
- transfer students may not be in position to provide complete portfolio
- time intensive to convert to meaningful data

### Recommendations

Clear expectations about the purpose and collection responsibilities will help students succeed in using the portfolio method. The works that student select will be more satisfying if the students can compare to established criteria. If the faculty want student portfolios to represent student development over time, they will need to be scrupulous about setting forth the performance demand of collecting and examining works throughout the student's career. The success of the portfolio may be enhanced when students reflect on how all the pieces work together to express their learning or meet department criteria.

## ASSESSMENT CENTER METHODS (e.g, in-baskets, guided problem-solving)

### Advantages:

- complex tasks can enhance student motivation
- designing relevant authentic assessment practices challenging
- facilitates integration of diverse skills and content areas

### Disadvantages:

- expensive in material preparation and time
- students may not always perceive relevance of assessment to their studies

### Recommendations

Not all disciplines may lend themselves as readily to problem solving situations that seem to be at the center of those challenges.

## CASE OR LONGITUDINAL STUDIES

### Advantages:

- can provide rich detail
- level of attention can build esteem
- builds allegiance

### Disadvantages:

- transfer students may be omitted
- expensive and time-consuming
- small sample limits generalization
- attribution of historical or cohort effects may taint participant reports
- selection for tracking may influence outcome and change student experience

### Recommendations

Departments need to clarify selection criteria if only a sample of students will be tracked. The results simply may not be representative of the group as a whole. Special care must be taken to have a satisfying instrument if results will be compared across cohorts. A department member may need to coordinate this activity if the department commits to this strategy.

## SELF-ASSESSMENT/REFLECTION

### STUDENT JOURNALS OR SELF-CRITIQUES

**Advantages:**

- multiple modes and variable sophistication possible
- quality of self-assessment related to quality of content knowledge
- flexible in format; prompts provided or not
- might ask about change over time
- empowers students to practice self-evaluation
- promotes transfer of accountability to other situations

**Disadvantages:**

- student judgment may not be accurate
- self-assessment are prone to evaluative biases (e.g., Lake Woebegone Effect, underestimation due to self-esteem issues)
- students have limited experience being held accountable to judge their own work
- students may define assessment as job of teacher
- faculty may perceive this practice to set up more grade conflicts

**Recommendations**

*Students should receive feedback on the accuracy of their self-evaluations. Early assignments might fare best with more global criteria. For example, "what aspects of your performance were effective?" and "What would you do differently if you had more time?" may engage the student in being reflective. Over time, students should be able to apply more discrete criteria to their own performance, and eventually they should be able to help formulate criteria by which performances should be judge. The quality of self-assessment may be very dependent on the careful construction of the self-assessment prompts.*

## COLLABORATION

### RESEARCH TEAMS & GROUP PROJECTS (e.g., written and oral)

#### Advantages:

- student-centered designs promote engagement
- provides opportunity to practice group skills, time management
- promotes independent work at deeper level
- breadth of assignments can address content coverage issue
- simulates how professional activities/achievement transpires
- produces synergy and excitement around project completion
- creates a venue to synthesize content bases from multiple courses

#### Disadvantages:

- - students have limited training in group dynamics
- - social loafers can tax equitable judgments about grading
- - erroneous ideas that are not caught and corrected spread across group members
- - challenging to faculty to judge when to redirect or rescue student groups in trouble
- - time-consuming

#### **Recommendations**

*Selection of the group members will influence group outcomes. For example, some projects will work best when the groups are heterogeneous with regard to student characteristics. Other projects might be most efficient when groups are homogeneous. Students may need assistance in understanding how groups work. Their work will improve with some prompts to pay attention to the process of the group in addition to solving the problem at hand or creating the product. Students will fare best in research teams where they clearly understand group norms and expectations. For example, what are the penalties for nonparticipation? Whenever possible, students should be given feedback on the quality of their participation.*

### ONLINE ACTIVITIES (e.g., maintaining print record of interactions in chat room or other internet-based contact)

#### Advantages:

- the data already exist as part of regular course
- records trends in collaborative skill
- tracks process
- cheap and convenient
- demand characteristics may be reduced
- students have equal opportunity to participate
- faculty monitoring can be unobtrusive
- appeals to some students who may have greater difficulty in oral expression
- provides archive through automatic recording
- documents feedback for instructor on what has been covered or what is still unclear

#### Disadvantages:

- - content analysis is time-consuming
- - privacy issues can be compromised
- - students may be handicapped by computer savvy and tech patterns
- - faculty need to be computer savvy

#### **Recommendations**

*Instructors using online strategies may need to overcome individual differences in using this mode by requiring participation. Circumscribing the content may help to avoid some ethical challenges that result in chat room participation. Students should be informed that their discussions are being monitored for assessment purposes from the outset. This strategy may entail IRB review to confer the best protection. Faculty also need to assess ease of web access for students before making on-line participation a requirement.*

## INTERVIEWS AND SURVEYS (ATTITUDE MEASUREMENT)

### OVERALL ANALYSIS

#### Advantages:

- easy to administer
- cheap
- easy to score
- quick feedback
- can be reliable but not valid

#### Disadvantages:

- validity hinges on good design
- may not be valid
- demand characteristics may distort results
- participants may not have good knowledge about their own attitudes
- participants may demonstrate response bias or dishonesty
- labor intensive to interpret

#### **Recommendations**

*Valid attitude measures depend on quality of design and implementation. For example, the participants must be motivated, careful, and candid to generate data that will be meaningful. Care should be exercised to produce to design appropriate measures for intended purposes that minimize sources of error (e.g., selection bias, demand characteristics, literacy challenges, etc.).*

### SATISFACTION SURVEYS (e.g., seniors, alumni, employers, graduate school advisors, parents)

#### Advantages:

- fosters positive public relations because activity signals faculty concern for quality
- targets of survey may be prompted to other positive actions (e.g, donations, hiring, recruitment of new students)
- external judges may be more objective in their appraisal of student abilities, achievements
- recurring insights may point to some problems that need remediation
- provides important perspective on relevance of program to various occupations

#### Disadvantages:

- tracking down and engaging targets may be problematic
- low return rates compromise validity
- some respondents may be motivated not to tell the truth (e.g., don't want to bear bad news, demand characteristics)

#### **Recommendations**

*Long surveys will influence completion rate. The return rate also provides some indication of how robust the results are. For example, in alumni surveys, the students who are most successful will be more motivated to complete the surveys and may produce an overestimate. When appropriate, a lie scale or some other strategy to verify truthfulness in response will also increase validity. In designing satisfaction instruments, instructors need to think through the quality of education from the perspective of the interview subject. Well-designed surveys are difficult to create so some pilot data may help identify trouble spots in proposed instruments.*

### PERFORMANCE REVIEWS (e.g., alumni, employers, graduate school advisors)

#### Advantages:

- promotes evaluation based on objective appraisal of behavior
- builds positive public relations
- external judges may be more objective in their appraisal of student abilities, achievements
- recurring insights may point to some problems that need remediation
- provides important perspective on relevance of program to various occupations

#### Disadvantages:

- tracking down and engaging targets may be problematic
- low return rates compromise validity
- some respondents may be motivated not to tell the truth (e.g., don't want to bear bad news, demand characteristics)

#### **Recommendations**

*Departments committed to evaluating their graduate's performance from interested stakeholders are likely to find the time invested to be worthwhile, both in terms of data gathered as well as public relations impact.*

## EXIT INTERVIEWS

### Advantages:

- provides realistic picture
- provides catharsis
- provides in-depth, personal perspective on experience of major
- can be embedded in existing courses to capture broad range of student experience
- demonstrates overt department commitment to high quality
- may promote long-term allegiance among graduating students
- can generate reinforcing feedback to help departments sustain effectiveness

### Disadvantages:

- volunteers may have a negative or a positive agenda that may not be representative, producing a selection bias
- time-consuming to coordinate and evaluate the results
- students may not show up for discussion
- negative discussion may influence formerly neutral students to redefine their experience negatively
- completion challenge
- participants may paint too rosy a picture partially due to timing
- expensive
- results can be influenced by the quality of the interviewer and protocol

### Recommendations

*Departments will need to decide on the scale and format of focus exit interviews. These activities can be conducted individually or in small groups. Departments can commit to interviewing every graduating seniors or elect to sample from the group. Instructors need to determine how much credence to place on the results of group discussions with students based on sample size and representation. Questions should target the data that the department wishes to gather. The department should also determine how to interpret the results of the interview. Collaborative design of the interview protocol will promote greater enthusiasm by department members to deal with the consequences of the interview. Conducting the interviews with department faculty may influence student participation since they may be more candid with an external reviewer.*

## FOCUS GROUPS

### Advantages:

- small discussion groups promote engagement
- can be employed to provide feedback on a class, course, or program
- participants can benefit directly from changes that result from their feedback
- demonstrates overt department commitment to high quality
- can generate reinforcing feedback to help departments sustain effectiveness
- development of protocol can be involving for faculty
- may tap unforeseen areas of concern

### Disadvantages:

- current students may feel some pressure not be completely candid for fear of retribution
- volunteers may have a negative or a positive agenda that may not be representative
- time-consuming to coordinate and evaluate the results
- students may not show up for discussion

### Recommendations

*Departments should develop a good rationale for selecting students for focus group linked to the purpose for which the group is being convened. The discussion protocol can produce both quantitative and qualitative data that can be beneficial to the department. However, student commentary in a focus group may not be representative of the typical student's experience.*

**FOLLOW-UP ALUMNI INTERVIEWS**

(This method involves telephone follow-up to graduates to assess information other than satisfaction with the major. Graduates can be contacted and interviewed on various outcome measures, including knowledge of the major, civic practices, or other indices of interest to the department. Demand characteristics are strong in this strategy.)

**Advantages:**

- facilitates spontaneous assessment of student's application of knowledge & skill
- measures enduring learning and skill transfer
- scope can be broad-ranging

**Disadvantages:**

- could be construed as deceptive practice
- might require IRB oversight

**Recommendations**

*Avoiding demand characteristics is a significant problem with this approach. Alumni may feel compelled to help out by inflating their accomplishments or satisfactions in response to a phone interview.*

**EXTERNAL EXAMINER INTERVIEWS** (exit interviews conducted by objective, external expert)**Advantages:**

- promotes objective reports where students are assured of anonymity
- data summary and interpretation conducted external to regular department activities
- improves face validity of assessment activities
- supports department courage regarding willingness to expose their practices to outsider

**Disadvantages:**

- expensive to employ qualified consultant
- sensitive information is at some risk for getting beyond control of department

**Recommendations**

*Departments may want to involve the external examiner in the construction of the interview protocol to avoid problems of drift toward the examiner's own interests and values in the interview. Qualified external examiners can be identified through the Psychology Department Consulting Bureau operated by the Society for the Teaching of Psychology.*

## ARCHIVAL MEASURES

### TRANSCRIPT ANALYSIS / ANALYSIS OF TRANSFER PATTERNS

**Advantages:**

- can answer questions about prerequisites, transfer patterns
- existing data
- provides overall picture
- trends of targeted students at particular times
- exposes problematic trends for transfer, including drop out rates, time to degree completion, course articulation success, subsequent courses performance

**Disadvantages:**

- time-consuming
- potentially boring in level of detail required
- may require cooperation to gain access to data

**Recommendations**

*The analysis of course patterns by itself may not address directly the questions regarding quality. Transcript analysis can answer narrowly focused questions that should be well thought through to justify the time required.*

### SYLLABUS AUDIT

**Advantages:**

- promotes coherence within the department
- can identify areas of neglect or overemphasis
- facilitates adoption of similar writing standards and other expectations
- promotes student understanding of cognitive goals

**Disadvantages:**

- time-consuming
- may be difficult to engage all department members fully in review/consensus
- students may pay little attention to the syllabus as overall learning guide

**Recommendations**

*Although this practice is time-consuming, many departments find a syllabus audit is fundamental to answering all kinds of questions about the manner in which the faculty implement the curriculum.*

### DEMOGRAPHIC DATA ANALYSIS/ALUMNI DATABASE

**Advantages:**

- facilitates thorough understanding of student body
- prepares department for unusual trends that might affect course scheduling
- predicts where recruitment efforts will pay off
- points to specific remediation needs
- identifies potential donors for ongoing program needs

**Disadvantages:**

- time-consuming
- possible too have too much data

**Recommendations**

*With careful planning, departments can execute well-crafted strategies to collect data that will be useful for their planning in recruitment, retention, and fund-raising.*

### LIBRARY USE STATISTICS / WEB HITS

**Advantages:**

- provides input about how seriously students take assignments
- allows analysis of trends in use
- presents overall picture of value

**Disadvantages:**

- contaminated with faculty use
- interpretation is difficult, boring, and time-consuming
- students may get sources from other than the library

**Recommendations**

*This measure may be most helpful feedback from the library to assist in future ordering. Combining library use and web hit statistics with other measures may provide more meaningful measure.*



**B. Designing Viable Assessment Plans**

**4. Overview of Optimal Assessment Strategies in Psychology**

In this entry, we offer a matrix that estimates the potential of different assessment categories with the Task Force's learning goals. We differentiate categories that may be optimal for a specific goal from those strategies that offer little advantage in documenting quality.

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**Methods of Assessing Learning in the Major:  
What Strategies are Optimal?**

APA Board of Educational Affairs Task Force on Psychology Major Competencies (2002)

Learning Goals	Course data	Individual projects/ Performance assessment	Summative performance assessment	Self-assessment/ Reflection	Collaboration	Interviews and Surveys	Archival measures
Knowledge Base of Psychology	Optimal	Optimal	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic
Research Methods in Psychology	Mixed or Problematic	Acceptable	Mixed or Problematic	Mixed or Problematic	Acceptable	Mixed or Problematic	Mixed or Problematic
Critical Thinking Skills in Psychology	Mixed or Problematic	Acceptable	Mixed or Problematic	Mixed or Problematic	Acceptable	Mixed or Problematic	Typically Inappropriate
Applications of Psychology	Mixed or Problematic	Acceptable	Mixed or Problematic	Acceptable	Mixed or Problematic	Acceptable	Mixed or Problematic
Values in Psychology	Typically Inappropriate	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic
Information and Technological Literacy	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic
Communication Skills	Acceptable	Acceptable	Mixed or Problematic	Acceptable	Mixed or Problematic	Mixed or Problematic	Typically Inappropriate
Sociocultural and International Awareness	Mixed or Problematic	Acceptable	Mixed or Problematic	Mixed or Problematic	Acceptable	Mixed or Problematic	Typically Inappropriate
Personal Development	Mixed or Problematic	Mixed or Problematic	Mixed or Problematic	Optimal	Mixed or Problematic	Mixed or Problematic	Typically Inappropriate
Career Planning and Development	Mixed or Problematic	Acceptable	Mixed or Problematic	Typically Inappropriate	Mixed or Problematic	Acceptable	Typically Inappropriate

**B. Designing Viable Assessment Plans**

**5. Critique of Assessment Strategies Applied to Goals and Outcomes**

In the largest entry in the Assessment Cyberguide, we provide an estimate of the assessment potential for each category and practice within each category in relation to the psychology goals. Suggestions from this entry can help departments pick beneficial approaches and avoid strategies that will have little pay-off.

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**Critique of Assessment Strategies Applied to Goals and Outcomes**

APA Board of Educational Affairs Task Force on Psychology Major Competencies (2002)

**GOAL 1: Knowledge Base of Psychology:** Demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.

- 1.1 Characterize the nature of psychology as a discipline.
- 1.2 Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology (e.g., learning and cognition, individual differences, biological bases of behavior, developmental changes in behavior).
- 1.3 Use the concepts, language, and major theories of the discipline to account for psychological phenomena.
- 1.4 Explain major perspectives of psychology (e.g., behavioral, biological, cognitive, evolutionary, humanistic, psychodynamic, and sociocultural).

<b>COURSE DATA</b>	<b>Overall Strong potential.</b> Classroom activities and course data naturally provide venues in which to assess content knowledge in psychology. However, current assessment trends suggest that concentrating solely on these indices may not provide sufficient information to provide meaningful feedback on program integrity.
<b>OBJECTIVE TESTS</b>	<b>Strong potential.</b> Despite the inherent difficulties in constructing valid and reliable objective tests, the method can effectively assess content learning. However, most objective tests tend to evaluate student knowledge more routinely at lower levels of thinking (e.g., rote, simple application).
<b>ESSAY TESTS</b>	<b>Strong potential.</b> Despite the labor intensiveness of providing feedback on essay tests, this approach facilitates greater access to measuring deeper levels of content learning. Faculty are increasingly turning to the use of rubrics and specified criteria to address problems of reliability in grading.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Strong potential.</b> Choosing some courses in which program assessment activities can occur can still facilitate specific assessment of content knowledge. For example, embedding a departmental assessment of ability to demonstrate APA format in a methods class provides a reasonable vehicle for assessing content knowledge of APA format. Other emphases are possible in embedded assessments, including ethics, persistent themes, or historical detail among others.
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Strong potential.</b> Faculty engage in classroom assessment techniques to provide spot checks of how well students are learning specific concepts. Although the focus is understandably narrow (e.g., the content of a particular class), the method provides optimal feedback for the faculty member concerned with what students are learning and retaining.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Overall Strong potential.</b> The knowledge base of psychology is predictably the foundation for most individual projects. These generally offer the advantage of studying some corner of the discipline in depth; however, breadth of exposure to content may be a casualty given the time limitations most faculty and students face.
<b>WRITTEN PRODUCTS</b>	<b>Strong potential.</b> When assignments are well-designed, written products should provide insight into what students know and don't know about content. Faculty have discovered that specifying how much content (e.g., number of required references) may facilitate the depth of exploration the faculty member had in mind when designing the project instructions.

<b>GOAL 1: Knowledge Base of Psychology (continued)</b>	
<b>ORAL PRESENTATIONS</b>	<b>Strong potential.</b> Oral presentations also provide insight into student learning of the content. In addition, the opportunity to engage students in questions allows faculty and classmates to probe the depth of student knowledge while building oral communications skills.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Strong potential.</b> Concept maps can reveal the nature of associations that students develop regarding specified content in the discipline.
<b>POSTERS</b>	<b>Strong potential.</b> Posters can provide a more global sense of what students understand due to the brevity of the medium. However, informal questioning can fill in the gaps about what students have not communicated in the poster.
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Strong potential.</b> Although situational assessments tend to emphasize application of learning, applications are built on a disciplinary foundation. The success of assessment of content learning will depend on the expertise demonstrated in the design of the applied assessment.
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Overall Mixed potential.</b> Assessments that occur at the end of a program vary in their effectiveness for assessing content. In some cases, depth of knowledge required by some demonstrations will not allow an estimate of broad knowledge in the discipline.
<b>STANDARDIZED TESTS</b>	<b>Mixed potential.</b> Currently there are two primary standardized exams that allow for comparison across institutions as well as tracking changes in program achievement over time: the Academic Concentration Applied Test (ACAT) and the Major Fields Test by ETS. Each exam measures knowledge in the subdisciplines of psychology, but student course selection may adversely affect overall performance on either instrument. Care must be exercised in interpreting the results.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Strong potential.</b> Developing a department examination is a time-consuming but effective way to track changes in student knowledge over time but does not provide normative comparison with other programs. In addition, test security and changes in content knowledge make this practice complex.
<b>CAPSTONE EXPERIENCES</b>	<b>Mixed potential.</b> The utility of capstone performance to assess content knowledge greatly depends on the scope of the course design. Students are more likely to develop deep levels of expertise in more narrowly defined areas of psychology in most capstone designs. To the extent that their performance represents what they can do within specific performance parameters, the capstone may be a satisfying method to assess the ability to deal with content in sophisticated ways. However, more broadly conceived capstone courses (e.g., history, systems of psychology) may provide broader assessment opportunities.
<b>INTERNSHIP/ PROFESSIONAL APPLICATIONS</b>	<b>Moderate potential.</b> Internships and professional applications facilitate specific types of applications. For example, an industrial-organizational internship may be an optimal way for a student to demonstrate the knowledge base related to the subdiscipline, but it may not be satisfying as a broad assessment.
<b>PORTFOLIOS</b>	<b>Strong potential.</b> Selecting and justifying selections from explicit departmental criteria will facilitate student reflection regarding the level of expertise they have developed in the content of psychology.
<b>ASSESSMENT CENTER METHODS</b>	<b>Strong potential.</b> Similar to structured assessments, the in-basket strategies of assessment center methods can provide insight into student abilities to apply principles from the content of psychology.
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Limited potential.</b> Because much of content learning is fragile, longitudinal studies of content retention are likely to be disappointing sources of student learning. In addition, merely reporting how sturdy content learning is over time rather than directly assessing may be content learning will be a less reliable measure.

<b>GOAL 1: Knowledge Base of Psychology (continued)</b>	
<b>SELF-ASSESSMENT</b>	<b>Overall Mixed potential.</b> As can be seen from student anticipation of how well they performed on an exam, student ability to judge their own expertise is variable.
<b>STUDENT JOURNALS</b>	<b>Moderate potential.</b> Journal instructions can specify the manner in which students should interact with the content of the discipline. For example, instructions might require that students demonstrate the appropriate application of five concepts or principles from the discipline. Students will vary in their own expert judgment on the success of addressing the concepts or principles in the manner anticipated by the faculty.
<b>SELF-CRITIQUES</b>	<b>Mixed potential.</b> Students have limited experience in making judgments about how well they have met the content criteria of a given assignment. Students often drift to the easier-to-judge aspects of performance, such a format concerns, interest generation, or comfort level rather than exploring how well they have reflected content expertise.
<b>COLLABORATION</b>	<b>Mixed potential.</b> Some methods offer effective avenues for examining content and theory, while others are less promising.
<b>RESEARCH TEAMS</b>	<b>Strong potential.</b> Research teams give students an opportunity to demonstrate content expertise in two dimensions: research methods and the subject matter that the research is designed to explore. Students can receive separate evaluations on the extent to which they have collectively demonstrated research expertise as well as whether they have appropriately represented the target content.
<b>GROUP PROJECTS</b>	<b>Strong potential.</b> Group projects can also provide a content-based opportunity to develop group skills. Projects can reflect successful or unsuccessful strategies to master relevant content and principles. However, group projects suffer similar limitations to individual projects. Committing in-depth study to one arena may require the sacrifice of exposure to other content in the course.
<b>ON-LINE ACTIVITIES</b>	<b>Limited potential.</b> Unless students are given very constrained instructions regarding how to pursue content collaboration, the use of chat room or email exchanges to monitor content expertise may be challenging.
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Mixed potential.</b> In general, surveys and interviews are not recommended because the assessment of content is not likely to be direct.
<b>SATISFACTION SURVEYS</b>	<b>Poor potential.</b> Assessing content expertise through satisfaction surveys is too indirect to be recommended.
<b>PERFORMANCE REVIEWS</b>	<b>Moderate potential.</b> Although this method is time consuming, the next step (e.g., graduate school or employment) can provide for direct observation of the content of psychology.
<b>EXIT INTERVIEWS</b>	<b>Limited potential.</b> Exit interviews tend to focus on affective dimensions of learning as well as the collection of impressions that may facilitate program improvement. Content mastery is not routinely the focus of exit interviews.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Moderate potential.</b> A rigorous external examiner protocol could focus on the depth of content mastery of individual students. However, the expense and time limitations of this approach tend to focus on other aspects of student performance.
<b>FOCUS GROUPS</b>	<b>Not recommended.</b> Focus groups typically convene to solve a specific problem rather than provide a measure of content mastery. Such academic development may be inferred but there are other more direct methods to assess mastery.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Not recommended.</b> Engaging with alumni over the specifics of content that they can recall is likely to be a discouraging assessment strategy since the detail of the discipline dims with distance from graduation.

<b>GOAL 1: Knowledge Base of Psychology (continued)</b>	
<b>ARCHIVAL MEASURES</b>	<b>Mixed potential.</b> Archival measures can provide some insight into the content bases to which students have been exposed but will do little to assess more formal learning of the content in the discipline.
<b>TRANSCRIPT ANALYSIS</b>	<b>Limited potential.</b> Individual transcript analysis can provide not just a measure of the various content bases to which the student has been exposed but through grades can provide a gross measure of achievement in those areas. However, assessment experts recommend that other noncourse-based strategies will be more effective in providing legitimate measures of student and program achievement.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Limited potential.</b> Examining patterns of what transfer students provide can help departments determine what and when to offer in the curriculum, but will shed little light on the quality of learning.
<b>SYLLABUS AUDIT</b>	<b>Limited potential.</b> A syllabus audit can isolate the range of content exposure that students experience but will be poor indicators of actual learning.
<b>DEMOGRAPHIC DATA ANALYSIS</b>	<b>Not recommended.</b> Understanding the characteristics of the student body will provide little insight into their content mastery.
<b>ALUMNI DATABASE</b>	<b>Not recommended.</b> The alumni database does not directly reveal student expertise in the content of psychology. However, many programs rely on the percentage of students who go on to graduate school in the area as an indirect measure of content expertise.
<b>LIBRARY STATISTICS USAGE/WEB HITS</b>	<b>Not recommended.</b> Content expertise is not apparent in this archival analysis.

<p><b>GOAL 2: Research Methods in Psychology:</b> Understand and apply basic research methods in psychology, including research design, data analysis, and interpretation.</p> <p>2.1 Describe the basic characteristics of the science of psychology.</p> <p>2.2 Explain different research methods used by psychologists.</p> <p>2.3 Evaluate the appropriateness of conclusions derived from psychological research.</p> <p>2.4 Design and conduct basic studies to address psychological questions using appropriate research methods.</p> <p>2.5 Follow the APA Ethics Code in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.</p> <p>2.6 Generalize research conclusions appropriately based on the parameters of particular research methods.</p>	
<b>COURSE DATA</b>	<b>Mixed potential.</b> Useful for providing assessment of factual knowledge and some limited application. Research skills will be better assessed with other strategies that involve activities outside the traditional classroom.
<b>OBJECTIVE TESTS</b>	<b>Moderate potential.</b> Good method for assessing primarily factual knowledge, especially if the test questions can be demonstrated to have strong psychometric properties. Less useful in assessing application and higher level comprehension such as designing original research or performing and interpreting statistical calculations.
<b>ESSAY TESTS</b>	<b>Moderate potential.</b> More powerful method for assessing application and higher level comprehension, but is still limited in its ability to assess ability to design original research or perform and interpret statistical calculations because of limited time frame in testing situation.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Strong potential.</b> Because research methods courses are often a prerequisite for advanced courses, departments may also dictate specific assignments (e.g., research projects) that should be embedded in required coursework across different sections of the same methods and/or statistics courses and in subsequent courses in the curriculum.
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Moderate potential.</b> Provides quick, but often limited assessment, on student understanding and performance.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Strong potential.</b> Faculty can interpret sophistication in research skills from intellectual products. Because projects are done outside class, there may be some risk that a student's work is not an individual production. However, this limitation can be addressed by including a reflective piece that assesses the targeted skills.
<b>WRITTEN PRODUCTS</b>	<b>Strong potential.</b> Written reports of original research provide an ideal context for assessing the methodological skills and ethical issues involved in designing, conducting, and evaluating the results. Time constraints (e.g., IRB approval) and the labor intensive nature of original research may limit usefulness in some courses. Research projects may also only assess an understanding of the particular methods used, not a broader understanding.
<b>ORAL PRESENTATIONS</b>	<b>Moderate potential.</b> Individual oral presentations provide some opportunity to evaluate quality of research skills and ability to present a shorthand summary. However, these may be challenging to judge in the moment and they often lack details that allow for in depth assessment.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Moderate potential.</b> Graphical presentations can be useful in mapping the research process. Statistical understanding can be assessed through the accuracy and clarity of graphical presentations.
<b>POSTERS</b>	<b>Moderate potential.</b> The limited space available in most posters may not provide an ideal context in which to evaluate the full understanding and application of research methods.



<b>GOAL 2: Research Methods in Psychology (continued)</b>	
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Strong potential.</b> The presentation and interpretation of research findings in the popular media can be used to have students demonstrate their skill in addressing issues related to the design and interpretation of research. Current events can also be used as a starting point for students to design and conduct original research projects.
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Mixed potential.</b> Strategies in this category range from poor to strong.
<b>STANDARDIZED TESTS</b>	<b>Moderate potential.</b> Although standardized tests assess factual knowledge related to research methods and statistics, they fail to evaluate application of skills at the level identified for these outcomes.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Moderate potential.</b> Like standardized tests, they primarily focus on factual knowledge as opposed to application. In addition, they may lack strong psychometric properties.
<b>CAPSTONE EXPERIENCES</b>	<b>Strong potential.</b> Assuming that the capstone course or project has an expressive requirement (e.g., writing or speaking), it can provide an integrated demonstration opportunity.
<b>INTERNSHIP/ PROFESSIONAL APPLICATIONS</b>	<b>Limited potential.</b> The focus of most applied internship experiences tends to be in applied areas of psychology. However, some experiences may include the opportunity to design, conduct, and evaluate research (i.e., a research internship).
<b>PORTFOLIOS</b>	<b>Strong potential.</b> Explicit criteria that ask students to select "works" based on what these reveal about their research skills can provide an opportunity to evaluate the evolution of their abilities through a focused reflection on why they selected the items they did.
<b>ASSESSMENT CENTER METHODS</b>	<b>Poor potential.</b> Assessment center methods are generally limited in time and focus. They are unlikely to provide in depth information on all the outcomes associated with this goal because of inherent time constraints.
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Limited potential.</b> The complexities of tracking all of these skills over time mitigates against adopting this strategy to monitor their evolution, especially where different courses in the curriculum vary in the requirement to use these skills. Programs requiring both a survey research methods course with an original research project and a capstone research experience may have a limited opportunity to evaluate longitudinal development.
<b>SELF- ASSESSMENT</b>	<b>Mixed potential.</b> Developing students' metacognition of their understanding of research methods has seldom been addressed self-assessment strategies.
<b>STUDENT JOURNALS</b>	<b>Moderate potential.</b> Although it may be unlikely that faculty would choose to invest time reading about students' struggle to learn research methods, this technique can be adapted to a research journal where students keep a record of research ideas, development and progress that reflects application of research methods knowledge.
<b>SELF-CRITIQUES</b>	<b>Limited potential.</b> When faculty can specify relevant performance criteria, students can provide an estimate of their research and statistical skills.
<b>COLLABORATION</b>	<b>Moderate potential.</b> Techniques in this category are moderate to limited in usefulness.
<b>RESEARCH TEAMS</b>	<b>Moderate potential.</b> Research teams can develop and evidence expertise in research skills through peer involvement and often model the collaborative nature of research at the professional level. Unfortunately, research teams may reduce a beginning or weak student's direct involvement in generating research ideas, research design, statistical analysis, and interpretation of results.

<b>GOAL 2: Research Methods in Psychology (continued)</b>	
<b>GROUP PROJECTS</b>	<b>Moderate potential.</b> Group projects involve similar issues to those of research teams.
<b>ON-LINE ACTIVITIES</b>	<b>Limited potential.</b> Archived on-line chat rooms, listservs, or bulletin boards can provide opportunities to assess the development and evolution of research ideas from start to finish.
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Mixed potential.</b> The assessment of attitudes by the students or other stakeholders may provide some feedback about research methods and statistical competence, but attitudes may not be an accurate indication of true skill attainment.
<b>SATISFACTION SURVEYS</b>	<b>Strong potential.</b> The abilities of students to design, conduct and evaluate research can be evaluated by employers, graduate advisors, or other stakeholders. External evaluators may explicitly need to be prompted to address these skills. This may be particularly effective for those students who continue in graduate programs in psychology.
<b>PERFORMANCE REVIEWS</b>	<b>Strong potential.</b> Stakeholders can provide an estimate of strengths and weaknesses within research skills with appropriate prompts for reflection.
<b>EXIT INTERVIEWS</b>	<b>Moderate potential.</b> Students can be asked to reflect on the evolution of their research and statistical skills.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Limited potential.</b> External examiners can ask probe questions to evaluate student comfort levels about research and statistical skills, but the evaluation of self-report relative to actual performance quality may be problematic unless evaluators also review actual products.
<b>FOCUS GROUPS</b>	<b>Limited potential.</b> Although focus groups most often convene to solve specific departmental problems, this area is often core to a program and challenging to students and may be more likely to be addressed in this context.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Limited potential.</b> Although a follow-up interview on this topic might invite demand characteristics, it may be useful to assess perceived skill levels in post-graduate settings.
<b>ARCHIVAL MEASURES</b>	<b>Limited potential.</b>
<b>TRANSCRIPT ANALYSIS</b>	<b>Moderate potential.</b> Transcript analysis can reveal the pattern of courses students may engage in (or avoid) in the development and use of research methods and statistical skills. The transcript analysis can provide both patterns and some in-class estimates of quality of student performance although the value of these may be limited.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Limited potential.</b> Departments can benefit by understanding the transfer courses that students may have taken in research methods and statistics and making comparisons to students who took departmental courses in these areas.
<b>SYLLABUS AUDIT</b>	<b>Moderate potential.</b> An analysis of which courses include content or projects emphasizing research methods or statistics may be a helpful first step in diagnosing where these skills need to be enhanced.
<b>DEMOGRAPHIC DATA ANALYSIS</b>	<b>Not applicable.</b>
<b>ALUMNI DATABASE</b>	<b>Not applicable.</b>
<b>LIBRARY STATISTICS USAGE/WEB HITS</b>	<b>Not applicable.</b>



<p><b>GOAL 3: Critical Thinking Skills in Psychology:</b> Respect and use critical and creative thinking, skeptical inquiry, and, when possible, the scientific approach to solve problems related to behavior and mental processes.</p> <p>3.1 Use critical thinking effectively.</p> <p>3.2 Engage in creative thinking.</p> <p>3.3 Use reasoning to recognize, develop, defend, and criticize arguments and other persuasive appeals.</p> <p>3.4 Approach problems effectively.</p>	
<b>COURSE DATA</b>	<b>Overall Mixed potential.</b> Classroom and course data can be used to assess critical and creative thinking, but the quality of the assessment depends on what is measured in these settings and not the setting per se.
<b>OBJECTIVE TESTS</b>	<b>Limited potential.</b> Objective tests can be used to assess critical thinking, but good objective tests of critical thinking are difficult to construct and cannot be used to assess what students actually do in an unstructured setting where critical thinking is required. They cannot assess the propensity to engage in critical thought. They are better as measures of recognition memory, and hence of limited usefulness in assessing critical thinking.
<b>ESSAY TESTS</b>	<b>Strong potential.</b> An essay test that poses an ecologically-valid scenario (ideally somewhat complex) where students need to explain/ describe their thinking and the conclusion they reached or problem they solved can be a good way to assess critical thinking.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Strong potential.</b> An embedded question or assignment can provide a measure of student's propensity to think critically (i.e., do they engage in critical thinking when the need for critical thinking is not cued or labeled).
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Poor potential.</b> Classroom assessment techniques can include reflections on what was learned. It is more likely useful as feedback to instructors about what students believe they have learned than a measure of learning per se.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Overall good potential.</b> Individual projects and performance assessment can be good measures of critical thinking, assuming that the project calls for extended and careful thought. The nature of the project or performance (e.g., solve a novel problem) is what determines the quality of the assessment. The quality of a critical thinking assessment most often lies in the way the instructor crafted the assignment and explained it to students.
<b>WRITTEN PRODUCTS</b>	<b>Strong potential.</b> Like essay tests, a written project needs to allow the student to show the thinking process that went into a conclusion or a solution to a problem.
<b>ORAL PRESENTATIONS</b>	<b>Strong potential.</b> Oral presentations are just an alternative format for presenting one's thinking, and thus are similar to written products in their ability to assess critical thinking.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Strong potential.</b> A graphic display of one's thinking can be an excellent assessment of the quality of a student's thinking. There are many concept maps and other ways to map verbal information onto spatial arrays that are well suited for critical thinking assessment. A completed template that shows the parts of a persuasive argument, for example, can be used to clarify complex topics and provide a "picture" of the student's thinking.
<b>POSTERS</b>	<b>Strong potential.</b> A poster can, and probably should, contain a mix of verbal and graphic displays. It can be used to assess critical thinking, if the topic or reason for the poster requires critical thought.
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Strong potential.</b> When this category includes activities such as role-playing, seeing problems from multiple perspectives, and similar activities, it can be a good way to demonstrate critical thinking skills.

<b>GOAL 3: Critical Thinking Skills in Psychology (continued)</b>	
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Overall Mixed potential.</b> Summative assessments usually refer to tests that are normed to provide comparative data, usually at the completion of a program of study. The normative information can be useful, but only if the test is valid in that it relates to the way students think critically when they are not in class.
<b>STANDARDIZED TESTS</b>	<b>Moderate potential.</b> There are several standardized tests of critical thinking. Unfortunately, they tend to be multiple-choice tests with short problems or scenarios described in each question. They are not generally good measures because real life is much messier, and there is rarely a single correct answer to ill-defined problems. They also do not measure what student's actually do in less structured settings. A quality standardized test is possible, if it includes both constructed response and multiple-choice alternatives to show how students approach problems <i>and</i> whether they can recognize a good response when they have to select from among a small set of alternatives.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Limited potential.</b> A locally developed test can reflect the curriculum that is taught, so it can be more useful to instructors, but locally-developed tests will rarely have the psychometric properties of good reliability and validity that a standardized test will have.
<b>CAPSTONE EXPERIENCES</b>	<b>Strong potential.</b> A capstone experience can be an extended project that requires the application of critical thinking skills to a wide range of issues. If well designed, capstone experiences can provide meaningful measures of critical thinking, but the instructor needs to have clear critical thinking objectives in mind when planning the capstone experience because it is not likely to assess critical thinking without deliberate planning.
<b>INTERNSHIP/ PROFESSIONAL APPLICATIONS</b>	<b>Limited potential.</b> Ideally, an internship or other professional application would require evidence of critical thinking, but they would need to be designed with this specific outcome in mind and that rarely happens. In general, instructors do not have direct control over internship experiences, which can make the value of an internship or other application as an assessment of critical thinking hit-or-miss.
<b>PORTFOLIOS</b>	<b>Strong potential.</b> A portfolio that is well planned to show growth in critical thinking skills over time (e.g., four years in college) can provide a good index of gains in critical thinking. Like the other methods, the value of portfolios depends on how carefully the intended critical thinking outcomes are articulated and carried across several different courses.
<b>ASSESSMENT CENTER METHODS</b>	<b>Strong potential.</b> An assessment center is usually a single place where a variety of assessment activities are planned and data are collected. Often they will include simulations of real-life scenarios and problems. If the activities are well planned, they can provide valuable data about critical thinking (e.g., an in-basket exercise).
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Limited potential.</b> Following students' development in critical thinking over time may be somewhat challenging in the absence of objective measures of that growth.
<b>SELF-ASSESSMENT</b>	<b>Overall Mixed potential.</b> A self-assessment is a student's own analysis of how well he or she is thinking. We know from a large number of studies that most people are poor judges of how well or how critically they think. These techniques can be useful over time if students learn to be more accurate in their self-assessment, but there are little data to suggest that this actually happens.
<b>STUDENT JOURNALS</b>	<b>Mixed potential.</b> Student journals seem to work well for a subset of students who actually reflect on their thinking. For many students, they are worthless exercises in filling up paper. Some instructors like to give students the experience of student journals so that those students who benefit from this activity are not penalized by those who do not. It can be useful, but only for some students. Clear instructions for journaling are required.

<b>GOAL 3: Critical Thinking Skills in Psychology (continued)</b>	
<b>SELF-CRITIQUES</b>	<b>Limited potential.</b> Given that most people are very happy with their ability to think critically, self-critiques can only be useful if students learn to see their own weaknesses. It is difficult to change belief about how well one thinks, but not impossible. Thus, one outcome of critical thinking instruction is the seemingly paradoxical result that students often rate themselves as poorer thinkers at the end of a course than at the start. This is a positive outcome, but it tells instructors very little about the student's actual ability to think critically.
<b>COLLABORATION</b>	<b>Overall Strong potential.</b> When students collaborate, they think in groups. Because much of the thinking they will do outside of class will involve other people, it can be a valid approach to assess critical thinking.
<b>RESEARCH TEAMS</b>	<b>Strong potential.</b> If the research team is given a problem that requires critical thinking and good guidelines for teamwork are provided so that each team member must contribute to some of the thinking, it can be useful. Instructors will want to capture at least a sample of the group thinking process so that it can be reviewed with each team.
<b>GROUP PROJECTS</b>	<b>Strong potential.</b> Group projects may be designed so that success only can occur when the group engages in effective critical thinking. Groups can process where their critical thinking was faulty to learn from their error.
<b>ON-LINE ACTIVITIES</b>	<b>Limited potential.</b> An on-line collaboration offers the possibility of tracking the thinking process via the written exchanges among team members. Of course, instructors would want students to know that their exchanges are being monitored.
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Overall Limited potential.</b> Interviews and surveys usually ask specific questions about individual beliefs and perceptions. They are not useful in assessing what is learned because they to focus on what students believe they learned and how satisfied they are with the learning.
<b>SATISFACTION SURVEYS</b>	<b>Poor potential.</b> Satisfaction surveys are often called "smilies" because respondents indicate how happy they are with an assignment or course. These are not the same as actual measures of what was learned and cannot be substituted for performance indicators.
<b>PERFORMANCE REVIEWS</b>	<b>Limited potential.</b> Stakeholders can be asked to rate the quality of critical thinking in their evaluations of performance but may require training to understand the parameters being investigated.
<b>EXIT INTERVIEWS</b>	<b>Poor potential.</b> Exit interviews occur when students are leaving a course or program, most often at graduation. They are reflections about what was good or bad about a program of study. Although these measures provide useful data, they usually do not measure critical thinking.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Moderate potential.</b> External examiners are used to provide an outside (i.e., unbiased) evaluation of the quality of learning. The ability of external evaluators to measure critical thinking depends on what they ask. If they ask satisfaction questions, then they are not assessing critical thinking, but if they ask students to think through a complex problem and explain what they are doing, the assessment can be a measure of critical thinking.
<b>FOCUS GROUPS</b>	<b>Limited potential.</b> Focus groups are often group evaluations of a program or course. They do not provide evidence of critical thinking unless the group is asked to solve a problem, reach a conclusion, make a complex decision or engage in some other critical thinking task.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Moderate potential.</b> Alumni follow-ups tend to utilize satisfaction questions, but they could provide evidence of the long-term retention of critical thinking skills and their transfer to novel domains if the alumni are asked questions that require critical thinking.

<b>GOAL 3: Critical Thinking Skills in Psychology (continued)</b>	
<b>ARCHIVAL MEASURES</b>	<b>Overall Poor potential.</b> Archival methods use data that are already available. As in the other categories, the quality of the assessment depends on what is in the available data.
<b>TRANSCRIPT ANALYSIS</b>	<b>Limited potential.</b> A transcript analysis is not likely to tell us much about critical thinking skills because we do not know what was required in each of the classes. Research has shown that much of the learning that occurs in college is relatively low level direct recall of information or low-level inferences.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Limited potential.</b> Course-taking patterns are not likely to be useful by themselves, but could be useful to see how different patterns relate to more valid measures of critical thinking.
<b>SYLLABUS AUDIT</b>	<b>Mixed potential.</b> An audit of a syllabus can sometimes show if critical thinking skills are being taught and learned in a particular class, but most often the syllabus is a list of reading assignments, dates assignments are due, and exam dates. There is rarely any information in the syllabus that provides a clue as to what students are required to do with the information to-be-learned.
<b>DEMOGRAPHIC DATA ANALYSIS</b>	<b>Poor potential.</b> These analyses will not tell us anything about the quality of the thinking of any individual or group.
<b>ALUMNI DATABASE</b>	<b>Poor potential.</b> An alumni database that provides information about the types of careers that students enter upon graduation and where they are working in 5 to 10 years can allow us to make inferences about critical thinking. In general, some careers (e.g., law, research) require better thinking skills than others (e.g., most clerical positions), but this is not a strong assessment method.
<b>LIBRARY STATISTICS USAGE/WEB HITS</b>	<b>Poor potential.</b> Ideally, students who read more should be better thinkers, but we do not know if this hypothesized relationship is true. A better index might be what they chose to read, but this is not a direct measure of critical thinking ability and it requires too many inferences to qualify as a valid assessment.

**GOAL 4: Application of Psychology:** Understand and apply psychological principles to personal, social, and organizational issues.

- 4.1 Describe major applied areas (e.g., clinical, counseling, industrial/organizational, school, etc.) and emerging (e.g., health, forensics, media, military, etc.) applied areas of psychology.
- 4.2 Identify appropriate applications of psychology in solving problems.
- 4.3 Articulate how psychological principles can be used to explain social issues and inform public policy.
- 4.4 Apply psychological concepts, theories, and research findings as these relate to everyday life.
- 4.5 Recognize that ethically complex situations can develop in the application of psychological principles.

<b>COURSE DATA</b>	<b>Mixed potential.</b> Classroom strategies show variable potential in measuring how students apply psychological principles.
<b>OBJECTIVE TESTS</b>	<b>Limited potential.</b> Objective tests (e.g., multiple-choice items) can assess knowledge of the roles of applied areas (e.g., employee selection, training, and evaluation in I/O psychology) and the differences among areas of applied psychology (e.g., clinical/counseling psychology).
<b>ESSAY TESTS</b>	<b>Strong potential.</b> Essay questions can assess knowledge of the application of psychology if they require students to describe examples of how psychological principles and methods can be used to solve specific problems (e.g., decreasing a child's tantrums, strengthening a college student's study skills, or helping an adult overcome a phobia) or how ethical issues can decrease the desirability of some applications.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Strong potential.</b> Embedded assessments represent activities that the department has agreed will provide a good measure of student learning or progress but take place within the confines of a class. Classroom assignments can be used to assess students ability to apply psychological principles, theories, and methods if they are designed to do so. For example, students can apply what they have learned about stress management in an assignment that requires them to (1) identify the major stressors in their lives, (2) devise a plan to improve their ability to cope with these specific stressors, and (3) evaluate the effectiveness of their plan.
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Not applicable.</b> Classroom assessment refers to informal methods to determine whether or not students understand course material (e.g., the end-of-class one minute paper). Thus, they are more suited to providing feedback to teachers about what is going on in their classrooms than producing data about student's ultimate ability to apply psychological principles and methods.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Mostly Strong potential.</b> Nearly all of the methods that address individual performance are reasonable to optimal means of addressing the application of concepts.
<b>WRITTEN PRODUCTS</b>	<b>Strong potential.</b> Any written assignment (e.g., a term paper, moral dilemma analysis) that requires students to describe how they would apply their psychological knowledge would be useful as a means of assessing knowledge of how psychological principles and methods can be applied. Of course, knowing how to apply psychological principles and methods and actually being able to apply them successfully are two different stories.
<b>ORAL PRESENTATIONS</b>	<b>Strong potential.</b> Oral presentations can be used to assess the ability to apply psychology in the same way that written products can.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Limited potential.</b> Simple graphic representations may be insufficient with regard to clarifying an application.
<b>POSTERS</b>	<b>Strong potential.</b> A poster can provide substantial evidence of student's ability to apply what they have learned in their methods classes. It can also provide faculty with an opportunity to evaluate students ability to "think on their feet" when they are asked questions during a poster session, which provides another venue for demonstrating application skills.

<b>GOAL 4: Application of Psychology (continued)</b>	
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Strong potential.</b> Simulations in which a "real world" situation is created in an artificial environment (e.g., counseling sessions in which the student "counselor" must provide counseling to a fellow student who is role playing a particular DSM category) can provide faculty with a rich opportunity to assess students ability to apply what they have learned in the classroom (e.g., listening skills, the development of rapport, professional mannerisms, etc.).
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Mixed potential.</b> Summative methods must have a predominant focus on application to serve this goal. Some summative approaches tend to have a broader focus.
<b>STANDARDIZED TESTS</b>	<b>Limited potential.</b> Some nationally standardized tests (e.g., ACAT, ETS Major Field Test) contain subtests the measure student's knowledge of psychological research methods (e.g., research design, statistical analysis, and graphic interpretation), which are legitimate examples of how psychologists apply the scientific method to solvable problems. However, most question sets favor lower-order questions rather than those that involved applied skills.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Limited potential.</b> A locally developed test will allow faculty the opportunity to collaborate to produce a locally developed test that incorporates application, but producing applied items will be as difficult locally as it is in national exams.
<b>CAPSTONE EXPERIENCES</b>	<b>Optimal potential.</b> There are many types of capstone experiences, but those that require enrollees to "do the discipline" are probably the most effective way for a department to assess its student's ability to apply the psychological principles and methods they have acquired in their previous class work. Capstone classes provide students with an opportunity "to demonstrate comprehensive learning in their major through some type of product or performance" (Palomba & Banta, 1999, p. 124). In a capstone class, senior majors pull together what they have learned in previous classes and use this integrating experience to demonstrate they are capable of doing what they should be able to do as they graduate from the program (e.g., perform research in a capstone laboratory or demonstrate clinical skills during an internship with a local crisis clinic). This process serves a dual purpose. It allows psychology majors with a final opportunity to practice and demonstrate the skills they will need to succeed after graduation on the job or in graduate school. It also provides the Psychology Department with a final opportunity to assess whether or not it has been successful in its mission to produce psychology majors who are capable of applying what they have learned. Palomba, C. A. & Banta, T. W. (1999). <i>Assessment essentials: Planning, implementing, and improving assessment in higher education</i> . San Francisco: Jossey-Bass Publishers. Available at <a href="http://www.josseybass.com/WileyCDA/WileyTitle/productCd-0787941808.html">http://www.josseybass.com/WileyCDA/WileyTitle/productCd-0787941808.html</a>
<b>INTERNSHIPS OR PROFESSIONAL APPLICATIONS</b>	<b>Strong potential.</b> See Capstone Experiences above for description of internships as assessment strategies. An internship or practicum taken under the direction of an on-the-job professional can be an invaluable experience for psychology students and it can also provide quality feedback to a department about its students' ability to apply what they have learned in the classroom if their on-the-job supervisors are willing and able to provide such feedback.
<b>PORTFOLIOS</b>	<b>Moderate potential.</b> Portfolios can produce longitudinal information, allow students to reflect upon their progress, and give them a voice in assessment. Artifacts could include test scores in classes that covered application topics, papers written on application, journals from internships, reports of projects, etc. The degree to which application is involved in the portfolio design criteria must be departmentally determined.
<b>ASSESSMENT CENTER METHODS</b>	<b>Mixed potential.</b> Simulations are excellent for assessing application skills, but the necessity for thorough planning, implementation, and the expense of training or paying assessors are strong drawbacks of this method. It might be interesting to train senior psychology majors (as part of a capstone) to be assessors in simulations conducted in lower-level classes in which psychological principles, theories, and methods are applied (e.g., case studies requiring DSM diagnoses or detection of flaws such as uncontrolled variables in research designs). This would allow faculty to not only involve students in the assessment process, but also provide students with the opportunity to learn and demonstrate useful skills in assessment.



<b>GOAL 4: Application of Psychology (continued)</b>	
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Mixed potential.</b> Longitudinal assessment studies involve the collection of pre- and post-information and, as such, they can provide evidence of how students change in their ability to apply the discipline over the course of their education. <i>This type of assessment may be most valuable to departments in non-selective institutions whose students enter with minimal skills. These departments may seek to prove that although their students do not graduate with the same high level of skills exhibited by the graduates of more selective school, their students actually make more progress (i.e., more added value) during their undergraduate years than their more high ability counterparts. As with all types of longitudinal design, it is important to realize that pre- and post-changes may be due to factors other than academic programs (e.g., maturity), and that tracking students through the process can be challenging (e.g., students who drop out).</i>
<b>SELF-ASSESSMENT</b>	<b>Strong potential.</b> Both self-assessment methods show promise for assessing application skills in psychology.
<b>STUDENT JOURNALS</b>	<b>Strong potential.</b> Students engaged in internships or service learning projects can be required to journal their experiences by keeping time logs, describing their actual activities, identifying their goals, evaluating whether or not they have accomplished their goals, and illustrating how their goals have been met. A perusal of these journals can give departments an accurate idea of their student's perceptions of their ability to apply the psychological principles and methods they have acquired in the classroom. However, better journal performance is facilitated by explicit directions to reflect application of course content.
<b>SELF-CRITIQUES</b>	<b>Strong potential.</b> When students have criteria that delineate successful performance, they can demonstrate the ability to judge their own skills in applying psychology concepts and principles.
<b>COLLABORATION</b>	<b>Mixed potential.</b> Traditional group projects and research teams show great potential for illustrating application skills; on-line tracking is much more problematic.
<b>RESEARCH TEAMS</b>	<b>Strong potential.</b> One specialized type of group problem-solving is the research team, which requires its members to apply what they have learned in their research methods class in a collaborative setting. The research team can empower students to learn how to apply methods to solve problems without having the full responsibility involved in solo projects. In addition, the number of team members has the potential to enhance the quality of the application just as it has the potential to make completing the project more challenging.
<b>GROUP PROJECTS</b>	<b>Strong potential.</b> Group projects allow faculty to assess their students ability to apply the principles they have acquired in two ways. When students work together to solve problems, they can demonstrate applications in content such as using Kohlberg's stages to determine moral reasoning. Their group work can also illustrate what principles from social psychology can be brought to bear to make the work satisfying (e.g., how to minimize social loafing). Applying these principles is an excellent example of the application of psychological knowledge to both everyday life (e.g., persuading children to do household chores rather than being waited upon by their mothers as if they were members of the royal family) and organizational situations (e.g., getting maximum performance from all members of a committee or work team). Carefully devised rubrics to assess collaboration attitudes and skills (e.g., willingness to volunteer and consensus-building) can be used by both faculty and peers at strategic stages of a project.
<b>ON-LINE ACTIVITIES</b>	<b>Limited potential.</b> Tracking group problem-solving process through online discussion can be a rich source of data for determining the evolution of application skills; however, the Disadvantages involved in deconstructing the qualitative materials make this strategy less desirable.



<b>GOAL 4: Application of Psychology (continued)</b>	
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Moderate potential.</b> Interview methods generally can have application skills as a target but this strategy requires making the assessment of application skills a prominent part of the design.
<b>SATISFACTION SURVEYS</b>	<b>Moderate potential.</b> Satisfaction surveys can be used to determine how well current students or alumni perceive they are learning or learned how to apply psychology. However, the survey must be carefully crafted to reflect an estimate of the student's application skills.
<b>PERFORMANCE REVIEWS</b>	<b>Strong potential.</b> Subsequent work settings provide good contexts in which generalization of skills can be evaluated.
<b>EXIT INTERVIEWS</b>	<b>Moderate potential.</b> Exit interviews can be designed to focus on the aspects of application outlined in this goal.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Moderate potential.</b> External examiner interviewers usually work from a protocol that should be shaped by the department's interest in the effectiveness of application skills.
<b>FOCUS GROUPS</b>	<b>Strong potential.</b> Focus groups can be used to gather initial data that may zero in on a specific problem. As such, the purpose of the group may be to solve a problem and provide feedback to the department based on the expressed purpose. As such, students can apply principles and concepts in psychology both in the process and product of the focus group.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Limited potential.</b> Calling alumni and identifying examples of successful or not so successful applications of psychology can be a source of data, but the demand characteristics of the situation may produce false positive data. If the purpose is not expressly identified by the researcher, the interview may be suspect on the basis of its potential deception.
<b>ARCHIVAL MEASURES</b>	<b>Mixed potential.</b> In most cases, archival measures cannot provide information about the student's ability to apply psychology. At best, archival records may reveal the intention of course design to address application skills.
<b>TRANSCRIPT ANALYSIS</b>	<b>Limited potential.</b> Transcript analysis might yield the percentage of students engaged in "applied" courses (e.g., internships) as well as the quality of their performance in the class, which could provide a diffuse measure of application skills.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Not applicable.</b>
<b>SYLLABUS AUDIT</b>	<b>Strong potential.</b> A syllabus audit would be a good first step in determining whether or not faculty are requiring students to engage in assignments that require the application of psychological principles and methods. Where application skills have been identified as a goal by the department, this outcome should be reflected in a reasonable number of syllabi or the department will need to re-examine their curriculum offerings or mission.
<b>DEMOGRAPHIC DATA ANALYSIS</b>	<b>Not applicable.</b>
<b>ALUMNI DATABASE</b>	<b>Limited potential.</b> Determining the percentage of alumni who enter professions that require the application of psychological knowledge and skills would allow a department to get a sense of how successful its curriculum is in preparing students to apply psychology on-the-job. However, the link between job title and application of psychology principles may be fuzzy even for the former student.
<b>LIBRARY STATISTICS USAGE/WEB HITS</b>	<b>Not applicable.</b>

**GOAL 5: Values in Psychology:** Value empirical evidence, tolerate ambiguity, act ethically, and reflect other values that are the underpinnings of psychology as a science.

- 5.1 Recognize the necessity of ethical behavior in all aspects of the science and practice of psychology.
- 5.2 Demonstrate reasonable skepticism and intellectual curiosity by asking questions about causes of behavior.
- 5.3 Seek and evaluate scientific evidence for psychological claims.
- 5.4 Tolerate ambiguity and realize that psychological explanations are often complex and tentative.
- 5.5 Recognize and respect human diversity.
- 5.6 Assess and justify their engagement with respect to civic, social, and global responsibilities.
- 5.7 Understand the limitations of their psychological knowledge and skills.

<b>COURSE DATA</b>	<b>Not recommended overall.</b> Although the subtypes demonstrate differential opportunities for assessing values, in general, classroom and course data support other goals more effectively. Direct inquiry into values may be vulnerable to demand characteristics. Inferring values from indirect methods may be prone to interpretive error.
<b>OBJECTIVE TESTS</b>	<b>Not recommended.</b> It may be possible to assess values using this technique but it is unlikely to yield an accurate assessment of the student's true commitment to scientific values.
<b>ESSAY TESTS</b>	<b>Limited potential.</b> Questions that are specifically targeted to inferring and discussing relevant science values may be somewhat helpful, but again the demand characteristics may distort validity.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Limited potential.</b> Departments can embed values checkpoints at various points in required courses, but demand characteristics may influence students to respond in socially desirable ways rather than what they truly believe.
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Not recommended.</b> Most classroom techniques concentrate on capturing student understanding of content or appraisal of class effectiveness. Their values may be inferred in the latter purpose but those data tend to be of secondary interest in this application.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Mixed potential overall.</b> Individual projects and other forms of performance assessment do provide some opportunity to assess values based on how students develop their arguments and express what they have learned. Errors (e.g., reliance on personal experience vs. empirical evidence) may provide the basis for a strong inference about which scientific values have not been embraced. Faculty may feel uncomfortable offering feedback based on inferences, no matter how compelling.
<b>WRITTEN PRODUCTS</b>	<b>Strong potential.</b> Written work can assess values in psychology either by addressing explicit values as the focus of the writing or by making errors that reveal the notable absence of an expected value (e.g., when students reports that an experiment "proves" a hypothesis. The presence of designated scientific values in writing projects tends to enhance the overall evaluation of quality of the work since the voice of the paper reflects the values of the community.
<b>ORAL PRESENTATIONS</b>	<b>Strong potential.</b> Oral presentations can also provide significant information about the degree to which students adhere to the values of the psychological community either by the direct values espoused in the presentation or the errors that reveal either a misunderstanding or rejection of those values. Typically, faculty do not directly grade presentations based on the values expressed; however, speeches and presentation that more accurately reflect psychology values may exert a positive influence on the grade and feedback.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Limited potential.</b> The abstract nature of values does not lend itself as readily to this type of assessment.

<b>GOAL 5: Values in Psychology (continued)</b>	
<b>POSTERS</b>	<b>Limited potential.</b> Unless the assigned poster addresses values in an explicit way, faculty may have to infer relevant values from <b>posters</b> designed to address other more concrete concepts. In addition, spontaneous discussion about the poster production can probe student values as one source of data about how the students solved the problem. However, this situation lends itself to strong demand characteristics so students may report the values that will make the instructor happy, not necessarily the true values that motivate their behavior.
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Strong potential.</b> Structured problem-solving scenarios can be designed around the scientific values specified in this goal. Students can be asked to resolve some value conflicts in ways that will illustrate whether they have integrated the common values psychologists most typically espouse.
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Mixed potential overall.</b> This category contains some methods that show especially good potential for assessing the values that the student has learned to honor, but other methods are less profitable. The department will need to determine their comfort level with whether and how to assess scientific values.
<b>STANDARDIZED TESTS</b>	<b>Not recommended.</b> There are no commonly used tests of psychological values. There may be more generic scientific value inventories but these have not been implemented.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Not recommended.</b> There are no known inventories on psychological values that have been developed in local contexts.
<b>CAPSTONE EXPERIENCES</b>	<b>Strong potential.</b> The design of the capstone experience can and perhaps should include a component in which the student actively identifies the ways in which their work in the course actively expresses scientific values. Values and ethics may be the content base for the capstone as well, which provides several venues to assess what the student recognizes, understands, and practices among scientific ethics.
<b>INTERNSHIP/ PROFESSIONAL APPLICATIONS</b>	<b>Strong potential.</b> Settings in which students can make practical applications of the psychology content they have learned can illustrate the degree to which they have accepted and practiced scientific values. However, not all internship supervisors are likely to have a keenly developed sense of the values expectations. Therefore, a survey or set of criteria may be most useful in framing feedback on the degree to which students illustrate those principles.
<b>PORTFOLIOS</b>	<b>Strong potential.</b> One criterion that can drive selection of work for the student portfolio is the degree to which those products illustrate psychological values. The criteria add legitimacy to faculty comments about the salience of the values in student performance. Including a self-assessment dimension may further foster student's understanding of the critical values.
<b>ASSESSMENT CENTER METHODS</b>	<b>Mixed potential.</b> Not all assessment center methods directly address values. However, it may be possible for students to justify the actions they take in performance assessment situations from the values to which they subscribe. For example, the student might be asked to simulate serving as an editor who needs to choose among three articles, which differ dramatically in the degree to which those papers adhere to the prescribed values. The justification for the selection would reveal the student's values.
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Strong potential.</b> Qualitative studies of student's changes over time could capture shifts in their adherence to scientific values although traditionally the emphasis in such studies tends to be more focused on the value of the content base itself. Departments would benefit from knowing what elements of the curriculum foster improvements in the practice of scientific values. For example, in which courses are students likely to become comfortable with complexity and ambiguity? Well-framed qualitative investigation would yield such answers.

<b>GOAL 5: Values in Psychology (continued)</b>	
<b>SELF-ASSESSMENT</b>	<b>Mixed potential overall.</b> Many departments do not pay direct attention to the assessment of psychological values since these may be regarded as abstract or esoteric. In such situations, students will be less well prepared to self-assess. However, to the extent that departments can clarify their expectations about the ways in which they expect student values to change toward greater appreciation of the scientific aspects of psychology, the more student self-assessment can be facilitated.
<b>STUDENT JOURNALS</b>	<b>Mixed potential.</b> In <b>student journals</b> , values can be addressed directly or they may be inferred based on student discussion of related phenomena. Better journal entries will be framed in ways that students can directly discuss their practice of identified values.
<b>SELF-CRITIQUES</b>	<b>Strong potential.</b> Where departments make their values & expectations explicit, students should be able to evaluate the extent to which their own work matches these expectations.
<b>COLLABORATION</b>	<b>Limited potential overall.</b> The assessment of the degree to which individuals express scientific values may be challenging to assess in group contexts. Even when the focus of the group activity is directly linked to values, discussion about values may not predict individual behavior. On the other hand, conflict situations may clarify the degree to which students differ in the values that they profess.
<b>RESEARCH TEAMS</b>	<b>Limited potential.</b> Students who work under the direction of a research mentor are likely to receive indirect training on the scientific values that undergird high quality research. When students are challenged to explain why certain actions are required as part of the research process, their understanding and adherence to scientific values can be assessed.
<b>GROUP PROJECTS</b>	<b>Limited potential.</b> Most group projects that transpire in the undergraduate curriculum are unlikely to address scientific values directly. However, some projects could be designed that would allow students to solve problems in such a way that their collective grasp of scientific principles could be demonstrated.
<b>ON-LINE ACTIVITIES</b>	<b>Poor potential.</b> Values may be inferred from group process but the amount of work required makes this assessment approach untenable.
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Mixed potential overall.</b> Various approaches in this goal produce differential outcomes in identifying values.
<b>SATISFACTION SURVEYS</b>	<b>Limited potential.</b> Satisfaction surveys do not tend to focus on values related to psychology education. Perhaps some survey items could be crafted to address values, but that might detract from the main purpose.
<b>PERFORMANCE REVIEWS</b>	<b>Limited potential.</b> Inferring other's values from their performance is dicey business. Perhaps it is not best to describe definitively what the values related to psychology education might be.
<b>EXIT INTERVIEWS</b>	<b>Strong potential.</b> Although assessing values will be determined by the concentration of the interview protocol, it is possible to have students conduct some targeted reflection on the values that they have embraced during the course of their education. An additional problem is that the values reported during an interview may not be the values of practice.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Strong potential.</b> Again, the success in identifying values is dependent on the design of the protocol. It is possible to gain some insight about how values have changed, but personal reports may not correspond to performance realities beyond the interview.
<b>FOCUS GROUPS</b>	<b>Strong potential.</b> A focus group can be convened to address how values change as part of education. However, focus groups tend to have a problem-solving focus apart from values.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Limited potential.</b> Discussing values-related issues with alumni may be a window into their values structure, but the complications of this method, including the problem of deception, make it a less.

<b>GOAL 5: Values in Psychology (continued)</b>	
<b>ARCHIVAL MEASURES</b>	<b>Not recommended overall.</b> Archival measures generally cannot provide a good gauge of values professed or practiced by psychology students.
<b>TRANSCRIPT ANALYSIS</b>	<b>Not recommended.</b> Although it is possible to infer some values from course selections, there are too many variables that influence course choice for the inferences to be meaningful. In addition, adhering to scientific values cannot be assumed just because science courses have been completed.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Not recommended.</b> Values cannot be inferred from past coursework.
<b>SYLLABUS AUDIT</b>	<b>Not recommended.</b> Most faculty do not explicitly address the values that a course promotes so an audit is unlikely to produce helpful data about values in psychology education.
<b>DEMOGRAPHIC DATA ANALYSIS</b>	<b>Not recommended.</b> Demographic databases are unlikely to address values in a direct and meaningful manner.
<b>ALUMNI DATABASE</b>	<b>Not recommended.</b> Tracking values explicitly is not a typical feature for the alumni database and doing so could be construed as invasive.
<b>LIBRARY USE/WEB HITS STATISTICS</b>	<b>Not recommended.</b> A checked-out library book or evidence of a web hit does not guarantee that the content has been examined or has created any influence.

<p><b>GOAL 6: Information and Technological Literacy:</b> Demonstrate information competence and the ability to use computers and other technology for many purposes.</p> <p>6.1 Demonstrate information competence at each stage in the following process: formulate a researchable topic; locate and choose relevant sources from appropriate media, use selected sources after evaluating their suitability; read and accurately summarize the general scientific literature of psychology.</p> <p>6.2 Use appropriate software to produce understandable reports of the psychological literature, methods, and statistical and qualitative analyses in APA or other appropriate style, including graphic representations of data.</p> <p>6.3 Use information and technology ethically and responsibly.</p> <p>6.4 Demonstrate these computer skills: use basic software programs, search the Web, use proper etiquette and security safeguards when communicating through e-mail.</p>	
<b>COURSE DATA</b>	<b>Mixed potential.</b> The only venue in which classroom and course data might reveal information technology expertise would be classes that are heavily mediated. For example, computer labs might be used for on-line testing that would allow some opportunity to gauge student expertise with this method. For the most part, information skills will be better assessed with other strategies that involve activities outside the classroom.
<b>OBJECTIVE TESTS</b>	<b>Limited potential.</b> Knowledge of information and literacy skills could be tested through objective test questions; however, other methods will demonstrate their understanding more directly.
<b>ESSAY TESTS</b>	<b>Poor potential.</b> In-class essays would have to focus on student reports of their information retrieval and technological strategies that would produce extremely boring reading.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Strong potential.</b> Departments may dictate specific milestones that should be embedded in required coursework. For example, faculty may specify that exposure to a psychology research database might be embedded in required 101 classes. In smaller contexts, librarians can be enlisted to help conduct information skills training. Later in the curriculum, faculty might identify a courses or set of courses in which they can commit to a particular length of paper with an explicit minimum of high quality scientific sources. The quality of information skills can be inferred from the product; the quality of technological expertise might require more digging or more explicit reporting mechanisms.
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Limited potential.</b> This approach may be helpful only in classes specifically focused on the development of information and technology skills.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Mixed potential.</b> Intellectual products provide a stimulus from which faculty can interpret sophistication in information and technological skills. When construction is remote, there may be some risk that the student's work is not an individual production. However, faculty can address this limitation by including a reflective piece that directly addresses the targeted skills.
<b>WRITTEN PRODUCTS</b>	<b>Optimal potential.</b> Written projects provide an ideal context in which to look at research generation, information evaluation, and technology skills.
<b>ORAL PRESENTATIONS</b>	<b>Moderate potential.</b> Individual oral presentations provide some opportunity to evaluate quality of resources; however, these may be challenging to judge in the moment. Oral presentations do provide an opportunity to examine PowerPoint or overhead management. In addition, the coherence and development of an oral presentation can reveal research strategies.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Limited potential.</b> Exploring concepts through graphics tends to be an intermediate step in developing research ideas. These may be difficult to assess quality. Such displays may or may not provide an opportunity to assess technology skills,



<b>GOAL 6: Information and Technological Literacy (continued)</b>	
<b>POSTERS</b>	<b>Moderate potential.</b> The limited space available in most posters may not provide an ideal context in which to evaluate the process of generating research ideas. The poster normally produces highlights so errors or suspect variations may be harder to determine. The execution of the poster will require some technological and aesthetic skills to be successful.
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Limited potential.</b> Situational assessments move remote activities into observable territory to facilitate faculty assessment. However, a situational assessment that covers all the outcomes associated with the goal is likely to be fairly intimidating. Performance anxieties may complicate student's ability to perform these complex skills in a situational assessment.
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Mixed potential.</b> Strategies in this category range from zero to maximally helpful.
<b>STANDARDIZED TESTS</b>	<b>Not available.</b> Although there is no standardized approach for measuring research skills, this gap represents an interesting development opportunity.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Limited potential.</b> Some departments have developed methods to assess information skills and research summarizing skills. Assessing these abilities using objective means will be efficient. Asking students to summarize literature will be more challenging and time-consuming but still do-able.
<b>CAPSTONE EXPERIENCES</b>	<b>Strong potential.</b> Assuming that the capstone course has an expressive requirement (e.g., writing or speaking), the capstone course can provide an integrated demonstration opportunity.
<b>INTERNSHIP/ PROFESSIONAL APPLICATIONS</b>	<b>Limited potential.</b> The focus of most applied summative experiences will not be focused on the development of the targeted skills.
<b>PORTFOLIOS</b>	<b>Strong potential.</b> Providing explicit criteria that ask students to select works based on what these reveal about their skills. The evolution of their abilities can be the focus of reflection on why they selected the items they did.
<b>ASSESSMENT CENTER METHODS</b>	<b>Limited potential. Assessment center methods,</b> like situational assessments, move remote activities into observable territory to facilitate faculty assessment. However, a situational assessment that covers all the outcomes associated with the goal is likely to be fairly intimidating. Performance anxieties may complicate student's ability to perform these complex skills.
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Limited potential.</b> The complexities of tracking these skills over time mitigates against adopting this strategy to monitor their evolution.
<b>SELF-ASSESSMENT</b>	<b>Mixed potential.</b> Developing student's metacognition of their achievement in information and technology skills has not been overtly addressed through self-assessment strategies.
<b>STUDENT JOURNALS</b>	<b>Limited potential.</b> It is unlikely that faculty would choose to invest time reading about student's struggle to learn information and technology skills. However, engaging in student journal writing might provide some keys to faculty about where the particular points of struggle might be.
<b>SELF-CRITIQUES</b>	<b>Strong potential.</b> Where faculty can specify relevant performance criteria, students can provide an estimate of their research conceptualization skills, their sophistication in evaluating information, and their polish in technological execution.



<b>GOAL 6: Information and Technological Literacy (continued)</b>	
<b>COLLABORATION</b>	<b>Mixed potential.</b> The range of potential in this category ranges from strong to poor.
<b>RESEARCH TEAMS</b>	<b>Strong potential.</b> A research team can develop expertise in research skills through peer involvement. Ironically, research teams may reduce a student's direct involvement in finding resources or producing polished copy. However, the opportunity to brainstorm with peers about developing concepts and executing research strategies makes this an attractive alternative.
<b>GROUP PROJECTS</b>	<b>Moderate potential.</b> Group projects can still involve many of the elements in this target area related to research teams.
<b>ON-LINE ACTIVITIES</b>	<b>Poor potential.</b> Tracking student skill development online will be a complex undertaking unless there is explicit direction for the online traffic to focus on this area of skill development.
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Mixed potential.</b> The assessment of attitudes by the students or other stakeholders may provide some feedback about information/technological competence, but attitudes may not be an accurate indication of true skill attainment.
<b>SATISFACTION SURVEYS</b>	<b>Strong potential.</b> The abilities of students to process information and use technology responsibly can be evaluated by their employers, their graduate advisors, or other stakeholders. External critics may require prompting explicitly to address this skill, but the context in which the critics work provides a reasonable normative comparison.
<b>PERFORMANCE REVIEWS</b>	<b>Strong potential.</b> Graduate school advisors and employers can readily provide comments on the quality of technological preparation for their setting.
<b>EXIT INTERVIEWS</b>	<b>Moderate potential.</b> Students can reflect on the evolution of their information processing and technological execution as part of the interview protocol.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Limited potential.</b> External examiners can ask probe questions to evaluate student comfort levels about the target skills, but it may be much more challenging to evaluate the quality of their performance from self-report in the absence of concrete evidence. If examiners also review printed materials or tapes of student work, they may be able to make reasonable judgment about student competence.
<b>FOCUS GROUPS</b>	<b>Limited potential.</b> Focus groups most often convene to solve specific problems for a department. Although the topic might be the target of a focus group, it is more likely used for other broader problems.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Not recommended.</b> A follow-up interview on this topic would be hard to execute without inviting demand characteristics that might distort the real skill levels attained.
<b>ARCHIVAL MEASURES</b>	<b>Limited potential.</b>
<b>TRANSCRIPT ANALYSIS</b>	<b>Moderate potential.</b> Transcript analysis can reveal the pattern of courses students may engage in (or avoid) in the development of relevant research skills. The transcript analysis can provide both patterns and some in-class estimates of quality of student performance although the value of these may be limited.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Limited potential.</b> Departments can benefit by understanding how transfer students may be prepared to engage in research and information activities.
<b>SYLLABUS AUDIT</b>	<b>Moderate potential.</b> Departmental activity examining where research and information skills are taught may be a helpful first step in diagnosing where these skills need to be enhanced.

<b>GOAL 6: Information and Technological Literacy (continued)</b>	
<b>DEMOGRAPHIC DATA ANALYSIS</b>	Not applicable.
<b>ALUMNI DATABASE</b>	Not applicable.
<b>LIBRARY STATISTICS USAGE/WEB HITS</b>	Not applicable.

**GOAL 7: Communication Skills:** Communicate effectively in a variety of formats.

- 7.1 Demonstrate effective writing skills in various formats (e.g., essays, correspondence, technical papers, note taking) and for various purposes (e.g., informing, defending, explaining, persuading, arguing, teaching).
- 7.2 Demonstrate effective oral communication skills in various formats (e.g., group discussion, debate, lecture) and for various purposes (e.g., informing, defending, explaining, persuading, arguing, teaching).
- 7.3 Exhibit quantitative literacy.
- 7.4 Demonstrate effective interpersonal communication skills.
- 7.5 Exhibit the ability to collaborate effectively.

<b>COURSE DATA</b>	<b>Moderate to strong potential overall.</b> These methods can be used to assess student's communication skills but only if writing, speaking, and presentation assignments are made part of the coursework.
<b>OBJECTIVE TESTS</b>	<b>Not recommended.</b> Objective tests can be used to assess student's factual knowledge of psychology but have no merit as a metric of student's writing and speaking skills. Poor means of assessing interpersonal skills.
<b>ESSAY TESTS</b>	<b>Strong potential.</b> Essay tests permit careful assessment of student's writing skills.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Moderate potential.</b> This method can be used in any psychology course to assess student's writing skills. Embedding specific departmental assessments to evaluate communication skills in selected courses may be a sound strategy.
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Moderate potential.</b> Classroom assessment techniques that focus on measuring student's writing, speaking, interpersonal, and presentation skills may be effective tools for this purpose.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Strong potential overall.</b> All assessment strategies in this category provide direct measures of skills in these areas.
<b>WRITTEN PRODUCTS</b>	<b>Strong potential.</b> Essays, term papers, and laboratory assignments offer perfect opportunities to assess student's conceptual understanding of material; their ability to develop rationale arguments in support of a theory, data, or issues; their understanding of APA style; and language use.
<b>ORAL PRESENTATIONS</b>	<b>Strong potential.</b> Oral reports represent the perfect means of assessing student's public speaking/oral communication abilities.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Strong potential.</b> This method permits assessment of student's abilities to communicate information, particularly numerical data, in a visual medium.
<b>POSTERS</b>	<b>Strong potential.</b> This method permits simultaneous assessment of student's writing skills, graphic display skills, and oral communication skills.
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Strong potential.</b> Placing students in situations that require them to role play, participate in mock interviews, and so on, may be an effective means of assessing their ability to think on their feet, speak extemporaneously, and interact with each other.

<b>GOAL 7: Communication Skills (continued)</b>	
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Limited to moderate potential overall.</b> Recommendations vary in this category from strong potential to not recommended.
<b>STANDARDIZED TESTS</b>	<b>None available.</b> There are no existing national normed tests to address communication skills in psychology in summative performance.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Limited to Strong potential.</b> Locally developed essay tests permit assessment of student's writing skills; objective tests do not.
<b>CAPSTONE EXPERIENCES</b>	<b>Moderate to Strong potential.</b> Capstone courses that include a writing or speaking component represent excellent opportunities to assess senior student's communication abilities. Group activities may be useful in assessing student's interpersonal skills.
<b>INTERNSHIP/ PROFESSIONAL APPLICATIONS</b>	<b>Limited potential.</b> Unless the internship/professional application involves writing or speaking components that are directly assessed, this method holds little promise for assessing student's communication skills. However, this method may be useful for assessing student's abilities to collaborate with others in a real-life setting, thus providing information on their interpersonal skills.
<b>PORTFOLIOS</b>	<b>Strong potential.</b> Portfolios entail collections of written work that has been created over time and thus represent an effective means of assessing the development of student writing skills.
<b>ASSESSMENT CENTER METHODS</b>	<b>Limited potential.</b> In-basket strategies and other assessment methods need to build in explicit communication tasks to qualify for consideration.
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Mixed potential</b> Longitudinal tracking of student's communication abilities over time can be a useful source of information, however, the complexities of this approach (e.g., storage, feedback intensiveness) discourages its use.
<b>SELF-ASSESSMENT</b>	<b>Moderate to Strong potential overall.</b> Self-assessment can be used effectively in almost any psychology course. While self-assessment strategies permit insight into student's academic experiences, they vary in value for assessing student's communication abilities. In many cases, faculty construct self-assessment documents casually and this practice may limit opportunity to examine student's polished communication skills.
<b>STUDENT JOURNALS</b>	<b>Moderate to Strong potential.</b> The usual purpose of journal assignments is to encourage personal expression and insight rather than as a vehicle for assessing communication skills; however, adding specific communication criteria to journal directions can facilitate assessment in this area.
<b>SELF-CRITIQUES</b>	<b>Moderate to Strong potential.</b> Students can provide judgments of their own communication strengths and weaknesses although personal bias may limit the accuracy of their judgments. Clearly established communication criteria and developmental practice in using the criteria will facilitate the best results.
<b>COLLABORATION</b>	<b>Limited to Moderate potential overall.</b> Group projects offer students a chance to collaborate, but do not guarantee the chance to assess individual student communication skills. However, these methods do hold potential for assessing student's abilities to work in groups.
<b>RESEARCH TEAMS</b>	<b>Limited potential.</b> The primary objective of most research teams concentrates on the product (i.e., empirical research, data collection). Although the development of communication skills can be assessed, such comprehensive attention to student contributions is not typical.

<b>GOAL 7: Communication Skills (continued)</b>	
<b>GROUP PROJECTS</b>	<b>Moderate potential.</b> Group projects permit attention to both product and process. However, in practice most faculty pay greater attention to the quality of the product than the process.
<b>ON-LINE ACTIVITIES</b>	<b>Not recommended</b> Monitoring electronic communication archives to assess communication skills seems indirect and time-consuming.
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Mixed potential overall.</b> Evaluating communication through interview or survey presents mixed potential, influenced substantially by selected format. Objective/Likert type surveys permit almost no opportunity to measure students' communication skills; open-ended survey questions are limited in assessing students' written communication skills because they generally require very short "quick" responses.
<b>SATISFACTION SURVEYS</b>	<b>Limited potential.</b> These types of surveys only marginally examine written communication skills.
<b>PERFORMANCE REVIEWS</b>	<b>Moderate potential.</b> External assessors can provide feedback on quality of communication skills that will reflect their specific communication concerns (e.g., employers can provide feedback on the effectiveness of communication abilities within the worksite).
<b>EXIT INTERVIEWS</b>	<b>Strong potential.</b> Although this type of interview can be time-consuming, it may permit effective assessment of senior student's oral communication and interpersonal skills.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Strong potential.</b> External examiners can also assess oral communication and interpersonal skills with the potential additional advantage of greater objectivity.
<b>FOCUS GROUPS</b>	<b>Limited to Moderate potential.</b> This method may permit assessment of student's social interaction abilities and skills but is generally of limited use because of time and logistical considerations.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Limited to Moderate potential.</b> This approach can be problematic since communication skills would be indirectly assessed in this approach.
<b>ARCHIVAL MEASURES</b>	<b>Not recommended overall.</b> These methods reveal little useful information about student's communication abilities.
<b>TRANSCRIPT ANALYSIS</b>	<b>Not recommended.</b> A transcript can provide information on formal coursework that should contribute to communication skill development but does not address individual achievement.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Not recommended.</b> Transfer patterns may alert faculty to gaps in student's communication course preparation, but do not directly address skill levels.
<b>SYLLABUS AUDIT</b>	<b>Limited potential.</b> Departments can determine the extent to which specific communication skills are built into the curriculum but quality of experience is not directly observable.
<b>DEMOGRAPHIC DATA ANALYSIS</b>	<b>Not recommended.</b> No pertinent data can be gained through this process.
<b>ALUMNI DATABASE</b>	<b>Not recommended.</b> No pertinent data can be gained through this process.
<b>LIBRARY USE/WEB HITS STATISTICS</b>	<b>Not recommended.</b> An analysis of this type can reflect student's formal interest in communication related books or websites, but does not provide direct information on skill attainment.

<p><b>GOAL 8: Sociocultural and International Awareness:</b> Recognize, understand, and respect the complexity of sociocultural and international diversity.</p> <p>8.1 Interact effectively and sensitively with people of diverse abilities, backgrounds, and cultural perspectives.</p> <p>8.2 Examine the sociocultural and international contexts that influence individual differences.</p> <p>8.3 Explain how individual differences influence beliefs, values, and interactions with others and vice versa.</p> <p>8.4 Understand how privilege, power, and oppression may affect prejudice, discrimination, and inequity.</p> <p>8.5 Recognize prejudicial attitudes and discriminatory behaviors that might exist in themselves and in others.</p> <p>8.6 Predict how interaction among diverse people can challenge conventional understanding of psychological processes and behavior.</p>	
<b>COURSE DATA</b>	<b>Overall Mixed potential.</b> In class strategies vary in their effectiveness in gauging learning in this diversity-related goal.
<b>OBJECTIVE TESTS</b>	<b>Mixed potential.</b> Objective tests can provide in-class assessment of facts and principles, but other approaches are likely to produce greater gains.
<b>ESSAY TESTS</b>	<b>Mixed potential.</b> Essay questions can provide a great vehicle for evaluating student knowledge of diversity-oriented facts and also for allowing students the opportunity to reflect on key ideas in coherent essays. The drawback is that the topics may produce strong demand characteristics that may produce discrepant predictions from real behavior.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Strong potential.</b> Many departments have opted to designate specific courses as "diversity oriented" and entrust these courses to provide the learning experiences and associated assessments to accomplish the outcomes related to this goal. If a department collaborates on the design of the outcomes or learning experiences, this approach can be profitable. Sharing outcomes across a small number of courses may help this goal become more manageable.
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Moderate potential.</b> Private reactions at critical moments in a course may be a powerful learning vehicle for students. When teachers collect those observations, anonymous reactions may allow students to be more candid. From that collection, the faculty member may get a meaningful index about how the students are relating to topics as a whole but are unlikely to provide individual feedback to students in this very personal domain.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Overall Strong potential.</b> Because insights related to this goal are intensely personal, individual performances may be one of the most effective routes for assessing achievement in this area.
<b>WRITTEN PRODUCTS</b>	<b>Strong potential.</b> Whether the projects focus on cultural/ethnic differences or merely emphasize this area as part of a larger effort, written projects provide an opportunity to explore content as well as personal reactions. Better assignments will be driven by a rubric in which performance related to this goal can be made specific.
<b>ORAL PRESENTATIONS</b>	<b>Strong potential.</b> The advantages are similar to written products with the additional advantage that student learning can be probed by the audience members.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Moderate potential.</b> Concept maps can produce some preliminary ideas related to this goal, but are unlikely to serve as final products.
<b>POSTERS</b>	<b>Strong potential.</b> Posters can provide a great way for many students to demonstrate their learning. Rubrics can provide clear expectations about criteria for achievement.
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Moderate potential.</b> The demand characteristics of an assessment in diversity related learning runs some risk of producing artificial responses that may not be a true representation of student's attitudes. However, a situational assessment can be a reasonable measure of content knowledge in this area.

<b>GOAL 8: Sociocultural and International Awareness (continued)</b>	
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Mixed potential.</b> Although summative approaches can be used to address this area, none of the methods in this category produce optimal strategies.
<b>STANDARDIZED TESTS</b>	<b>None available.</b> At the present time, there is no standardized assessment instrument to address diversity knowledge and attitudes.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Poor potential.</b> It is hard to imagine that departments would concentrate on sociocultural and international dimensions in a locally developed objective test. Dedicating even just a few items on a broader test is unlikely to produce a helpful picture of student development in this arena.
<b>CAPSTONE EXPERIENCES</b>	<b>Moderate potential.</b> A capstone course can be dedicated to cross-cultural, ethnic, or international concerns so performance in a capstone can be assessed for this dimension.
<b>INTERNSHIP/ PROFESSIONAL APPLICATIONS</b>	<b>Limited potential.</b> Internships and field experiences can provide students with an opportunity to engage with populations that are divergent from their own, providing a rich venue in which to develop diversity-related skills.
<b>PORTFOLIOS</b>	<b>Moderate potential.</b> A diversity component can be a required feature in a portfolio. This requirement will only be workable in programs in which learning experiences produce meaningful opportunities to demonstrate diversity-related content and skills.
<b>ASSESSMENT CENTER METHODS</b>	<b>Moderate potential.</b> In-basket strategies or other assessment center methods can provide diversity-oriented learning opportunities; however, the demand characteristics of this approach may render performances that are more staged than genuine.
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Moderate potential.</b> The expense and time requirements of case and longitudinal studies of how students achieve their learning goals militate against the use of this method to address diversity concerns. In addition, changes in attitude and knowledge may not be a direct function of the curriculum so the findings of such studies may be misleading. However, examining attitude and content knowledge in this area would produce valuable information about the role of curriculum in facilitating this change.
<b>SELF-ASSESSMENT</b>	<b>Mixed potential.</b> Self-awareness can be a critical component of successful educational experiences in diversity-related content and skill development.
<b>STUDENT JOURNALS</b>	<b>Strong potential.</b> When students have the opportunity to learn about diversity-related issues, a journal may be a strong, if not optimal, way to allow personal exploration of controversial matters.
<b>SELF-CRITIQUES</b>	<b>Moderate potential.</b> Self-review can be a meaningful form of assessment in this arena when faculty develop clear and meaningful criteria for performance.
<b>COLLABORATION</b>	<b>Overall favorable potential.</b> Learning about differences by actual participation in groups may be an ideal way to develop diversity-related skills assuming that students get objective feedback based on their performances.
<b>RESEARCH TEAMS</b>	<b>Strong potential.</b> Research teams devoted to solving problems related to intercultural and international issues can provide an excellent vehicle for students to develop expertise in the content of this area.
<b>GROUP PROJECTS</b>	<b>Strong potential.</b> Group projects can provide direct experience for students who are learning to work with others who may be different from themselves. The nature of the project may also lend itself to enhanced learning of the content in this area.



<b>GOAL 8: Sociocultural and International Awareness (continued)</b>	
<b>ON-LINE ACTIVITIES</b>	<b>Moderate potential.</b> Online archives provide concrete evidence of social interaction across participants, which can be very useful in deconstructing conflict or otherwise understanding what makes diverse people work more effectively. Unfortunately, this method of assessment is quite labor intensive and may feel deceptive unless the students understand that their communications will be monitored for learning purposes.
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Mixed potential.</b> Interviews and surveys may not be the most strategic way to assess genuine diversity-related gains due to demand characteristics of the situation.
<b>SATISFACTION SURVEYS</b>	<b>Limited potential.</b> Surveying attitudes about diversity-related skills is likely to be perilous due to strong demand characteristics. However, it may be reasonable to include satisfaction items with the content and skills that encourage positive relating to diverse others.
<b>PERFORMANCE REVIEWS</b>	<b>Limited potential.</b> Stakeholders may not be able to describe sociocultural values and behaviors beyond the most basic of behaviors.
<b>EXIT INTERVIEWS</b>	<b>Moderate potential.</b> Although it may be reasonable to incorporate questions as part of an exit interview regarding how well the curriculum has prepared students to deal with diversity, the demand characteristics complicate the interpretation of the results.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Limited potential.</b> Students are likely to report attitudes that are consistent with creating a favorable impression. However, an external examiner's neutrality may provide a greater opportunity to assess realistic attitudes than methods that rely on program faculty.
<b>FOCUS GROUPS</b>	<b>Strong potential.</b> When a focus group is convened for the specific purpose of solving problems related to diversity, students can experience a rich learning opportunity that also provides markers of their growth. For example, a focus group might be designed to address ways to increase exposure to different peoples and cultures, which would allow for the assessment of attitudes and content.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Poor potential.</b> A follow-up with alumni that assesses attitudes or skills without necessarily disclosing that purpose is fraught with problems. Although a well-designed protocol may produce realistic responses, the ethical complications of this approach discourage its use.
<b>ARCHIVAL MEASURES</b>	
<b>TRANSCRIPT ANALYSIS</b>	<b>Limited potential.</b> A transcript analysis can only provide gross information about the presence or absence of courses devoted to diversity-related themes.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Limited potential.</b> Transcripts of transfers can provide some information about the degree to which new students may be bringing in diversity-related coursework. Understanding whether transfer students will have already engaged in such coursework can facilitate more targeted planning for the new institution.
<b>SYLLABUS AUDIT</b>	<b>Moderate potential.</b> Departments would benefit from an audit of existing syllabi to determine the extent to which this outcome is a routine part of the curriculum.
<b>DEMOGRAPHIC DATA ANALYSIS</b>	<b>Moderate potential.</b> Analysis of the demographics of students may be helpful in determining what kinds of experiences with other cultures or ethnic traditions would be useful in building awareness and related skills.
<b>ALUMNI DATABASE</b>	<b>Limited potential.</b> Tracking the characteristics of the database may be useful in terms of linking the student body with the alumni. It may be useful to target alums from specific traditions to assist in diversity training.
<b>LIBRARY STATISTICS USAGE/WEB HITS</b>	<b>Limited potential.</b> Faculty can learn whether international, cultural, and ethnic resource books see much action from the students, but user rates don't reliably indicate what has been learned by the students. More direct strategies are preferable.

<p><b>GOAL 9: Personal Development:</b> Develop insight into their own and others' behavior and mental processes and apply effective strategies for self-management and self-improvement.</p> <p>9.1 Reflect on their experiences and find meaning in them.</p> <p>9.2 Apply psychological principles to promote personal development.</p> <p>9.3 Enact self-management strategies that maximize healthy outcomes.</p> <p>9.4 Display high standards of personal integrity with others.</p> <p>9.5 Seek input from and experiences with diverse people to enhance the quality of solutions.</p>	
<b>COURSE DATA</b>	<b>Mixed potential.</b> Departments will naturally vary in relation to the importance of the personal development goal; however, the primary emphasis in most classroom activity and course assignments will be mastery of the appropriate content. Unless the courses itself has a particular or purposeful personal development focus or feature, it is unlikely much assessment of related outcomes will occur in courses.
<b>OBJECTIVE TESTS</b>	<b>Limited potential.</b> Personality inventories, such as the Myers-Briggs SIGI-PLUS, or assorted learning inventories can be used to develop some developmental strategies in classes that have a personal development emphasis (e.g., college success courses). The Multimedia Integrity Test (MIT) also provides an inventory related to integrity. However, a specific inventory has not been developed for this category, would be very expensive to develop, and would have narrow use in a typical psychology curriculum.
<b>ESSAY TESTS</b>	<b>Strong potential.</b> Although the quality of feedback will depend on the clarity of instructions, well-designed essay questions can be used to prompt personal reflection.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Strong potential.</b> Self-assessment strategies that are routinely embedded in course assignments will help develop strengths regarding self-evaluation, goal-setting, and other aspects of meta-cognition and self-regulation.
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Strong potential.</b> Classroom strategies that require students to construct meaning and make active connections to prior learning have the potential to build personal development skills if the items are designed to produce that outcome.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Mixed potential.</b> Personal development goals may be relevant to only a limited range of courses of educational experiences. However, individual projects provide good samples for personal reflection.
<b>WRITTEN PRODUCTS</b>	<b>Strong potential.</b> Journals, essays with a personal focus, letters, or other means of personal expression are better adapted to this goal than formats designed for scientific communication. Such work will necessarily have a strong emphasis on self-assessment.
<b>ORAL PRESENTATIONS</b>	<b>Limited potential.</b> The emphasis on oral presentation training in most programs is geared toward professional speeches on research or concepts. Self-assessment strategies deployed to evaluate the success or weaknesses of presentations can enhance student understanding of self-development, but it is unlikely that speeches would be devoted to student exploration of personal development insights, which would likely be viewed as a narcissistic, boring, or time-wasting enterprise.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Limited potential.</b> Due to the personal nature of the objectives in this category, graphic representation would have little appeal for broad audiences. Metaphor work may provide a reasonable expression about how students experience personal development challenges.
<b>POSTERS</b>	<b>Limited potential.</b> Due to the personal nature of the objectives in this category, it is hard to imagine that a poster would have appeal for broad audiences.

<b>GOAL 9: Personal Development (continued)</b>	
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Strong potential.</b> Authentic problem-solving situations can be structured to promote student learning in self-development. Design of performance assessments need to incorporate careful rubric development to foster on-target developmental feedback related to this skill development area.
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Mixed potential.</b> Assessment designed to capture penultimate achievement can include personal development dimensions although not all formats do so with equal success.
<b>STANDARDIZED TESTS</b>	<b>Not available/recommended.</b> There is no national test of personal development skills in psychology per se. Should such an exam be developed in this area, it would provide some interesting opportunities for benchmarking how students develop metacognitively. Some aspects of this goal can be addressed by values inventories.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Not available/recommended.</b> There are no current exemplars of personal development exams developed locally.
<b>CAPSTONE EXPERIENCES</b>	<b>Strong potential.</b> Capstone courses offer an ideal venue in which students can review how their personal development has unfolded during the undergraduate education. The review of self-regulation competence should also assist in the preparation of students for job interviews or graduate school application.
<b>INTERNSHIP/ PROFESSIONAL APPLICATIONS</b>	<b>Strong potential.</b> Applied settings offer an ideal context in which to practice self-monitoring, application of criteria, strategies for self-regulation, etc. Feedback protocol will need to focus on these reflective aspects of performance to elicit appropriate measurement.
<b>PORTFOLIOS</b>	<b>Strong potential.</b> Assembled works and the processes used to produce them are the heart of the portfolio process. A reflective protocol (e.g., asking students to explain how a selected work provides evidence for a claim about personal development) facilitates student and faculty commentary on the personal development patterns exhibited by students over time.
<b>ASSESSMENT CENTER METHODS</b>	<b>Strong potential.</b> Authentic problem-solving situations can be structured to simulate the choices that students will make related to time-management (e.g., in-basket strategies) or ethical behavior (e.g., moral dilemma discussions). Feedback can be structured about personal development based on the design of the performance assessment.
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Strong potential.</b> The qualitative aspects of longitudinal studies lend themselves more readily to assessment of personal development. Some values inventories may provide assistance to track the course of personal development over time.
<b>SELF- ASSESSMENT</b>	<b>Optimal.</b> The personal nature of the goals and objectives in this category lend themselves in an ideal way to the promotion of self-assessment skills. Programs that emphasize this approach strive to build self-assessment as a development skill that begins with students making general judgments about the quality of their work and progresses to higher level demands, including creating and applying performance criteria to evaluate what students have accomplished.
<b>STUDENT JOURNALS</b>	<b>Strong potential.</b> With appropriately designed prompts, student journals can address any of the objectives in this category. Although this strategy is a good match, it is also very vulnerable to the personal biases and filters that may not make self-reports a valid interpretation. Faculty report best success when rubrics specify the criteria by which students will be effective in personal development goals.
<b>SELF-CRITIQUES</b>	<b>Strong potential.</b> Holding students accountable for judging their own performances promotes metacognitive development. Practice with self-assessment may promote habitual reflection and self-criticism. Personal biases (e.g., self-esteem issues, grandiosity) may make interpretations less reliable and valid.

<b>GOAL 9: Personal Development (continued)</b>	
<b>COLLABORATION</b>	<b>Mixed potential.</b> Personal development outcomes express individual achievement; however, group contexts can provide opportunities for development of an effective group persona. Emphasis on production or solution may obscure effective evaluation of personal achievement as a group member.
<b>RESEARCH TEAMS</b>	<b>Strong potential.</b> Participating in groups that must be sustained over time provide a particularly helpful opportunity to monitor personal development related to interaction skills. This outcome will be enhanced where students receive explicit feedback on the quality of their contributions as well as the quality of their product or solution.
<b>GROUP PROJECTS</b>	<b>Limited potential.</b> Short-term projects offer some opportunity to gain insight into interpersonal skills. However, most faculty may not feel comfortable or have access to the mechanics of the group to provide developmental feedback on group skills.
<b>ON-LINE ACTIVITIES</b>	<b>Limited potential.</b> Online interactive exchanges provide solid evidence of skills or deficits in group communication. However, faculty may feel offering uncomfortable about offering developmental feedback on this skill unless they make it an explicit feature of this learning opportunity and are prepared to invest the time that it would take to decode the online exchanges.
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Mixed potential.</b> The purpose of these strategies tends to be straightforward program evaluation as opposed to methods that can more directly influence student learning. Progress in personal development or success in its dimensions can be designed as a central feature of a specific process. Quality of results will be dependent on the design features of the survey instrument or interview protocol.
<b>SATISFACTION SURVEYS</b>	<b>Mixed potential.</b> Employers, parents, and other stakeholders in a student's education may be able to comment accurately about many aspects of personal development (e.g., ethics, time management, insightfulness); however, the demand characteristics and selection challenges may threaten the validity of the results.
<b>PERFORMANCE REVIEWS</b>	<b>Mixed potential.</b> Stakeholders may not be able to link current behaviors to personal development status without substantial training.
<b>EXIT INTERVIEWS</b>	<b>Strong potential.</b> Although the timing of the interview may encourage a positive response bias, exit interviews can be a good opportunity to incorporate student review of achievements in personal development.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Strong potential.</b> A protocol that directly addresses personal development can provide an opportunity for the interviewer to probe suspect responses from the student potentially to improve the validity of the student's responses. Personal development objectives need to be made explicit in the interview protocol to produce consistent departmental data on how they facilitate these outcomes.
<b>FOCUS GROUPS</b>	<b>Limited potential.</b> Focus groups are unlikely to address personal development concerns unless that is the express objective of the department's convening the group. The group format may be sufficiently inhibiting in relation to self-disclosure that this strategy is not recommended.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Limited potential.</b> Phone interviews designed to collect data about the personal development accomplishment of the alumni are likely to be suspect. The rationale for contacting the alumni may be difficult to address without creating a demand situation in which the alum feels some pressure to respond positively.

<b>GOAL 9: Personal Development (continued)</b>	
<b>ARCHIVAL MEASURES</b>	<b>Not recommended.</b> Archival measures would typically not allow for direct measurement of personal development objectives.
<b>TRANSCRIPT ANALYSIS</b>	<b>Limited potential.</b> A transcript analysis would only reveal student grades in courses that might be designated more for personal development. Such analyses would tell us little about the actual skills and values students would demonstrate.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Not appropriate.</b> The question of transfer patterns does not have a direct bearing on personal development.
<b>SYLLABUS AUDIT</b>	<b>Limited potential.</b> To the extent that faculty completely address the goals that they may have for student development, a syllabus audit can provide good information about the extent to which this is a highly valued outcome for the department.
<b>DEMOGRAPHIC DATA ANALYSIS</b>	<b>Not appropriate.</b> Demographics do not directly address dimensions of personal development.
<b>ALUMNI DATABASE</b>	<b>Limited potential.</b> Depending on the scope of data maintained in the database, some personal development characteristics could be gleaned but it is likely to be labor intensive and inferential under the best of circumstances.
<b>LIBRARY STATISTICS USAGE/WEB HITS</b>	<b>Limited potential.</b> Faculty could track check-out patterns for books that are devoted to personal development or web sites, but these data would be quite remote from giving direct information about student development patterns.

<p><b>GOAL 10: Career Planning and Development:</b> Pursue realistic ideas about how to implement their psychological knowledge, skills, and values in occupational pursuits in a variety of settings that meet personal goals and societal needs.</p>	
10.1	Apply knowledge of psychology (e.g., decision strategies, life span processes, psychological assessment, types of psychological careers) when formulating career choices.
10.2	Identify the types of academic experience and performance in psychology and the liberal arts that will facilitate entry into the workforce, postbaccalaureate education, or both.
10.3	Describe preferred career paths based on accurate self-assessment of abilities, achievement, motivation, and work habits.
10.4	Identify and develop skills and experiences relevant to achieving selected career goals.
10.5	Articulate how changing societal needs can influence career opportunities and foster flexibility about managing changing conditions.
10.6	Demonstrate an understanding of the importance of lifelong learning and personal flexibility to sustain personal and professional development as the nature of work evolves.
<b>COURSE DATA</b>	<b>Overall potential: Limited.</b> Departments that have Careers in Psychology course will find these methods more useful than departments that do not. Even in such courses, however, this method has limited potential because it does not typically lend itself to assessing individual student's career plans and development.
<b>OBJECTIVE TESTS</b>	<b>Limited potential.</b> Objective tests can be used to assess student's factual knowledge of career/educational options and related information, but they do not permit an in-depth assessment of individual student's post-baccalaureate plans.
<b>ESSAY TESTS</b>	<b>Mixed potential.</b> Essay tests permit personalized assessment of post-baccalaureate plans of students. Nonetheless, other methods can more effectively assess this information.
<b>EMBEDDED QUESTIONS AND ASSIGNMENTS</b>	<b>Limited potential.</b> This method can be used in Careers in Psychology courses, but other methods can more directly assess this information. This method is less practical in other courses.
<b>CLASSROOM ASSESSMENT TECHNIQUES</b>	<b>Mixed potential.</b> This method can be used in any course to assess student's understanding of career planning and development; faculty may object to using class time for this purpose.
<b>INDIVIDUAL PROJECTS/ PERFORMANCE ASSESSMENT</b>	<b>Strong potential overall.</b> These methods can be used quite effectively in Careers in Psychology, Psychology of Adjustment, some developmental psychology course, and some capstone courses. It offers a number of useful means by which to assess individual student's post-baccalaureate career planning. Uses outside these courses are limited.
<b>WRITTEN PRODUCTS</b>	<b>Strong potential.</b> Students can prepare résumés, plot out courses they need to take prior to graduation, calculate their likely and highest possible grade-point averages, conduct informational interviews, and report on selected graduate schools.
<b>ORAL PRESENTATIONS</b>	<b>Strong potential.</b> Students can give oral reports on careers relevant to psychology.
<b>GRAPHIC TESTS AND DISPLAYS</b>	<b>Limited potential.</b> Concept maps can illustrate some key features of career planning, but other methods show more promise.
<b>POSTERS</b>	<b>Strong potential.</b> Students can prepare "posters" that detail key aspects of one or more careers or graduate schools.
<b>STRUCTURAL/ SITUATIONAL ASSESSMENTS</b>	<b>Strong potential.</b> Some Career Services offices conduct mock job interviews with students; these can videotaped to facilitate feedback.



<b>GOAL 10: Career Planning and Development (continued)</b>	
<b>SUMMATIVE PERFORMANCE ASSESSMENT</b>	<b>Mixed potential overall.</b> Approaches in this category vary from "strong" to "not recommended."
<b>STANDARDIZED TESTS</b>	<b>Not recommended.</b> No national instrument to address career knowledge and planning exists.
<b>LOCALLY DEVELOPED TESTS</b>	<b>Not recommended.</b> It is unlikely a department would devote time to this kind of assessment project.
<b>CAPSTONE EXPERIENCES</b>	<b>Mixed potential.</b> Some capstone courses might include a project wherein students research and write about their career goals and/or graduate school plans.
<b>INTERNSHIP/ PROFESSIONAL APPLICATIONS</b>	<b>Strong potential.</b> These experiences can help students clarify their career goals and develop knowledge, skills, and values that will facilitate their entry into the workforce.
<b>PORTFOLIOS</b>	<b>Limited potential.</b> One objective of the construction of portfolios is for assistance in career planning but it is unlikely that a portfolio would be devoted solely to career pursuits.
<b>ASSESSMENT CENTER METHODS</b>	<b>Strong potential.</b> In-basket simulations can mirror closely the kinds of skills students might need to demonstrate in different career paths. As such, these methods can provide important data to students and their programs.
<b>CASE AND LONGITUDINAL STUDIES</b>	<b>Mixed potential.</b> Following the career goals and paths of graduates may provide a rich source of data but changing historical contexts may limit the value of investing faculty time in this type of assessment.
<b>SELF-ASSESSMENT</b>	<b>Strong potential overall.</b> These methods can be used effectively in Careers in Psychology, Psychology of Adjustment, some developmental psychology courses, and some capstone courses. They allow for in-depth assessment of individual student's post-baccalaureate career plans.
<b>STUDENT JOURNALS</b>	<b>Strong potential.</b> Students can reflect on their career and educational goals, ascertain what additional information they need, obtain this information, incorporate it into their planning, refine their goals, and report their progress over the term.
<b>SELF-CRITIQUES</b>	<b>Strong potential.</b> Although self-critiques may lack objectivity, systematic use of this practice can enhance student's ability to develop insight into the quality of their own performances.
<b>COLLABORATION</b>	<b>Limited potential overall.</b> Because students must develop their own goals, group projects are not particularly helpful.
<b>RESEARCH TEAMS</b>	<b>Limited potential.</b> Research teams can convene to develop expertise on career research but such activities will be limited to correlational and survey methods.
<b>GROUP PROJECTS</b>	<b>Good potential.</b> Student groups can complete projects related to career goals to enhance their understanding and promote their own career planning.
<b>ON-LINE ACTIVITIES</b>	<b>Limited potential.</b> Monitoring web-based activities to assess career awareness seems misdirected.



<b>GOAL 10: Career Planning and Development (continued)</b>	
<b>INTERVIEWS &amp; SURVEYS</b>	<b>Strong potential overall.</b> These methods can be used in Careers in Psychology, Psychology of Adjustment, some developmental psychology courses, and some capstone courses. These methods can also be used to gather data in other classes or in non-classroom settings, but faculty may object to using class time for this purpose.
<b>SATISFACTION SURVEYS</b>	<b>Strong potential.</b> There is a problem of where to administer surveys if not given in career-relevant courses.
<b>PERFORMANCE REVIEWS</b>	<b>Not recommended.</b> Asking employers to comment on student's career preparation may seem invasive.
<b>EXIT INTERVIEWS</b>	<b>Strong potential.</b> These can be used to assess student's post-baccalaureate plans and their views of departmental resources for and support of career planning and development. These can be time-consuming.
<b>EXTERNAL EXAMINER INTERVIEWS</b>	<b>Limited potential.</b> Other methods are more effective. External examiner time is usually invested in verifying other skills.
<b>FOCUS GROUPS</b>	<b>Limited potential.</b> Focus groups represent a relatively inefficient way to gather information about student's views of departmental resources for and support of career planning and development; some concerns about student's objectivity in a group setting.
<b>FOLLOW-UP ALUMNI INTERVIEWS</b>	<b>Strong potential.</b> Although time-consuming, this method can provide useful information regarding the department's effectiveness in preparing students for entry-level careers or graduate study.
<b>ARCHIVAL MEASURES</b>	<b>Limited potential overall.</b> Options in this category range from inappropriate to highly desirable.
<b>TRANSCRIPT ANALYSIS</b>	<b>Not recommended.</b> It is unlikely that this information would be helpful in assessing student's career goals and development.
<b>ANALYSIS OF TRANSFER PATTERNS</b>	<b>Not recommended.</b> Career concerns cannot be interpreted from transfer patterns.
<b>SYLLABUS AUDIT</b>	<b>Limited potential.</b> Departments might benefit from examining whether there are specific career-related goals present in the curriculum, especially in advanced coursework.
<b>DEMOGRAPHIC DATA ANALYSIS</b>	<b>Not recommended.</b> There is no direct value from this kind of analysis.
<b>ALUMNI DATABASE</b>	<b>Strong potential.</b> Tracking students regarding employment and graduate degrees can provide useful (aggregated) data regarding the variety and level of jobs that majors typically obtain and the proportion of majors who attend graduate/professional school. These data can be tracked over time in relation to career-relevant changes in the curriculum, development of new advising resources, etc.
<b>LIBRARY USE/WEB HITS STATISTICS</b>	<b>Not recommended.</b> A checked-out library book or evidence of a web hit does not guarantee that the content has been examined or has created any influence.

**B. Designing Viable Assessment Plans****6. Avoiding Assessment Pitfalls**

Assessment planning is a complicated process. Learn how to avoid some common problems that beset departments by reading this entry.

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### What Are the Most Common Problems in Assessment Planning?

- **Selecting inappropriate assessment methods.** Assessment activities are too time- and labor-intensive to be squandered from poorly designed plans. Faculty must scrutinize assessment proposals carefully from the standpoint of how well the results will provide evidence consistent with the department's mission and goals.
- **Selecting only one or two assessment measures.** Relying on just one or two measures is bound to produce an incomplete picture of what students are accomplishing. Departments should consider the array of possibilities and then select the strategies that will capture their achievements and distinctiveness.
- **Limiting assessment strategies to productivity, viability measures.** Some departments may opt to limit their strategies merely to archival data to reduce the intrusion of assessment in faculty lives. Graduation rates, enrollment figures, and faculty productivity measures simply will not contribute to the development of a vigorous culture of evidence.
- **Failing to interpret assessment data adequately.** A common error involves departments' presenting assessment data as if the data stand on their own merit. In nearly all cases, appropriate context must be established if the department is to take full advantage of what they have achieved. Setting context provides for a more complete explanation of situational factors that should be considered in interpreting the results of assessment.
- **Failing to use assessment results to implement change.** The primary purpose of assessment is promote continuous improvement. Well designed assessment strategies produce results that hold the key to strengthening the department. The department needs to commit to a careful review of the implications of what the data suggest about program improvement.
- **Failing to exploit positive results.** Some departments file the results of their assessment activities upon completion. The faculty may expect that administrators and other stakeholders will be advocates for the department based on the department's reputation. Positive assessment results provide a great opportunity for the department to remind stakeholders of their quality.
- **Misusing assessment data .** Assessment should emphasize the improvement of student learning. Data generated from the assessment of student learning should *not* be used for individual faculty evaluation. Administrators need to distinguish appropriate productivity/viability measures for faculty from those that distinguish student learning. Faculty need to be vigorous in protesting misappropriated data.
- **Emphasizing compliance with the process more than the results .** Some departments demonstrate greater enthusiasm for enacting the assessment strategy as a means of giving evidence to the vigor their campus allegiance. One consequence may be paying less attention to the actual results of the assessment. In the best case, they will lose the opportunity to tout their achievements. In the worst case, they may neglect important feedback that should prompt change. Department members should evaluate the results purposefully from the standpoint of what directions the data suggest for improvement.
- **Getting swept away by winning the assessment "game."** The assessment challenge sometimes appeals to departments as a way of generating proof of their superiority on campus. Not only will such a competitive stance misdirect faculty energies, it will potentially alienate campus partners. Department members must concentrate on collecting data that will help them with the collective goal of improving the curriculum and the quality of student experience.
- **Making inappropriate comparisons within or across institutions.** Some assessment strategies lend themselves to comparisons that may not be appropriate. For example, the use of standardized commercial tests offer performance norms that do not take into account the actual course preparation students will have had prior to the testing. Alternatively, departments may not emphasize in their own curriculum requirements some dimensions of the test. Comparisons of assessment results may mask significant differences in program philosophy, mission, and curriculum.
- **Adopting a defensive posture.** Faculty can adopt multiple rationales for resisting involvement in assessment and express their resistance from hostility through apathy. Assessment can be viewed as a threat to successful programs (status quo). Assessment activities that increase in relation to accreditation demands can be seen as an externally mandated, periodic bother. Assessment may be seen as "add on" work of little importance. Assessment may also be the vehicle that leads to funding reallocation or program discontinuation.

**C. Applying Strategies**

**1. Articles that Illustrate Assessment Strategies**

We identify articles from *Teaching of Psychology*, and other sources that illustrate how psychology departments have conducted assessments for one or more of the Learning Goals.

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 This section of the Assessment CyberGuide provides references and (where available) abstracts of research articles, mostly from *Teaching of Psychology*, that include measures of each of the learning goals identified in the *APA Guideline for the Undergraduate Psychology Major* (2002). We categorized each study based on the goals measured and the types of assessment used in the study. For each reference, we also provide a link to a Web site where the full article or book is available for purchase or viewing (if you have online access to the journal).

**Goal 1: Knowledge Base of Psychology:** Students will demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.

1 Knowledge Base			Summative performance				
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Brito, C. F., Sharma, A., & Bernas, R. S. (2004). Assessing student learning using a local comprehensive exam: Insights from Eastern Illinois University. In D. S. Dunn, C. M. Mehrotra, & J. S. Halonen (Eds.), *Measuring up: Educational assessment challenges and practices for psychology* (pp. 209-224). Washington, DC: American Psychological Association. Retrieved from <http://books.apa.org/books.cfm?id=4318011>

1 Knowledge Base	Course data						
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Jacobs-Lawson, J. M., & Hershey, D. A. (2002). Concept maps as an assessment tool in psychology courses. *Teaching of Psychology*, 29, 25-29. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785859218>

Abstract: A concept map is a graphic, hierarchically arranged knowledge representation that reflects the content of an individual's semantic long-term memory. In this article we describe the basic mapping technique, a number of variations on the technique, how faculty members can use concept maps as an adjunct to traditional assessment techniques in psychology courses, and as a means of evaluating students' maps both quantitatively and qualitatively. Based on the results of a comparison between students' concepts maps completed at the beginning and the end of semester, we conclude that the technique is effective at evaluating students' knowledge.

1 Knowledge Base						Interviews and Surveys	
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Kowalski, P., & Taylor, A. K. (2009). The effect of refuting misconceptions in the Introductory psychology class. *Teaching of Psychology*, 36, 153-159. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a912647171>

Abstract: Students often come into the introductory psychology course with many misconceptions and leave with most of them intact. Borrowing from other disciplines, we set out to determine whether refutational lecture and text are effective in dispelling student misconceptions. These approaches first activate a misconception and then immediately counter it with correct information. We tested students' knowledge of 45 common misconceptions and then taught the course with lecture and readings of a refutational or standard format or did not cover the information at all. Students showed significant changes in their beliefs when we used refutational approaches, suggesting refutational pedagogies are best for changing students' misconceptions.

1 Knowledge Base 7 Communication Skills	Course data					Interviews and Surveys	
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Lundy, B. L. (2007). Service learning in life-span developmental psychology: Higher exam scores and increased empathy. *Teaching of Psychology, 34*, 23-27. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a788039135>

Abstract: This article describes research conducted to evaluate the impact of service learning on exam scores and emotional empathy in a life-span development course. Service learning was 1 of 3 project options offered in the course; others included an interview project and a research paper. With the exception of the first exam, scores were significantly higher for the service learning students compared to those who completed other projects. In addition, only the service-learning group demonstrated a significant increase in emotional empathy as measured by the Emotional Empathetic Tendency Scale (EETS; Mehrabian & Epstein, 1972). I discuss the results in terms of the relations among practical experience, reflection, and emotional empathy.

1 Knowledge Base 10 Career Planning	Course data					Interviews and Surveys	
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Maynard, A. M., Maynard, D. C., & Rowe, K. A. (2004). Exposure to the fields of psychology: Evaluation of an introductory psychology project. *Teaching of Psychology, 31*, 37-40. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785834135>

Abstract: We evaluated a project designed to expose introductory psychology students to the fields of psychology. We created this project to foster student learning about the various fields of psychology, careers that psychologists have, the psychology program on their campus, and courses available at their home institution. Evaluative data included knowledge of the definitions of the fields, measured at 3 time points, as well as students' self-reported reactions. Results indicated that students found the project interesting and would recommend it for future classes. More important, knowledge tests revealed significant increases in knowledge that persisted over a 4-week period.

1 Knowledge Base							Archival measures
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Meeker, F., Fox, D., & Whitley, Jr., B. E. (1994). Predictors of academic success in the undergraduate psychology major. *Teaching of Psychology, 21*, 238-241. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785857043>

Abstract: Transcript data were compiled on 288 recent college graduates majoring in psychology to determine the variables that correlated best with grade point average in psychology (PSYGPA). The graduates were a highly diverse group in terms of high school academic backgrounds, grades in high school, and Scholastic Aptitude Test scores. Factor analysis of 26 predictor variables revealed three clusters of variables: high school grades/verbal, general studies, and mathematics. Multiple regression analyses revealed PSYGPA to be predicted by the grade in Introductory Psychology, general studies coursework, and mathematics factors, which together accounted for 67% of the variance. The prediction equation differed somewhat from that obtained for students at another university; consequently, prediction equations used to screen majors should be based only on students at a particular institution.

1 Knowledge Base			Summative performance			Interviews and Surveys	
2 Research Methods							

Scepansky, J., & Carkenord, D. M. (2004). Senior year retention of methods and statistics concepts. *Teaching of Psychology, 31*, 9-12. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785834129>

Abstract: This article describes an empirical investigation of whether performance on a senior-level assessment of methodological and statistical knowledge related to elapsed time since students took prerequisite methods and statistics courses. In a senior-capstone course, 50 students completed a 50-item multiple-choice assessment measuring their knowledge of methods and statistics. We also measured elapsed time (number of months) since students completed Research Methods and Quantitative Methods (statistics). Results revealed that performance on the assessment showed no significant correlation with elapsed time from the Research Methods course or with elapsed time from the Quantitative Methods course. On a self-report survey, however, student reported they believed the elapsed time negatively affected their performance.

1 Knowledge Base			Summative performance				Archival measures
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Stoloff, M., L., & Feeney, L, J. The Major Field Test as an assessment tool for an undergraduate psychology program. *Teaching of Psychology, 29*, 92-98. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785861538>

Abstract: Senior psychology majors completed the Major Field Test in Psychology (MFT) produced by the Educational Testing Service as a component of program assessment at James Madison University. We related MFT performance to student characteristics including academic success indicators and specific psychology courses completed. MFT performance strongly correlated with other measures of academic success such as Scholastic Assessment Test scores and grade point average. There was a weak but significant positive correlation between number of psychology courses completed and MFT score. Only 4 content courses appeared to improve MFT subtest scores: Abnormal Psychology, Social Psychology, Biopsychology, and Counseling Psychology. We discuss the use and interpretation of MFT scores for program assessment and the implications of these findings for curriculum design, academic advising, and preparation of students for the Graduate Record Examination Advanced Psychology Test.

**Goal 2: Research Methods in Psychology:** Students will understand and apply basic research methods in psychology, including research design, data analysis, and interpretation.

2 Research Methods	Course data					Interviews and Surveys	
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Burkley, E., & Burkley, E. (2009). *Mythbusters: A tool for teaching research methods in psychology. Teaching of Psychology, 36*, 179-184. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a912648402>

Abstract: *Mythbusters* uses multiple research methods to test interesting topics, offering research methods students an entertaining review of course material. To test the effectiveness of *Mythbusters* clips in a psychology research methods course, we systematically selected and showed 4 clips. Students answered questions about the clips, offered their opinions of them, and ultimately responded to *Mythbusters*-related exam items. Students indicated that the clips helped them understand course concepts, helped them apply their knowledge to real-world research studies, and provided them with an enjoyable educational experience. More important, students performed better on *Mythbusters*-related exam items than on control items, suggesting the clips were effective pedagogical tools for psychology research methods courses. We discuss specific *Mythbusters* clips that are relevant to psychological concepts.

2 Research Methods				Self-assessment		Interviews and Surveys	
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Friedrich, J. (1996). Assessing student's perceptions of psychology as a science: Validation of a self-report measure. *Teaching of Psychology, 23*, 6-13. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785834219>

Abstract: Training in psychology emphasizes the scientific method as the basis for knowledge claims about thought and behavior. Students are regularly evaluated in terms of their mastery of methodological and statistical principles, but little attention has been paid to assessing the degree to which students endorse the notion that psychology is, indeed, a science. Several studies are reported that validate a self-report measure of this construct. The Psychology as Science Scale is shown to be a reliable measure that predicts a range of construct-relevant attitudinal and performance criteria. Possible research uses of the measure, as well as broader issues surrounding the general public's epistemological assumptions concerning psychology, are discussed.

2 Research Methods							Archival measures
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Lauer, J. B., Rajecki, D. W., & Minke, K. A. (2006). Statistics and methodology courses: Interdepartmental variability in undergraduate majors' first enrollments. *Teaching of Psychology, 33*, 24-30. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785861648>

Abstract: Transcripts of 784 psychology alumni from 4 universities revealed that students' timing of first enrollments in a statistics or methodology course was the result of an interaction between personal preferences and differences in program requirements. Where only a single methodological course was mandatory, first enrollments were especially late in students' careers. In departments having multiple methodological requirements, negative correlations between the timing of first method course versus first content course (e.g., clinical, developmental) indicated that the precedence of 1 category meant a delay for the other. We offer recommendations for increasing students' direct early exposure to scientific methodology in psychology.



1 Knowledge Base			Summative performance			Interviews and Surveys	
2 Research Methods							

Scepansky, J., & Carkenord, D. M. (2004). Senior year retention of methods and statistics concepts. *Teaching of Psychology, 31*, 9-12. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785834129>

Abstract: This article describes an empirical investigation of whether performance on a senior-level assessment of methodological and statistical knowledge related to elapsed time since students took prerequisite methods and statistics courses. In a senior-capstone course, 50 students completed a 50-item multiple-choice assessment measuring their knowledge of methods and statistics. We also measured elapsed time (number of months) since students completed Research Methods and Quantitative Methods (statistics). Results revealed that performance on the assessment showed no significant correlation with elapsed time from the Research Methods course or with elapsed time from the Quantitative Methods course. On a self-report survey, however, student reported they believed the elapsed time negatively affected their performance.

2 Research Methods						Interviews and Surveys	
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Sizemore, O. J., & Lewandowski, G. W., Jr. (2009). Learning might not equal liking: Research methods course changes knowledge but not attitudes. *Teaching of Psychology, 36*, 90-95. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a909503910>

Abstract: Students completed surveys at the beginning and end of a sophomore-level course on research and statistics. We hypothesized that the course would produce advances in knowledge of research and statistics and that those changes would be accompanied by more favorable attitudes toward the subject matter. Results showed that knowledge did increase significantly, but 4 of 6 attitude measures showed no change. Two attitude measures (perceived utility of research and statistics) showed significant declines. These results demonstrate the independence of knowledge and attitudes and show that attitudinal change is not monolithic. We argue that students' misconceptions about research might underlie the declines in perceived utility of research and statistics.

2 Research Methods	Course data					Interviews and Surveys	
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Thieman, T. J., Clary, E. G., Olson, A. M., Dauner, R. C., & Ring, E. E. (2009). Introducing students to Psychological research: General psychology as a laboratory course. *Teaching of Psychology, 36*, 160-168. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a912648626>

Abstract: For 6 years, we have offered an integrated weekly laboratory focusing on research methods as part of our general psychology course. Through self-report measures and controlled comparisons, we found that laboratory projects significantly increase students' knowledge and comfort level with scientific approaches and concepts, sustain interest in psychology, and increase critical thinking about psychological research. Implementing a laboratory component in the introductory course increases students' scientific literacy, reinforces psychology's claim to scientific status, encourages active learning, promotes quantitative reasoning, and benefits multiple constituencies.



2 Research Methods							Archival measures
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Tomcho, T., Rice, D., Foels, R., Folmsbee, L., Vladescu, J., Lissman, R., Matulewicz, R., & Bopp, K. (2009). APA's learning objectives for research methods and statistics in practice: A multimethod analysis. *Teaching of Psychology, 36*, 84-89. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a909502535>

Abstract: Research methods and statistics courses constitute a core undergraduate psychology requirement. We analyzed course syllabi and faculty self-reported coverage of both research methods and statistics course learning objectives to assess the concordance with APA's learning objectives (American Psychological Association, 2007). We obtained a sample of 64 research methods and 56 statistics syllabi (return rates: 16%, 14%) from 400 randomly selected psychology departments in colleges and universities in the United States. Course syllabi generally contained appropriate research methods and statistics content. However, certain APA learning objectives consistently were absent from course syllabi, and we found discrepancies between listed objectives and faculty self-reports of topics covered.

2 Research Methods						Interviews and Surveys	Archival measures
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Wayment, H. A., & Dickson, K. L. (2008). Increasing student participation in undergraduate research benefits students, faculty, and department. *Teaching of Psychology, 35*, 194-197. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a795059220>

Abstract: Little information is available about how departments might improve undergraduate students' access to research experience. At a midsized psychology department (550 majors, 21 full-time faculty), we identified 5 barriers in our existing program (lack of student awareness, unequal student access, poor curricular timing, lack of publicity, and uneven access/incentives for faculty) and implemented 5 changes (application procedures, advertisement, assessment and communication with majors, establishment of a departmental newsletter, and restructured faculty teaching assignments). Following implementation, the number of involved students increased from 40 (11-year average) to 87 (Year 1) and to 117 (Year 2) and number of involved faculty increased from 60% to 94%. Our findings suggest that implementing systematic and programmatic changes may help to increase undergraduate involvement in research.

**Goal 3: Critical Thinking Skills in Psychology:** Students will respect and use critical and creative thinking, skeptical inquiry, and, when possible, the scientific approach to solve problems related to behavior and mental processes.

3 Critical Thinking	Course data						
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Hall, S. S. & Seery, B. L. (2006). Behind the facts: Helping students evaluate media reports of psychological research. *Teaching of Psychology*, 33, 101-104. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785862670>

Abstract: This article describes an activity that can help students (a) understand how the research process influences the outcomes of that research and (b) appreciate the media's limitations of reporting research findings. Students read about research reported in an online newspaper and in a scholarly journal and responded to questions that guided their critique of the research methods and their comparison of the 2 sources. Quantitative and qualitative evaluations suggested that this activity can help students understand the impact of research procedures on a study's findings and to appreciate the limitations in the reporting of such findings from mainstream media sources.

3 Critical Thinking			Summative performance				
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Lawson, T. J. (1999). Assessing psychological critical thinking as a learning outcome for psychology majors. *Teaching of Psychology*, 26, 207-209. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785863557>

Abstract: Psychological critical thinking involves evaluating claims using the basic principles of psychological science. Because it is such an important skill, psychological critical thinking should be evaluated as part of an overall outcomes assessment for psychology majors. I describe the procedure my institution uses for assessing psychological critical thinking, and I provide evidence that senior psychology majors score higher on our critical thinking test than do either introductory psychology students or seniors majoring in chemistry or biology.

3 Critical Thinking	Course data		Summative performance				
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Penningroth, S L., Despain, L. H., & Gray, M. J. (2007). A course designed to improve psychological critical thinking. *Teaching of Psychology*, 34, 153-157. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a788034823>

Abstract: We developed a 1-credit freshman-level course designed to enhance psychological critical thinking. We based the new curriculum on Stanovich's (2004) text, with an emphasis on active learning and critically evaluating claims by applying scientific concepts. To assess the effectiveness of this course, we used a pretest—posttest design with a quasi-experimental control group. At posttest, students in the psychological science course showed greater improvement on psychological critical thinking than students in a comparison group. Therefore, we recommend the techniques used in this instructional intervention to help college students improve their critical thinking skills.

3 Critical Thinking						Interviews and Surveys	
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Holmes, J. D., Beins, B. C. (2009). Psychology Is a science: at least some students think so. *Teaching of Psychology, 36*, 5-11. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a907768203>

Abstract: The American Psychological Association's (2007) curricular guidelines recommend that students develop both an understanding of how psychologists do research and an appreciation for why scientific thinking is necessary. We surveyed a large sample of psychology majors on specific interests, as well as individual difference variables relevant to scientific thinking. Our results suggest that over time, students' knowledge of scientific thinking increased, whereas their tendency to see psychology as a science did not. Further, students reported greater interest in practitioner activities than scientific ones, and these divergent interests were associated with differential ways of thinking and of viewing the field of psychology. We discuss some implications for conceptualizing undergraduate instruction given that some student characteristics are more malleable than others.

3 Critical Thinking	Course data					Interviews and Surveys	
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Williams, R. L., Oliver, R., Allin, J. L., Winn, B., & Booher, C. S. (2003). Psychological critical thinking as a course predictor and outcome variable. *Teaching of Psychology, 30*, 220-223. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785856629>

Abstract: Students' scores on a psychological critical thinking instrument administered at the beginning and end of a large human development course significantly correlated with multiple-choice exam scores, with the posttest critical thinking scores being the better predictor of exam performance. The sample as a whole gained significantly on critical thinking, but students with high and low exam scores differed in their patterns of change on critical thinking. Students who scored high (As and B+s) on the exams significantly improved their critical thinking scores, whereas students who scored low (Ds and Fs) on the exams did not. An explicit practice and feedback procedure implemented through an existing course activity presumably contributed to gains in critical thinking.

**Goal 4: Application of Psychology:** Students will understand and apply psychological principles to personal, social, and organizational issues.

4 Application		Individual projects				Interviews and Surveys	
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Greene, E. (2008). An advocacy exercise for a psychology and law course. *Teaching of Psychology*, 35, 210-213. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a795059145>

Abstract: This article describes an active learning component of an advanced course in psychology and law. The assignment is to present, in the context of a mock appellate court, the best available psychological data in support of one party in a legal case. Students choose one side of a hypothetical case, locate and review the relevant scientific literature, prepare written analyses and arguments, and present those analyses to a panel of student-justices who question them about the nature of their evidence and the validity of their conclusions. Postcourse assessments showed that the exercise enhanced students' conceptual knowledge of psychology and law as well as their ability to organize and synthesize empirical data, form an argument on the basis of data, and present that argument to the public.

4 Application				Self-assessment		Interviews and Surveys	
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Kogan, L. R., & Kellaway, J. A. (2004). Applied animal behavior course: A service-learning collaboration with the Humane Society. *Teaching of Psychology*, 31, 202-204. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785857676>

Abstract: Service-learning programs apply classroom principles to real-world situations and help communities by providing an often untapped resource of volunteers. This article describes how we applied the service-learning teaching approach to an undergraduate psychology animal behavior class in conjunction with a local humane society. Undergraduate psychology students learned operant conditioning techniques and applied this knowledge to 52 dogs housed at a local humane society. Students viewed the course as a positive experience and believed it offered them the opportunity to practice classroom knowledge in an applied setting. The article describes the course and the effects of this service-learning program on the community.

4 Application						Interviews and Surveys	
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Kowalski, R. M. & Lakey, C. E. (2004). Teaching application and personal relevance through writing in courses on gender. *Teaching of Psychology*, 31, 279-281. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785857501>

Abstract: Bloom (1956) included "application" in his taxonomy of educational objectives. Consistent with this goal, this study examined the effectiveness of 2 writing exercises in a gender class, keeping a journal and completing a cross-gender question exercise, in increasing students' awareness of both the personal relevance and the applicability of course material outside the classroom. Students found the exercises to be effective both personally and pedagogically. Students perceived the journal and the questions as effective means of gaining insight into societal issues confronting men and women and into the other sex.

1 Knowledge Base 4 Application 10 Career Planning	Course data					Interviews and Surveys	
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Maynard, A. M., Maynard, D. C., & Rowe, K. A. (2004). Exposure to the fields of psychology: Evaluation of an introductory psychology project. *Teaching of Psychology*, 31, 36-39. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785834135>

Abstract: We evaluated a project designed to expose introductory psychology students to the fields of psychology. We created this project to foster student learning about the various fields of psychology, careers that psychologists have, the psychology program on their campus, and courses available at their home institution. Evaluative data included knowledge of the definitions of the fields, measured at 3 time points, as well as students' self-reported reactions. Results indicated that students found the project interesting and would recommend it for future classes. More important, knowledge tests revealed significant increases in knowledge that persisted over a 4-week period.

4 Application						Interviews and Surveys	
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Sheldon, J. P. (2004). Using Radio Diaries to teach developmental psychology concepts. *Teaching of Psychology*, 31, 46-48. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785834120>

Abstract: Applying psychological theories and concepts to case studies is an effective way for students to learn and understand course material. For an adolescent development course students accessed National Public Radio's Teenage Diaries Web site and chose 1 diary to analyze. They applied psychoanalytic, learning, cognitive, ecological, and sociobiological theories to the teenager's diary. Students liked the assignment and rated it helpful for understanding and applying psychological theories.

4 Application			Summative performance			Interviews and Surveys	
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Weis, R. (2004). Using an undergraduate human-service practicum to promote unified psychology. *Teaching of Psychology*, 31, 43-46. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785834120>

Abstract: This article describes an undergraduate capstone course with practicum designed to integrate students' previous knowledge of psychology, research methods, and statistics and to apply this knowledge to the benefit of others. Specifically, students administered a 10-week reading intervention and behavior modification program to children with Reading Disorder. Students conducted assessments before and after intervention and statistically evaluated the effectiveness of their work. Students addressed ethical issues and collaborated with other professionals. Outcome data suggested the course was beneficial from pedagogical and service-oriented perspectives.

**Goal 5: Values in Psychology:** Students will be able to weigh evidence, tolerate ambiguity, act ethically, and reflect other values that are the underpinnings of psychology as a discipline.

5 Values	Course data					Interviews and Surveys	
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Fisher, C. B., & Kuther, T. L. (1997). Integrating research ethics into the introductory psychology course curriculum. *Teaching of Psychology, 24*, 172-175. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785859805>

Abstract: Faculty at 2 universities integrated 6 case studies on research ethics into their introductory psychology curricula. Students who received the ethics modules were better able to identify ethical issues and consider moral ambiguities than students who received standard instruction. Students and faculty favorably evaluated the curriculum, and students indicated that the ethics instruction increased their interest in research psychology and scientific ethics.

5 Values						Interviews and Surveys	
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Standing, L. G., & Huber, H. (2003). Do psychology courses reduce beliefs in psychological myths? *Social Behavior & Personality: An International Journal, 31*, 585-592. Retrieved from <http://www.sbp-journal.com/default.aspx?pageid=46&JournalArticleID=1360>

Abstract: This study examined the degree to which psychology students accept popular psychology myths that are rejected by mainstream researchers (e.g., "people use only 10% of their brain's capacity"), and the effect of psychology courses on myth acceptance. Using a twenty-item, true-false myth belief questionnaire, it examined the levels of gullibility among 94 undergraduates at different stages of their education, and related these to their educational and demographic backgrounds. High overall levels of myth acceptance (71%) were found, in line with earlier research. Myth acceptance decreased with the number of psychology courses that students had taken in university, but increased with the number that they had taken in junior college. Belief in myths was lower among students who were majoring in psychology, were older, had higher grades, and had advanced training in research methods, but it was not related to gender, geographical origin, or university year. It is concluded that university courses appear beneficial in encouraging methodological skepticism, whereas taking specialized psychology courses in junior college may hinder rather than promote critical thinking among undergraduates.

5 Values						Interviews and Surveys	
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Strohmetz, D. B. (1992). The use of role-play in teaching research ethics: A validation study. *Teaching of Psychology, 19*, 106-108. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785863481>

Abstract: Rosnow's (1990) role-play exercise for teaching research ethics was used in undergraduate research methods courses, and its effectiveness was evaluated. Results indicate that the exercise can be a valuable tool for sensitizing students to the factors involved in judging the ethics of research.

**Goal 6: Information and Technological Literacy:** Students will demonstrate information competence and the ability to use computers and other technology for many purposes.

6 Info/Tech Literacy	Course data					Interviews and Surveys	
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Connor-Greene, P. A. & Greene, D. J. (2002). Science or snake oil? Teaching critical evaluation of 'research' reports on the Internet. *Teaching of Psychology, 29*, 321-324. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785863895>

Abstract: The proliferation of information on the Internet introduces new challenges for educators. Although the Internet can provide quick and easy access to a wealth of information, it has virtually no quality control. Consequently, the Internet has rendered faculty more essential than ever as teachers of the analytic and evaluative skills students need to become educated consumers of information. In this article we describe an exercise using small-group discussion and individual problem-based learning to teach critical thinking about the Internet. Data from the exercise and from student evaluations support both its need and students' perceptions of its effectiveness.

6 Info/Tech Literacy	Course data					Interviews and Surveys	
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Landau, J. D., Druen, P. B., & Arcuri, J. A. (2002). Methods for helping students avoid plagiarism. *Teaching of Psychology, 29*, 112-115. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785861543>

Abstract: Evidence has suggested that some forms of plagiarism might result from students' inadequate knowledge of proper citation techniques (Roig, 1997). We taught students about plagiarism identification and proper paraphrasing skills. Undergraduates who received no treatment, feedback, plagiarism examples, or a combination of feedback and examples completed 2 versions of a plagiarism knowledge survey, paraphrased a literary passage, and rated their knowledge of plagiarism. Participants in all conditions except the control condition were better able to identify plagiarism. In the paraphrasing exercise, the example conditions showed a reduction in plagiarism. Thus, we identify an exercise that can help students identify and avoid plagiarism.

6 Info/Tech Literacy	Course data					Interviews and Surveys	
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Leshowitz, B, DiCerbo, K. E., & Okun, M. A. (2002). Effects of instruction in methodological reasoning on information evaluation. *Teaching of Psychology, 29*, 5-10. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785859214>

Abstract: In this article we describe an instructional program that focuses on applying causal reasoning and related principles of the scientific method to problems faced in daily life. In a highly interactive classroom setting, the instructor gives students repeated opportunities to apply methodological reasoning to real-world scenarios for the purpose of making informed decisions. In addition to describing the program, we report the findings of a capstone exercise that examined changes in students' beliefs toward legalization of marijuana after reading persuasive communications. Students who experienced the instructional program exhibited less bias in evaluating information and less attitude polarization than students in a comparison group. We discuss the implications of these findings for developing and evaluating instructional programs in methodological reasoning in psychology.



6 Info/Tech Literacy		Individual projects				Interviews and Surveys	
7 Communication Skills							

Schuetze, P. (2004). Evaluation of a brief homework assignment designed to reduce citation problems. *Teaching of Psychology, 31*, 257-259. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785857499>

Abstract: I evaluated a brief homework assignment designed to reduce citation problems in research-based term papers. Students in 2 developmental psychology classes received a brief presentation and handout defining plagiarism with tips on how to cite sources to avoid plagiarizing. In addition, students in 1 class completed 2 brief homework assignments in which they had to identify information in 1 page of text that required a citation. Results found that students who completed the homework assignments had fewer problems with citations, believed that they had a better understanding of situations that comprised plagiarism, and had more confidence in their ability to avoid plagiarism.

### Additional Resources

Education and Behavioral Sciences Section Psychology Committee Task Force on Information Literacy Standards. (n.d.). *Information literarcy standards for psychology students*. Current draft retrieved from [http://connect.ala.org/files/29837/info\\_lit\\_psych\\_pdf\\_4a60828636.pdf](http://connect.ala.org/files/29837/info_lit_psych_pdf_4a60828636.pdf)

Upon final approval, these standards will appear at <http://www.ala.org/ala/mgrps/divs/acrl/standards/>

**Goal 7: Communication Skills:** Students will be able to communicate effectively in a variety of formats.

**Oral communication skills**

7 Communication Skills						Interviews and Surveys	
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Burchfield, C. M., & Sappington, J. (1999). Participation in classroom discussion. *Teaching of Psychology*, 26, 290-291. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785863015>

Abstract: Students ranked themselves and peers on perceived class participation (i.e., unsolicited questions and comments during class). The instructor also ranked students. Results suggested that students ranked themselves higher, on average, than did their peers and instructor. Students' self-rankings did not correlate well with either peer or instructor ranks, although the latter 2 agreed substantially. We recommend using multiple measures of student participation and self-monitoring in classroom discussions.

7 Communication Skills						Interviews and Surveys	
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Muir, G. M., & van der Linden, G. J. (2009). Students teaching students: An experiential learning opportunity for large introductory psychology classes in collaboration with local elementary schools. *Teaching of Psychology*, 36, 169-173. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a912649130>

Abstract: Students in large, lecture-based introductory psychology classes often do not have the benefit of experiential learning (EL) opportunities due to logistical constraints. To overcome this obstacle, we developed an EL project in which introductory psychology students in small groups present some aspect of the course material to local elementary school classes. The project challenges undergraduate students to demonstrate a deep level of understanding of the presentation material. Such depth of understanding enables them to flexibly communicate material in an age-appropriate manner to kindergarten through 5th-grade students. Feedback results from undergraduate students, elementary school students, and teachers demonstrated that this project supported learning outcomes in undergraduates in a positive and enjoyable way for both student groups.

7 Communication Skills				Self-assessment			
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Zaremba, S. B., & Dunn, D. S. (2004) Assessing class participation through self-evaluation: Method and measure. *Teaching of Psychology*, 31, 191-193. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785857676>

Abstract: We describe a method for assessing class participation by having students evaluate their daily verbal and nonverbal contributions and completion of reading assignments. Easy to reproduce and use for record keeping, the measure allows students and faculty to understand each other's perspective on the quality of the student's participation. Students reported that the measure encouraged regular class attendance, active verbal and nonverbal participation, and completion of reading assignments.

### Interpersonal communication/Collaborative skills

7 Communication Skills					Collaboration	Interviews and Surveys	
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Cathey, C. (2007). Power of peer review: An online collaborative learning assignment in social psychology. *Teaching of Psychology, 34*, 97-99. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a788015147>

Abstract: In a semester-long, peer review assignment, undergraduates enrolled in a social psychology course wrote essays that applied course concepts to life experiences. Students anonymously posted essays for the entire class to view, and peers posted commentaries on classmates' essays using an online discussion board. Students rated the assignment as enjoyable and useful for improving their writing skills and conceptual understanding. For the instructor, the online nature of the assignment afforded all the benefits of peer review without increasing workload.

7 Communication Skills						Interviews and Surveys	
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Connor-Greene, P. A. (2002). Problem-based service learning: The evolution of a team project. *Teaching of Psychology, 29*, 193-197. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785861246>

Abstract: In this article, I describe the evolution of a problem-based service learning project in an undergraduate Abnormal Psychology course. Students worked in teams on a semester-long project to locate and evaluate information and treatment for specific psychiatric disorders. As part of the project, each team selected relevant bibliographic materials, made site visits to area treatment facilities, and prepared resource materials for people in the community seeking information on psychiatric disorders. I modified the process but not the content of the project over 4 semesters. Student evaluations improved significantly after I implemented students' suggested changes.

7 Communication Skills				Self-assessment		Interviews and Surveys	
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Dunn, D. (1996). Collaborative writing in a statistics and research methods course. *Teaching of Psychology, 23*, 38-40. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785834263>

Abstract: I apply two writing techniques – collaborative writing and peer review – to an experimental project in a statistics and research methods course. Student reactions to the collaboration and peer exercise are discussed.

1 Knowledge Base 7 Communication Skills	Course data					Interviews and Surveys	
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Lundy, B. L. (2007). Service learning in life-span developmental psychology: Higher exam scores and increased empathy. *Teaching of Psychology, 34*, 23-27. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a788039135>

Abstract: This article describes research conducted to evaluate the impact of service learning on exam scores and emotional empathy in a life-span development course. Service learning was 1 of 3 project options offered in the course; others included an interview project and a research paper. With the exception of the first exam, scores were significantly higher for the service learning students compared to those who completed other projects. In addition, only the service-learning group demonstrated a significant increase in emotional empathy as measured by the Emotional Empathetic Tendency Scale (EETS; Mehrabian & Epstein, 1972). I discuss the results in terms of the relations among practical experience, reflection, and emotional empathy.

7 Communication Skills						Interviews and Surveys	
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Melvin, K. B. (1988). Rating class participation: The prof/peer method. *Teaching of Psychology*, 15, 137-139. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785861732>

Abstract: To reduce the subjectivity of class participation grades, a method was devised that combined forced-distribution peer ratings with professor grades. In seven seminar courses, correlations between professor and peer ratings ranged from .83 to .90. Course/teacher evaluations were high and the prof/peer technique was generally perceived as a fair way to evaluate participation.

7 Communication Skills						Interviews and Surveys	
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Poorman, P. B. (2002). Biography and role playing: Fostering empathy in abnormal psychology. *Teaching of Psychology*, 29, 32-36. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785859220>

Abstract: In this article I describe a method of fostering empathy in undergraduate and graduate students of abnormal psychology. Students depicted a psychological disorder by writing a brief biography and then role playing the characters they developed. Students demonstrated understanding of the disorders by acting and interacting in a manner consistent with their character and diagnosing other student "characters" using criteria from the Diagnostic and Statistical Manual of Mental Disorders-IV (American Psychiatric Association, 1994). Interpersonal Reactivity Index (Davis, 1980) results indicated student empathy increased significantly after the exercises. Qualitative analyses of focus group interview data supported and augmented the quantitative findings. Students attributed complex gains to the exercises.

7 Communication Skills						Interviews and Surveys	
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Smith, R. A. (1990). Are peer ratings of student debates valid? *Teaching of Psychology*, 17, 188-189. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785858403>

Abstract: Although many instructors use debates in various courses, little information is available regarding debate grading. This article reports an evaluation of student participation in grading debates. In most respects, student and instructor ratings correlated highly. In addition, students reported that they liked debates, that debates helped them to learn, and that evaluating other students was valuable experience. These data support the use of peer ratings in grading classroom debates.

7 Communication Skills		Individual projects		Self-assessment	Collaboration		
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Sung, Y., Lin, C., Lee, C., & Chang, K. (2003). Evaluating proposals for experiments: An application of Web-based self-assessment and peer assessment. *Teaching of Psychology*, 30, 331-334. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785861520>

Abstract: Thirty-four undergraduates used Web-based self- and peer-assessment procedures for evaluating proposals in experimental psychology courses. Students presented their proposals and commented on the proposals of others on the Web. Results indicated that proposal observation and peer interaction enhanced the quality of students' proposals. These procedures also enhanced the interrater reliability of within-group members' proposal ratings.

### Written communication skills

7 Communication Skills		Individual projects					
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Fallahi, C. R., Wood, R. M., Austad, C. S., & Fallahi, H. (2006). A program for improving undergraduate psychology students' basic writing skills. *Teaching of Psychology, 33*, 171-175. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785862161>

Abstract: We examined the effects of in-class writing instruction, practice, peer review, and feedback on writing skills of undergraduates enrolled in a general psychology course. We rated writing for grammar, writing style, mechanics, and American Psychological Association referencing style. Significant differences emerged on the 4 writing skill domains ( $p < .001$ ). Improvement occurred immediately for referencing, whereas other skills did not improve significantly until the 4th paper. The results show that teaching writing in content courses such as general psychology can yield significant improvement in students' writing. We believe that writing instruction by psychology professors is worth the time and effort to help undergraduate psychology students develop better writing skills.

6 Info/Tech Literacy		Individual projects				Interviews and Surveys	
7 Communication Skills							

Schuetze, P. (2004). Evaluation of a brief homework assignment designed to reduce citation problems. *Teaching of Psychology, 31*, 257-259. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785857499>

Abstract: I evaluated a brief homework assignment designed to reduce citation problems in research-based term papers. Students in 2 developmental psychology classes received a brief presentation and handout defining plagiarism with tips on how to cite sources to avoid plagiarizing. In addition, students in 1 class completed 2 brief homework assignments in which they had to identify information in 1 page of text that required a citation. Results found that students who completed the homework assignments had fewer problems with citations, believed that they had a better understanding of situations that comprised plagiarism, and had more confidence in their ability to avoid plagiarism.

7 Communication Skills		Individual projects					
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Stellmack, M., Konheim-Kalkstein, Y., Manor, J., Massey, A. R., & Schmitz, J. A. P. (2009). An assessment of reliability and validity of a rubric for grading APA-style introductions. *Teaching of Psychology, 36*, 102-107. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a909502194>

Abstract: This article describes the empirical evaluation of the reliability and validity of a grading rubric for grading APA-style introductions of undergraduate students. Levels of interrater agreement and intrarater agreement were not extremely high but were similar to values reported in the literature for comparably structured rubrics. Rank-order correlations between graders who used the rubric and an experienced instructor who ranked the papers separately and holistically provided evidence for the rubric's validity. Although this rubric has utility as an instructional tool, the data underscore the seemingly unavoidable subjectivity inherent in grading student writing. Instructors are cautioned that merely using an explicit, carefully developed rubric does not guarantee high reliability.

7 Communication Skills		Individual projects					
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Thaler, N., Kazemi, E., Huscher, Cr., (2009). Developing a rubric to assess student learning outcomes using a class assignment. *Teaching of Psychology*, 36, 113-116. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a909506000>

Abstract: We developed a rubric to assess several of our department's undergraduate student learning outcomes (SLOs). Target SLOs include applications of principles of research methodology, using appropriate statistics, adherence to the Publication Manual of the American Psychological Association, and written communication skills. We randomly sampled 20 percent (N = 55) of the final written manuscripts from several sections of a research methods course and trained 2 graduate-level raters to use the rubric to score the students' papers. We found statistically significant interrater reliability and convergent validity coefficients. These findings are discussed to encourage the development and evaluation of such rubrics to be used across colleges and universities.

### Other forms of communication

7 Communication Skills						Interviews and Surveys	
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Baird, B. N. (1991). In-class poster sessions. *Teaching of Psychology*, 18, 27-29. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785857949>

Abstract: In-class poster sessions offer an attractive alternative to traditional term paper assignments. Poster sessions are suitable for classes of all sizes, promote collaborative learning, encourage creativity and independent thought, develop research and communication skills, and ease the grading burden on instructors. This article describes the logistics of conducting poster sessions and discusses their possible uses. When asked to compare poster sessions with traditional term papers, 100% of the students responding preferred the poster session.

**Goal 8: Sociocultural and International Awareness:** Students will recognize, understand, and respect the complexity of sociocultural and international diversity.

8 Sociocultural/Internat.						Interviews and Surveys	
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Case, K. A. (2007). Raising white privilege awareness and reducing racial prejudice: Assessing diversity course effectiveness. *Teaching of Psychology, 34*, 231-235. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a790482085>

Abstract: Many diversity courses in psychology originally aimed to reduce student racial bias and raise their awareness of racism. However, quantitative data testing the effectiveness of such courses are lacking. This study assessed a required diversity course's effectiveness in raising awareness of White privilege and racism; increasing support for affirmative action; and reducing prejudice, guilt, and fear of other races. Students (N = 146) completed identical surveys during the first and last weeks of the semester. Results indicated greater awareness of White privilege and racism and more support for affirmative action by the end of the term. White students (n = 131) also expressed greater White guilt after completing the course.

8 Sociocultural/Internat.						Interviews and Surveys	
9 Personal Development							

Marchel, C. A. (2004). Evaluating reflection and sociocultural awareness in service learning classes. *Teaching of Psychology, 31*, 120-123. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785859070>

Abstract: Many service learning classes offer students experiences with diverse cultures. Journal writing encourages student reflection and provides information about the changes occurring in student sociocultural awareness prompted by service learning experience. This article presents a rubric useful in assessing the quality of reflection and changes in sociocultural thinking in service learning journals. Text samples illustrate the use of the rubric for evaluating journal quality as well as changes in sociocultural awareness during service experiences. I present pedagogical implications for instruction, dynamic assessment, and grading.

**Additional Resources**

American Psychological Association. (2002). Guidelines on multicultural education, training, research, practice, and organizational change for psychologists. Washington, DC: Author. Retrieved from <http://www.apa.org/ed/resources.html>. Scheduled to expire by 2009.

McGury, S., Shallenberger, D., & Tolliver, D. E. (2008). It's new, but is it learning? Assessment rubrics for intercultural learning programs. *Assessment Update, 20*(4), 6-9. Retrieved from <http://www3.interscience.wiley.com/journal/121371691/abstract?CRETRY=1&SRETRY=0>

Prieto, Loreto R., Whittlesey, V., Herbert, D., Ocampo, C., Schomburg, A., & So, D. (2009). Dealing with diversity issues in the classroom: A survey of the STP membership. *Teaching of Psychology, 36*, 77-83. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a909503752>

Abstract: We examined how psychology educators regarded and addressed diversity issues in their classrooms. The approximately 650 psychology educators who took part in this survey indicated a high level of personal acceptance of diverse persons and acknowledged the importance of infusing diversity issues into courses across the psychology curriculum. Our findings indicated that the level of importance instructors attached to incorporating diversity issues into their course work accounted for the largest amount of variance in the time they reported discussing diversity issues in their classes. We discuss implications for teachers of psychology.



**Goal 9: Personal Development:** Students will develop insight into their own and others' behavior and mental processes and apply effective strategies for self-management and self-improvement.

9 Personal Development						Interviews and Surveys	
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Bolin, A. U., Khramtsova, I., & Saarnio, D. (2005). Using student journals to stimulate authentic learning: Balancing Bloom's cognitive and affective domains. *Teaching of Psychology, 32*, 154-159. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785862876>

Abstract: Bloom (1956) pioneered the measurement of learning outcomes with a taxonomy of educational objectives, but educators often ignore affective learning objectives and focus on attaining cognitive objectives. This study examined student journals as a way to correct the overemphasis on cognitive objectives. Results suggested that course expectations and affective journal outcomes were important correlates of student evaluations of course outcomes even after controlling for the instructor, student gender, and student achievement. These findings have important implications for the use of student journals and for interventions aimed at increasing student evaluations of course outcomes.

9 Personal Development						Interviews and Surveys	Archival measures
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Buch, K., & Spaulding, S. (2008). A longitudinal assessment of an initial cohort in a psychology learning community. *Teaching of Psychology, 35*, 189-193. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a795059237>

Abstract: Discipline-based learning communities have become a popular strategy for improving student performance and satisfaction. This article describes the goals and features of a university-based, first-year psychology learning community (PLC) implemented in Fall 2003. We also report the results of a longitudinal assessment of the impact of the PLC on student retention and progression, academic performance, cocurricular involvement, and satisfaction with the major. Finally, we discuss the benefits and challenges of implementing a PLC.

8 Sociocultural/Internat. 9 Personal Development						Interviews and Surveys	
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Marchel, C. A. (2004). Evaluating reflection and sociocultural awareness in service learning classes. *Teaching of Psychology, 31*, 120-123. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785859070>

Abstract: Many service learning classes offer students experiences with diverse cultures. Journal writing encourages student reflection and provides information about the changes occurring in student sociocultural awareness prompted by service learning experience. This article presents a rubric useful in assessing the quality of reflection and changes in sociocultural thinking in service learning journals. Text samples illustrate the use of the rubric for evaluating journal quality as well as changes in sociocultural awareness during service experiences. I present pedagogical implications for instruction, dynamic assessment, and grading.

9 Personal Development		Individual projects		Self-assessment			
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Peden, B. F., & Carroll, D. W. (2008). Ways of writing: Linguistic analysis of self-assessment and traditional assignments. *Teaching of Psychology, 35*, 313-318. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a905076695>

Abstract: Scholars of teaching and learning have endorsed self-assessment assignments as a way to encourage greater reflection by students. However, no studies to date have compared writing in self-assessment with traditional academic assignments. We performed a quantitative text analysis of students' language in self-assessment versus traditional assignments from 3 courses. Self-assessment assignments included more references to cognitive words (i.e., words related to insight) than traditional academic assignments. In addition, self-assessments included more emotion words and pronouns and were linguistically simpler than traditional academic assignments. We conclude that self-assessment assignments encourage students to become more reflective, a goal of the American Psychological Association (2007) curricular guidelines.

### Additional Resources

Dunn, d. S., McEntarffer, R., & Halonen, J. S. (2004). Empowering psychology students through self-assessment. In D. S. Dunn, C. M. Mehrotra, & J. S. Halonen (Eds.), *Measuring up: Educational assessment challenges and practices for psychology* (pp. 171-186). Washington, DC: American Psychological Association. Retrieved from <http://books.apa.org/books.cfm?id=4318011>

**Goal 10: Career Planning and Development:** Students will emerge from the major with realistic ideas about how to implement their psychological knowledge, skills, and values in occupational pursuits in a variety of settings.

10 Career Planning						Interviews and Surveys	
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Borden, V.M.H., & Rajecki, D.W. (2000). First-year employment outcomes of psychology baccalaureates: Relatedness, preparedness, and prospects. *Teaching of Psychology*, 27, 164-168. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785859407>

Abstract: Surveys of recent baccalaureate degree recipients confirmed earlier findings that, compared with other alumni, psychology baccalaureates ranked low on ratings of the relatedness of their current job to the major. Psychology baccalaureates also rated low on whether their education had prepared them for that job and enhanced their future prospects. Correlations across all majors suggested that employment relatedness predicted judgments of preparedness, and preparedness predicted future prospects. Comparable correlations for psychology majors suggested that they entered the job market with expectations similar to graduates of more occupationally oriented programs. We offer specific recommendations to prepare students for more satisfying outcomes in the postbaccalaureate job market.

10 Career Planning						Interviews and Surveys	Archival measures
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Landrum, R. E. & Mulcock, S. D. Use of pre- and postcourse surveys to predict student outcomes. *Teaching of Psychology*, 34, 163-166. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a788034825>

Abstract: We obtained data from pre- and postcourse questionnaires given in an Introduction to the Psychology Major course taught for 10 semesters and compared these data with institutional outcomes concerning the students' last known major and their graduation status. We found the questionnaire reliably measured (a) vocational identity, (b) knowledge of course content, and (c) students' knowledge of information-finding strategies. Generally, students who entered the course with high commitment to psychology or who demonstrated the greatest growth in commitment tended to remain psychology majors and earned the bachelor's degree in psychology. We discuss factors that affect these predictive outcomes

10 Career Planning						Interviews and Surveys	
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Lunneborg, P. W. (1986). Assessing students' career needs at a large state university. *Teaching of Psychology*, 13, 189-192. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785860938>

Abstract: The results of this needs assessment indicate that not enough students used our departmental career advising program. Comparing our results with those at Creighton University underscored the necessity to increase student usage of all our sources of information (e.g., consulting with peer advisers and attending departmental presentations), as well as their usage of all types of information (e.g., finding out about career opportunities outside of human services and learning how to write a resumé). This article offers practical strategies to promote greater use of both sources and types of information.

1 Knowledge Base 4 Application 10 Career Planning	Course data					Interviews and Surveys	
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Maynard, A. M., Maynard, D. C., & Rowe, K. A. (2004). Exposure to the fields of psychology: Evaluation of an introductory psychology project. *Teaching of Psychology, 31*, 36-39. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785834135>

Abstract: We evaluated a project designed to expose introductory psychology students to the fields of psychology. We created this project to foster student learning about the various fields of psychology, careers that psychologists have, the psychology program on their campus, and courses available at their home institution. Evaluative data included knowledge of the definitions of the fields, measured at 3 time points, as well as students' self-reported reactions. Results indicated that students found the project interesting and would recommend it for future classes. More important, knowledge tests revealed significant increases in knowledge that persisted over a 4-week period.

10 Career Planning						Interviews and Surveys	
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Nauta, M. M. (2002). A career research project for undergraduate psychology students. *Teaching of Psychology, 29* 288-291. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785863877>

Abstract: I describe a career research project designed to increase students' knowledge of careers in psychology. Following a detailed outline, undergraduates enrolled in a senior seminar conducted research on a career of their choice, prepared a written summary of the career information, and presented the summary orally to their classmates. Reactions to the activity were quite positive, and students indicated that the project should be retained for future semesters. I provide an outline of areas I required students to investigate, and I offer recommendations to enhance the activity based on my experiences and students' feedback.

10 Career Planning						Interviews and Surveys	
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Neimeyer, G. J., Lee, G. A., Saferstein, J., & Pickett, Y. (2004). Effects of a graduate preparation program on undergraduate psychology majors. *Teaching of Psychology, 31*, 247-252. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785857497>

Abstract: We conducted 2 studies to assess and enhance levels of graduate preparation. In Study 1, 248 undergraduates and 28 graduate students completed a new measure of graduate preparation, the Grad Prep Quiz. Results documented the psychometric utility and the predictive validity of the measure, with graduate students scoring significantly higher on this measure than undergraduates. Study 2 provided a controlled study of a graduate preparation program. Compared to the control group, participants in the graduate preparation program demonstrated a significant increase in their Grad Prep Quiz scores. These results support efforts to enhance effective preparation for graduate study in psychology.

10 Career Planning						Archival measures	
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Rajecki, D. W., & Metzner, B. S. (1991). Declaring the psychology major: An archival, general model from an urban university. *Teaching of Psychology, 18*, 4-8. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785857822>

Abstract: The records of 806 psychology majors were analyzed to determine their academic profiles at the point of acceptance to the program. Seven descriptive categories adequately encompassed the students' background: (a) direct entry from high school, (b) internal transfer from within the university, (c) external transfer from outside the university, (d) transfer who pursued the major elsewhere, (e) short-term returnee, (f) long-term returnee, and (g) prior degree earned. The number, age, gender, and academic characteristics of the students within these seven categories are reported. Of more general interest, a prototype of the "traditional" psychology major is proposed; based on a certain subset of the records at hand, a generic model of the curricular path to the psychology major is offered.

10 Career Planning						Interviews and Surveys	
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Roscoe, L. J., & Strapp, C. M. (2009). Increasing psychology students' satisfaction with preparedness through a professional issues course. *Teaching of Psychology*, 36, 18-23. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a907765761>

Abstract: The current studies evaluated a capstone course, Professional Issues in Psychology, designed to prepare students for a career in psychology. The first study examined course topics and student evaluations of assignments across 4 terms. Overall, students reported that the assignments were very helpful. The second study found that students who had completed the course felt more satisfied with their preparation for graduate school and for entering the job market relative to a sample of graduating seniors who did not take the course. These results suggest that the course is associated with increased self-efficacy for entering the job market and applying to graduate school. Suggestions for developing a careers capstone course are discussed.

**Multiple Goals.** The following articles discuss assessment strategies that address multiple goals using multiple measures.

1 Knowledge Base 3 Critical Thinking 4 Application 5 Values 7 Communication Skills 8 Sociocultural/Internat. 9 Personal Development 10 Career Planning				Self-assessment		Interviews and Surveys	
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Duffy, D. K. (2004). Service learning, resilience, and community: The challenges of authentic assessment. In D. S. Dunn, C. M. Mehrotra, & J. S. Halonen (Eds.), *Measuring up: Educational assessment challenges and practices for psychology* (pp. 243-256). Washington, DC: American Psychological Association. Retrieved from <http://books.apa.org/books.cfm?id=4318011>

1 Knowledge Base 2 Research Methods 3 Critical Thinking 4 Application 5 Values 7 Communication Skills 10 Career Planning	Course data	Individual projects	Summative performance			Interviews and Surveys	
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Firment, M., Devine, P. J., & Whittlesey, V. (2004). Learning outcomes assessment of the undergraduate psychology major: A model in progress. In D. S. Dunn, C. M. Mehrotra, & J. S. Halonen (Eds.), *Measuring up: Educational assessment challenges and practices for psychology* (pp. 47-63). Washington, DC: American Psychological Association. Retrieved from <http://books.apa.org/books.cfm?id=4318011>

1 Knowledge Base 2 Research Methods 3 Critical Thinking 4 Application 5 Values 6 Info/Tech Literacy 7 Communication Skills 8 Sociocultural/Internat. 10 Career Planning	Course data	Individual projects	Summative performance	Self-assessment	Collaboration		
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Keller, P. A., Craig, F. W., Launius, M. H., Loher, B. T., & Cooledge, N. J. (2004). Using student portfolios to assess program learning outcomes. In D. S. Dunn, C. M. Mehrotra, & J. S. Halonen (Eds.), *Measuring up: Educational assessment challenges and practices for psychology* (pp. 187-207). Washington, DC: American Psychological Association. Retrieved from <http://books.apa.org/books.cfm?id=4318011>

2 Research Methods 3 Critical Thinking 4 Application 6 Info/Tech Literacy 7 Communication Skills 8 Sociocultural/Internat. 9 Personal Development				Self-assessment		Interviews and Surveys	
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Kruger, D. J., & Zechmeister, E. B. (2001). A skills-experience inventory for the undergraduate psychology major. *Teaching of Psychology, 28*, 249-253. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785858531>

Abstract: Psychology majors develop a number of academic skills during their studies that are valuable in future careers and other domains. However, assessment of experiences related to skill development can be quite difficult and resource intense. We present results of 2 studies using a skills-experience inventory to assess academic skill exposure. In the first study, graduating senior psychology majors reported greater exposure than freshmen in 7 skill-experience areas. The second study showed significant differences in exposure to 5 skill areas among graduating seniors in 4 academic areas. A skills-experience inventory may be an efficient tool for documenting the skills and experiences students encounter when majoring in psychology.

1 Knowledge Base 2 Research Methods 3 Critical Thinking 4 Application 5 Values 6 Info/Tech Literacy 7 Communication Skills 8 Sociocultural/Internat. 9 Personal Development 10 Career Planning	Course data	Individual projects	Summative performance			Interviews and Surveys	Archival measures
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Marsh, P. A., & Poepsel, D. L. (2008). Perceived usefulness of learning outcomes predicts ratings of departmental helpfulness. *Teaching of Psychology, 35*, 335-342. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a905077131>

Abstract: Psychology seniors at a Midwest university reflected on the student learning outcomes (SLOs) for the major. This study examined the relations among students' perceived usefulness of the SLOs, measures of learning, ratings of self-confidence in their knowledge of psychology, and evaluations of the department's helpfulness in students' skill development. Correlations showed few significant relations between usefulness of the SLOs and measures of learning and no relations with ratings of self-confidence. Perceived usefulness of the outcomes was a significant predictor of the department's perceived helpfulness in students' skill development. However, students' perceptions of the department dropped significantly by the end of the capstone course. We discuss implications related to activities teachers might use to enhance learning.

1 Knowledge Base 2 Research Methods 7 Communication Skills  10 Career Planning			Summative performance			Interviews and Surveys	Archival measures
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Stoloff, M. L., Apple, K. J., Barron, K. E., Reis-Bergan, M., & Sundre, D. (2004). Seven goals for effective program assessment. In D. S. Dunn, C. M. Mehrotra, & J. S. Halonen (Eds.), *Measuring up: Educational assessment challenges and practices for psychology* (pp. 29-46). Washington, DC: American Psychological Association. Retrieved from <http://books.apa.org/books.cfm?id=4318011>



## Additional Resources

- American Psychological Association. (1997). *Learner-centered psychological principles: A framework for school reform & redesign*. Washington, DC: American Psychological Association, Board of Educational Affairs. Retrieved from <http://www.apa.org/ed/cpse/LCPP.pdf>
- American Psychological Association. (2007). *APA guidelines for the undergraduate psychology major*. Washington, DC: Author. Retrieved from [http://www.apa.org/ed/psymajor\\_guideline.pdf](http://www.apa.org/ed/psymajor_guideline.pdf)
- American Psychological Association. (2008). *Teaching, learning, and assessing in a developmentally coherent curriculum*. Washington, DC: American Psychological Association, Board of Educational Affairs. Retrieved from <http://www.apa.org/ed/Teaching-Learning-Assessing-Report.pdf>
- American Psychological Association. (2005). *National standards for high school psychology curricula*. Washington, DC: Author. Retrieved from <http://www.apa.org/ed/natlstandards.html>

### C. Applying Assessment Strategies in Psychology

#### 2. Using the New Bloom's Taxonomy to Design Meaningful Learning

This entry explores recent revisions in Bloom's Taxonomy along with a tool to promote active learning strategies that can help translate abstract outcomes into practical strategies. This entry also links to a recent APA Task Force report that demonstrates how psychology programs may apply Bloom's Taxonomy in constructing a developmentally coherent curriculum and embedding assessment within that curriculum.

### Using the New Bloom's Taxonomy to Design Meaningful Learning Assessments

Kevin Smythe and Jane Halonen

APA Board of Educational Affairs Task Force on Psychology Major Competencies (2002)

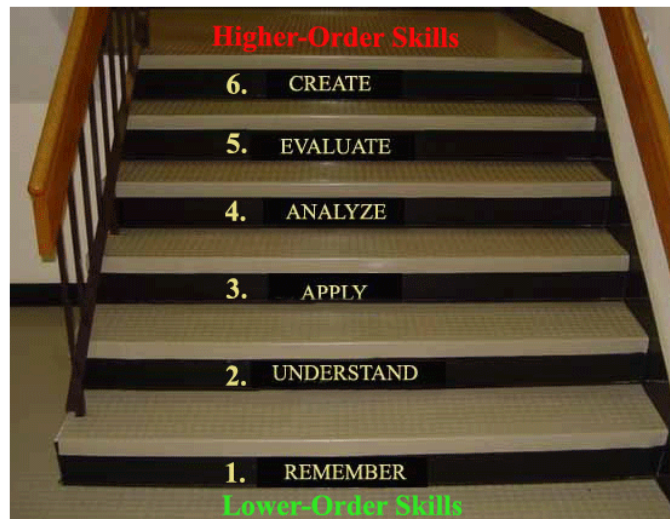
YAAWYNNN. Oh no, that dreaded signal that students give to let you know they aren't engaged in the learning that you have planned. To reduce disengagement, teachers move beyond lecture in search of new ways to engage students in the learning process. Engaging students requires mechanisms that increase class participation and facilitate higher-order learning. The purpose of this segment is to provide teachers with some tools for promoting higher-order learning.

Developing higher-order thinking skills in students is not an easy task. Historically, teachers have looked to Bloom's Taxonomy (1956) for assistance. Bloom's model divided thinking skills into lower-order and higher-order knowledge. The early taxonomy began with knowledge, understanding, and application as lower level skills and cast higher level skills as analysis, synthesis, and evaluation.

#### Bloom's Taxonomy Revisited

Although Bloom's Taxonomy proved useful to teachers and students alike, recent decades gave rise to numerous criticisms, implying that the model was out of date. These criticisms included concerns with setting applicability, contemporary language, and process conceptualization. More recently, Anderson and Krathwohl (2001) have adapted Bloom's model to fit the needs of today's classroom by employing more outcome-oriented language, workable objectives, and changing nouns to active verbs (see "stairs" below). Most notably, *knowledge* has been converted to *remember*. In addition, the highest level of development is *create* rather than *evaluate*.

#### Revision of Bloom's Taxonomy



Based on:

Anderson, L.W., & Krathwohl, D.R. (Eds.) (2001). *A taxonomy of learning, teaching, and assessment: A revision of Bloom's taxonomy of educational objectives*. New York: Longman. For more information, visit <http://tinyurl.com/AndersonKrathwohl2001>

A briefer description of the revised taxonomy is available from the following source:

Krathwohl, D. R. (2002, Autumn). A revision of Bloom's taxonomy: An overview. *Theory into Practice*, 41(4), 212-218. Available online from [http://findarticles.com/p/articles/mi\\_m0NQM/is\\_4\\_41/ai\\_94872707/](http://findarticles.com/p/articles/mi_m0NQM/is_4_41/ai_94872707/)



## Applying Bloom's Taxonomy to Assessment of Student Learning in Psychology Programs

American Psychological Association. (2008). Teaching, learning, and assessing in a developmentally coherent curriculum. Washington, DC: American Psychological Association, Board of Educational Affairs. Retrieved from <http://www.apa.org/ed/resources.html>

*This is a report from the APA Board of Educational Affairs Task Force on Strengthening the Teaching and Learning of Undergraduate Psychological Science. The Task Force advocates for psychology programs to design their curricula in ways that promote students' development along Bloom's taxonomy from basic (retention and comprehension) to intermediate (analysis and application), and advanced (evaluation and creation) levels. The Task Force also argues for the use of authentic assessments embedded within core courses that may be used to track student development through the curriculum.*

*The appendices in the Task Force's report include rubrics that translate the APA Guidelines for the Undergraduate Psychology Major into learning outcomes at the basic, intermediate, and advanced levels. Additional appendices provide examples of authentic assessments of the learning outcomes in several psychology courses.*

### C. Applying Assessment Strategies in Psychology

#### 3. Rubrics

We provide references and descriptions of several articles that include scoring rubrics for assessing student work and Web sites for locating and developing rubrics.

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 Note: *Italicized descriptions are summaries written by the authors of the Assessment Cyberguide.*  
 Descriptions in plain text are verbatim from the source.

### Writing Skills

**Dimensions:** Purpose, Sources, Thought, Details, Organization, Citation, Bibliography, Mechanics, Diction, Language, Assignment

Bender, K. (2006). What does the letter grade mean? *Assessment Update*, 18(6), 10-11. Retrieved from <http://www3.interscience.wiley.com/journal/114051374/abstract>

*Provides a rubric that connects letter grades to element such as organization, research, and mechanics.*

**Dimensions:** Adherence to APA style, Quality of abstract, Relevant literature, Hypotheses operationally defined, Quality of methods, Quality of results, Quality of discussion, Statement pros/cons, Use of charts/figures, Written communication

Thaler, N., Kazemi, E., & Huscher, C.,. (2009). Developing a rubric to assess student learning outcomes using a class assignment. *Teaching of Psychology*, 36, 113-116. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a909506000>

Abstract: We developed a rubric to assess several of our department's undergraduate student learning outcomes (SLOs). Target SLOs include applications of principles of research methodology, using appropriate statistics, adherence to the Publication Manual of the American Psychological Association, and written communication skills. We randomly sampled 20 percent ( $N = 55$ ) of the final written manuscripts from several sections of a research methods course and trained 2 graduate-level raters to use the rubric to score the students' papers. We found statistically significant interrater reliability and convergent validity coefficients. These findings are discussed to encourage the development and evaluation of such rubrics to be used across colleges and universities.

**Dimensions:** APA formatting, Literature review and argument support, Purpose of study, Study description and hypothesis, Overall organization and logical flow, Sources, Scientific writing style, Composition/grammar/word choice

Stellmack, M., Konheim-Kalkstein, Y., Manor, J., Massey, A. R., & Schmitz, J. A. P. (2009). An assessment of reliability and validity of a rubric for grading APA-style introductions. *Teaching of Psychology*, 36, 102-107. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a909502194>

Abstract: This article describes the empirical evaluation of the reliability and validity of a grading rubric for grading APA-style introductions of undergraduate students. Levels of interrater agreement and intrarater agreement were not extremely high but were similar to values reported in the literature for comparably structured rubrics. Rank-order correlations between graders who used the rubric and an experienced instructor who ranked the papers separately and holistically provided evidence for the rubric's validity. Although this rubric has utility as an instructional tool, the data underscore the seemingly unavoidable subjectivity inherent in grading student writing. Instructors are cautioned that merely using an explicit, carefully developed rubric does not guarantee high reliability.

**Dimensions:** Grammar, Writing style, Writing mechanics, Referencing

Fallahi, C. R., Wood, R. M., Austad, C. S., & Fallahi, H. (2006). A program for improving undergraduate psychology students' basic writing skills. *Teaching of Psychology*, 33, 171-175). Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785862161>

Abstract: We examined the effects of in-class writing instruction, practice, peer review, and feedback on writing skills of undergraduates enrolled in a general psychology course. We rated writing for grammar, writing style, mechanics, and American Psychological Association referencing style. Significant differences emerged on the 4 writing skill domains ( $p < .001$ ). Improvement occurred immediately for referencing, whereas other skills did not improve significantly until the 4th paper. The results show that teaching writing in content courses such as general psychology can yield significant improvement in students' writing. We believe that writing instruction by psychology professors is worth the time and effort to help undergraduate psychology students develop better writing skills.

## Scientific Inquiry Skills

LEVELS OF PROFICIENCY: Before training – Basic Intro Psych – Developing - Advanced Undergrad - Professional Grad

DOMAINS (Components within each domain)

**Descriptive skills** (Observation; Measurement; Interpretation)

**Conceptualization skills** (Concept skills; Basic theory skills; Advanced theory skills)

**Problem solving skills** (Methods skills; Statistical reasoning; Bias detection and management)

**Ethical reasoning** (Awareness of ethical standards; Evaluation of ethical practices; Adherence to ethical standards)

**Scientific attitudes and values** (Enthusiasm; Objectivity/subjectivity; Parsimony; Skepticism; Tolerance of ambiguity)

**Communication skills** (Resource gathering; Argumentation; Conventional expression)

**Collaboration skills** (Project completion; Process management; Leadership; Consensus building; Brainstorming)

**Self-assessment** (Self-regulation; Self-reflection)

Bosack, T. N., McCarthy, M. A., Halonen, J. S., & Clay, S. P. (2004). Developing scientific inquiry skills in psychology: Using authentic assessment strategies. In D. S. Dunn, C. M. Mehrotra, & J. S. Halonen (Eds.), *Measuring up: Educational assessment challenges and practices for psychology* (pp. 141-169). Washington, DC: American Psychological Association. Retrieved from <http://books.apa.org/books.cfm?id=4318011>

*Presents a development rubric for assessing scientific inquiry skills along eight domains and recommends strategies for conducting authentic assessments in courses that use the rubric.*

Halonen, J. S., Bosack, T., Clay, S., & McCarthy, M. (with Dunn, D. S., Hill, IV, G. W., McEntarffer, R., Mehrotra, C., Nesmith, R., Weaver, K., & Whitlock, K.). (2003). A rubric for learning, teaching, and assessing scientific inquiry in psychology. *Teaching of Psychology, 30*, 196-208. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785856626>

**Abstract:** Accountability pressures influence all levels of psychology instruction. In this article we explore how to meet those pressures with integrity, focusing on authentic assessment and teaching as a primary solution. We propose a rubric to describe the progress of students' acquisition of scientific inquiry skills applied to behavior and provide an example of an authentic assessment that demonstrates use of the rubric. Application of the rubric can enhance active learning, promote more sophisticated scientific inquiry, improve metacognitive development, support program evaluation, and enrich faculty development.

Tomcho, T. J., Foels, R., Rice, D., Johnson, J., Moses, T. P., Warner, D. J., Wetherbee, R. A., & Amalfi, T. (2008). Review of ToP teaching strategies: links to students' scientific inquiry skills development. *Teaching of Psychology, 35*, 147-159. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a795059446>

**Abstract:** A major function of instruction in psychology is to convey complex phenomena in a manner accessible to students. Instructors using well-designed teaching activities can help to make complex material accessible. We content analyzed teaching activities reported in the first 33 years of *Teaching of Psychology*. We identified 15 general teaching strategies in 681 teaching activity articles and coded strategies' potential impact on student development of scientific inquiry skills. We found that ToP authors have consistently used learner-centered strategies and have significantly increased their use of active evaluation strategies. We discuss implications of instructor use of the most frequently encountered strategies.



## Self-reflection

LEVELS: Descriptive, Analytic, Integrated  
CONTENT: Self, Client, Context

Marchel, C. A. (2004). Evaluating reflection and sociocultural awareness in service learning classes. *Teaching of Psychology*, 31, 120-123. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785859070>

Abstract: Many service learning classes offer students experiences with diverse cultures. Journal writing encourages student reflection and provides information about the changes occurring in student sociocultural awareness prompted by service learning experience. This article presents a rubric useful in assessing the quality of reflection and changes in sociocultural thinking in service learning journals. Text samples illustrate the use of the rubric for evaluating journal quality as well as changes in sociocultural awareness during service experiences. I present pedagogical implications for instruction, dynamic assessment, and grading.

## Additional Rubrics

Gottfried, G. M. (2009). *Assessing student learning: A collection of evaluation tools*. Office of Teaching Resources in Psychology. Retrieved from <http://tinyurl.com/Gottfried2009>

*This 31-page resource provides three assessment measures:*

1. *A Rubric for Evaluating a Psychology Research Report*
  2. *Evaluating Students' Process Knowledge: Measuring Understanding of Inter-Rater Reliability*
  3. *Reading a Journal Article: An Assessment Tool*
- Each includes an introduction that describes the development of the tool and a scoring rubric. The second and third measures also include reproduction-ready assignments for activities*

## Rubric Web Sites

**Authentic Assessment Toolbox:** <http://jonathan.mueller.faculty.noctrl.edu/toolbox/>

*This site provides an online tutorial with recommendations for articulating standards, developing assignments, and designing rubrics to assess student work.*

**RubiStar:** <http://rubistar.4teachers.org/index.php>

*At this site, you may create a rubric online and print it out for use in your class, or open up and modify one of the example rubrics available at the site. If you register (for free), you may save your rubrics online for later use.*

**RCampus:** <http://www.rcampus.com/>

*This site contains several online resources for faculty members, including rubrics. For a list of rubrics for courses in psychology, visit <http://www.rcampus.com/indexrubric.cfm>*



**C. Applying Assessment Strategies in Psychology**

**4. Helping our Students Understand Our Goals**

Student learning benefits from explicit understanding of our assessment plan. In this entry, Drew Appleby discusses strategies for bringing students into the conversation to assist department planning and improve their learning and metacognition.

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**The First Step in Student-Centered Assessment:  
Helping Students Understand the Goals of Their Department's Curriculum**

Drew C. Appleby<sup>1</sup>  
Director of Undergraduate Studies in Psychology  
Indiana University - Purdue University Indianapolis

Most psychology majors believe they understand the curriculum of their undergraduate program if they know what courses to take and when to take them. Although it is certainly important to know the answers to these questions, students should also be acutely aware of the answers to three other questions:

1. Why should I take these courses?
2. How will these courses change me?
3. Who can I become as a result of successfully completing these courses?

This paper provides an example of a strategy that undergraduate psychology faculty can use to enable their majors to understand that their curriculum is not just a list of courses they must complete to receive a degree, but rather a set of coherent and transformational experiences carefully created to provide them with the opportunities to develop the knowledge, skills, and characteristics they will need to become the people they aspire to be. This strategy is the first step in student-centered assessment that can enhance our ability to help students "select courses, plan careers, and develop life views" (Halpern, 1993, p. 37).

Although there are many definitions of the word assessment, the most compelling conceptualization I have encountered is that assessment helps us answer the question, "How do we know that our students know what we want them to know?" (T. McGovern, personal communication, April 17, 1997). The strategy described in this paper enables "our students to know what we want them to know" so they can become more motivated and cooperative partners in the teaching-learning process.

At IUPUI, we surveyed our psychology majors to measure their awareness of and ability to accomplish our curriculum goals and student learning outcomes (SLOs). The following two student responses demonstrate considerable insight and conviction regarding the need to make outcomes explicit (Appleby, 2002, p. 135):

Student One: Give better explanations of why students need to know the things they are learning in their classes and not just, "You need to know this." For example, in what other classes would the same SLOs be used? Statistics was used again in both my Introductory Lab and Capstone classes. Students need to know these things!

Student Two: I learned in my cognition class that when people are aware of the purpose of a task they are asked to perform, they usually perform it better. If my teachers would tell me why I am doing the things they want me to do (the department's SLOs) and why these SLOs are important for me to accomplish, I would be much more enthusiastic about accomplishing them. I am not an animal that must be operantly conditioned. I am a human being who can benefit from knowing the purposes and consequences of the behaviors I am asked to perform.

The word *curriculum* is derived from the Latin word *currere*, which means "to race" (Costello, 1993, p. 340). In modern English, curriculum means "a group of related courses, often in a special field of study" (p. 340). Psychology departments carefully choose a group of courses to create a coherent curriculum whose successful completion will enable their majors to accomplish a set of crucial goals. Ironically, they seldom share the underlying rationale for their curriculum with their students. I contend that we should be more explicit about the curricula we create. When we simply present our curriculum as a list of classes with no explanation for their existence other than that they are required, many of our students take the original Latin derivation of curriculum far too literally by viewing their course of study as a race they must rush through as quickly as possible so they can graduate in the shortest period of time. If the goal of a college education were to finish it as quickly as possible, then this would be an appropriate strategy. But

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<sup>1</sup> Drew Appleby served on the 2002 APA Board of Educational Affairs Task Force on Psychology Major Competencies. This is an updated version of an article he wrote for the first version of the Assessment Cyberguide.

that is not its goal. The goal of a college education is to prepare a person to lead a fulfilling and productive personal, social, civic, and professional life after graduation.

I wrote the section of this paper titled *Understanding the IUPUI Undergraduate Psychology Curriculum* for my students to explain how their curriculum can help them achieve their post-baccalaureate aspirations (i.e., the attainment of admission into graduate school, a satisfying career, and/or a fulfilling personal life). If they read it carefully and comprehend it fully, it will help them to become more "mindful" (Langer, 1989) of the nature and purposes of the psychology courses they are required to take so they can engage in these courses in an active, thoughtful, and goal-oriented manner, rather than simply attempting to 'get them out of the way' as quickly and mindlessly as possible. In other words, it will help them to experience the benefits of a greater sense of control (Rodin & Langer, 1977) over their undergraduate educations.

The APA's Board of Educational Affairs Task Force on Undergraduate Psychology Major Competencies has identified ten crucial SLOs for psychology majors and our department has used these SLOs as the foundation of its curricular assessment process. The development of this combination of SLOs is congruent with the fundamental goal of education in psychology, which is "to teach students to think as scientists about behavior" (Brewer, 1993, p. 169). The attainment of these SLOs is based on the acquisition and demonstration of the fundamental knowledge and skills underlying the six Principles of Undergraduate Learning (Indiana University-Purdue University Indianapolis, 2007) that my university urges all its undergraduates to achieve. The substance and depth of the first five SLOs distinguish psychology majors from their peers who major in other disciplines. The second five SLOs are those that can be achieved when students take full advantage of the general education courses they are required to take (e.g., English Composition and Speech) and apply what they have learned in these courses to their psychology classes and electives.

The remainder of this paper is the document I created to explain my department's curriculum to our students. I wrote it in a very personal manner (i.e., in the first and second person) in order to be as clear and compelling as possible. It is important to keep in mind that our curriculum is only one example of many that could result in the accomplishment of the achievement of the SLOs suggested by the APA task force. For a set of other equally valid curricula, please see Brewer (1993). I want other departments to feel free to use the following document as a model for communicating the purpose, organization, and requirements of their own unique curricula to their students.

### **Understanding the IUPUI Undergraduate Psychology Curriculum: An Open Letter to Students from Their Advisors**

The IUPUI undergraduate psychology curriculum was created to enable psychology majors to accomplish a set of student learning outcomes (SLOs) whose successful accomplishment will prepare them to continue their education in graduate school, to secure fulfilling employment, and/or to lead satisfying personal, social, and civic lives after graduation. Our curriculum is divided into five sets of courses: introductory courses, methods courses, content courses, specialization courses, and capstone courses. The successful completion of each of these sets serves to enable psychology majors to develop one or more of our department's SLOs, which are listed and explained below.

1. **Content of Psychology:** Students should show familiarity with the major concepts, theories, empirical findings, and historical trends in psychology.
2. **Research Methods in Psychology:** Students should understand and apply basic research methods in psychology, including research design, data analysis, and interpretation.
3. **Critical Thinking Skills in Psychology:** Students should respect and use critical and creative thinking, skeptical inquiry, and, when possible, the scientific approach to solve problems related to behavior and mental processes.
4. **Application of Psychology:** Students should understand and apply psychological principles to personal, social, and organizational issues.
5. **Values in Psychology:** Students should be able to evaluate empirical evidence, tolerate ambiguity, act ethically, and reflect other values that are the underpinnings of psychology as a discipline.
6. **Information and Technological Literacy:** Students should demonstrate information competence and the ability to use computers and other technology for many purposes.

7. Communication Skills: Students should be able to communicate effectively in a variety of formats.
8. Socio-Cultural and International Awareness: Students should recognize, understand, and respect the complexity of socio-cultural and international diversity.
9. Personal Development: Students should develop insight into their own and others' behavior and mental processes and apply effective strategies for self-management and self-improvement.
10. Career Planning and Development: Students should emerge from the major with realistic ideas about how to implement their psychological knowledge, skills, and values in occupational pursuits in a variety of settings.

The remainder of this paper will identify and explain the purpose of each of the five types of courses that make up your curriculum. I have underlined the key words from each of the ten SLOs to bring them to your attention and to create the connections between the SLOs and what you will accomplish in your required courses. I hope this information will enable you to understand the rationale behind your curriculum and lead you to a state of increased awareness of the value of the courses it contains. Once you become aware of why you are taking the courses you are required to take and how they can help you to develop the knowledge, skills, and characteristics (KSCs) you will need to accomplish your personal, educational, and career objectives, I believe you will begin to view your coursework as an integrated whole that will help you achieve your future goals.

### Introductory Courses

The purposes of introductory courses are to introduce you to the content of psychology; to familiarize you with the department's faculty, curriculum, organizations, resources, and programs; and to engage you in active career planning and development. There are three introductory courses.

- B103 Orientation to a Major in Psychology
- B104 Introduction to Psychology as a Social Science
- B105 Introduction to Psychology as a Biological Science

The successful completion of B103 enables you to understand your strengths, weakness, values, and goals and to identify, clarify, and create a plan to accomplish your post-baccalaureate aspirations. Many students choose psychology as their major before they fully comprehend its nature as a research-based science. B103 will insure that you are fully aware of the nature of your major and what your major will enable you to do after you graduate. You will also begin to strengthen the written and oral communication skills you will need in all your remaining psychology courses.

B104 and B105 introduce you to the full spectrum of areas of specialization that exist within psychology. B104 covers topics that represent the social science side of psychology (i.e., personality, lifespan development, social psychology, abnormal psychology, psychotherapy, intelligence, psychological testing, and industrial-organizational psychology). B105 covers topics that represent the biological science side of psychology (i.e., behavioral neuroscience, motivation, emotion, memory, sensation, perception, cognition, language, and consciousness). Because of the importance of crucial topics such as learning, research methods, and the history of psychology, both B104 and B105 cover these topics.

The successful completion of these three introductory courses paves the way for you to continue your study of psychology with a fundamental awareness of its basic history, empirical findings, principles, concepts, theories, specializations, methods, and applications and an understanding of how a psychology major can prepare you for your future. These courses will also provide you with an understanding of how psychological principles can be applied to personal, social, and organizational issues; help you develop insight into your own and others' behaviors and mental processes; and provide you with strategies for self-management and self-improvement. Another important outcome of the successful completion of these introductory courses is that it will allow you to make informed decisions when you select your subsequent psychology courses.

### Methods Courses

The purpose of methods courses is to provide you with opportunities to learn and apply research methods used by psychologists during their scientific investigations of behavior and mental processes. These courses encourage critical and creative thinking during the scientific approach to problem solving. They require you to provide plausible

explanations for psychological observations, comprehend and critique the findings of previous research, produce novel hypotheses derived from the existing psychological literature, create ethical research designs to test these hypotheses, demonstrate technological numeracy by analyzing empirical evidence with statistical software, and provide logical interpretations of the results of your research. You will also demonstrate information literacy by utilizing bibliographic technologies to identify and evaluate information relevant to your research).

There are two required methods courses.

B305 Statistics

B311 Introductory Laboratory in Psychology

B305 focuses on the fundamentals of statistical data analysis, which enable you to organize and summarize data (descriptive statistics) and to interpret and draw conclusions from data (inferential statistics). B311 requires and builds upon the statistical knowledge gained in B305 as it introduces you to the research methods used by psychologists, the ethics of research, and experimental report writing. The successful completion of these two courses is crucial to the further success of a psychology major. Those students who aspire to graduate school will use the critical thinking skills they acquire in these courses to design and perform the research projects that will serve as evidence to graduate admissions committees of their ability to conduct themselves as scientific psychologists. Those who do not perform research themselves can employ the skills to understand and evaluate the research of others. As you progress from your introductory courses to your more advanced courses, you will be required to read, comprehend, and evaluate original psychological research (i.e., primary sources such as articles in professional journals) rather than learning from secondary sources such as textbooks in which the authors have done all the interpreting and evaluating for you. If you have not mastered the vocabulary and techniques from your methods courses, and not carried it with you into the next group of courses I will describe (Core Courses), the results section of a journal article will appear to you as if it had been written in an alien language from a planet far beyond our galaxy.

### Core Courses

The purpose of core courses is to provide you with a broad and deep exposure to the main content areas that define the discipline of psychology. You will select six courses from a set of twelve that represents the full range of biological and the social approaches to psychology, including both theoretical and applied areas. There are twelve core courses.

B307 Tests and Measurement

B310 Life Span Development

B320 Behavioral Neuroscience

B334 Perception

B340 Cognition

B344 Learning

B356 Motivation

B358 Industrial/Organizational Psychology

B370 Social Psychology

B380 Abnormal Psychology

B398 Brain Mechanisms of Behavior

B424 Theories of Personality

Core courses provide you with an opportunity to choose a coherent set of courses that will provide you with the KSCs you will need to achieve your post-baccalaureate aspirations. Suppose you are preparing to become a school psychologist whose job will be to test the cognitive capabilities of children in order to determine if their ability to learn falls within the normal range. In this case, B307, B310, B340, B344, and B380 would provide an excellent foundation. The addition of B320, which provides a basic knowledge of how the anatomy and physiology of the nervous system controls behavior and mental processes, would enable you to identify and understand the effects of the drugs that your young clients may be taking either legally (e.g., Ritalin or Prozac) or illegally (e.g., alcohol or marijuana). No matter what career you plan to pursue, the core courses you take will enable you to understand how psychology can be applied to a wide variety of individual, social, and organizational issues and encourage you to recognize, understand, and respect socio-cultural complexity and international diversity.

### Specialization Courses

The purpose of specialization courses is to provide you with an opportunity to continue your intellectual self-improvement by focusing your studies on the contents, methods, and applications of a particular area of psychology

by choosing and completing two 300-level or above psychology classes you have not used to satisfy your Methods, Core, or Capstone requirements. Continuing our school psychologist plan from the preceding section, you could build on the knowledge you gained in B310 by taking B360 Child and Adolescent Psychology and become even more knowledgeable about the effects of drugs after completing B320 by enrolling in B394 Drugs and Behavior or B396 Alcohol, Alcoholism, and Drug Abuse. The addition of these courses to your already impressive constellation of core courses will help to set you apart from other graduate school applicants. Distinguishing yourself in this manner is becoming increasingly important because of the huge number (approximately 88,000) of psychology majors who graduate each year in the United States with a bachelor's degree. Courses you could take to satisfy this requirement include the following.

B322 Introduction to Clinical Psychology  
B365 Stress and Health  
B360 Childhood and Adolescence  
B366 Concepts and Applications in Organizational Psychology  
B367 Concepts and Applications in Personnel Psychology  
B375 Psychology and Law  
B376 Psychology of Women  
B386 Introduction to Counseling  
B394 Drugs and Behavior  
B396 Alcohol, Alcoholism, and Drug Abuse  
B420 Humanistic Psychology  
B421 Internship in Psychology  
B422 Professional Practice  
B492 Readings and Research in Psychology

A unique feature of IUPUI's psychology curriculum is the option to earn a Track Concentration in one or more of the following four areas of psychological specialization: clinical psychology, behavioral neuroscience, industrial/organizational psychology, and the psychology of addictions. You must complete a set of core, specialization, and capstone courses described in the Psychology Track Concentration table contained in the Purdue School of Science section of the most recent issue of *the IUPUI Campus Bulletin* to earn one of these concentrations.

### Capstone Courses

In architecture, a capstone is the top-most stone that completes a building. In an academic context, a capstone is the final class that completes a psychology major's curriculum. The purpose of capstone classes is to provide students with an opportunity "to demonstrate comprehensive learning in their major through some type of product or performance" (Palomba & Banta, 1999, p. 124). In other words, a capstone is a class in which senior psychology majors are required to pull together what they have learned in their previous classes and use this integrating experience to demonstrate they are capable of doing what they should be able to do as they graduate from the program (i.e., to demonstrate accomplishment of the department's SLOs). This process serves a dual purpose. First, it will provide you with a final opportunity to practice and demonstrate the skills you will need to succeed after graduation on the job or in graduate school. Second, it provides the Psychology Department a final opportunity to assess whether or not we have been successful in our mission to produce competent psychology majors and to use the results of this assessment to improve our curriculum for future psychology majors.

Most academic departments offer only one type of capstone class and some offer no capstone at all. The IUPUI Psychology Department offers you three types of capstone courses. If you are pursuing a BA degree, you may complete a capstone laboratory research project, a capstone practicum, or a capstone seminar. If you are pursuing a BS degree, you must complete a capstone laboratory.

A capstone laboratory offers you the opportunity to design, perform, analyze, and report an empirical research project on a topic of your choosing. You may conduct this research (a) in a laboratory class dedicated to the study of a particular subdiscipline of psychology (e.g., developmental or social psychology), (b) in a laboratory class dedicated to applied research, or (c) in an honors research class. The classes that will satisfy this requirement are as follows.

B433 Capstone Laboratory in Applied Psychology  
B461 Capstone Laboratory in Developmental Psychology  
B471 Capstone Laboratory in Social Psychology  
B499 Capstone Honors Research

A capstone practicum allows you to engage in the application what you have learned about a particular sub-discipline of psychology (e.g., industrial/organizational or clinical psychology) in a workplace or clinical setting. The classes that will satisfy this requirement are as follows.

B462 Capstone Practicum in Industrial Psychology

B482 Capstone Practicum in Clinical Psychology

A capstone seminar provides you with opportunities to (a) perform an in-depth examination of the history, concepts, theories, methods, and applications of a sub-discipline of psychology in which you have an occupational interest, (b) engage in a collaborative research project with your classmates, and (c) create a professional career planning portfolio designed to facilitate your transition to life after college (i.e., employment or graduate school). The following class will fulfill this requirement.

B454 Capstone Seminar in Psychology

The purpose of this paper has been to provide you with a clear understanding of the rationale behind the IUPUI Psychology Department's undergraduate curriculum. You can approach your undergraduate education as a psychology major in a more active and purposeful manner once you understand why the department created its curriculum, how you can accomplish its SLOs, and who you can become as a result of their accomplishment. Successful undergraduate educations take place when well-qualified faculty lead well-informed students through a well-designed curriculum. The IUPUI Psychology Department possesses a well-qualified faculty and a well-designed curriculum. I hope this paper has helped to further transform you into a well-informed student.

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**C. Applying Assessment Strategies in Psychology****5. Assessment and the Scholarship of Teaching and Learning (SoTL)**

We provide lists of books and articles that discuss the relationship between assessment and SoTL, conferences focused on assessment and SoTL, and journals that publish research on assessment and SoTL.

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The publication of Boyer's (1990) *Scholarship Reconsidered* initiated conversations that have expanded the definition of "scholarship" beyond basic research in a discipline to include additional forms such as the scholarship of teaching and learning (SoTL). The following articles and books describe the interconnections between SoTL and assessment within classes, courses, and curricula. We follow this list of articles and books with a list of conferences and journals that publish research on assessment and SoTL.

**Books and Articles on Assessment and SoTL**

Bartsch, R. A., Bittner, W. M. E., & Moreno, J. E. Jr. (2008). A design to improve internal validity of assessments of teaching demonstrations. *Teaching of Psychology, 35*, 357-359. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a905077917>

Abstract: Internal validity is important in assessing teaching demonstrations both for one's knowledge and for quality assessment demanded by outside sources. We describe a method to improve the internal validity of assessments of teaching demonstrations: a 1-group pretest-posttest design with alternative forms. This design is often more practical and ethical than random assignment, and it is more valid than a single posttest-only or simple 1-group pretest-posttest design. We describe how to interpret results from this design and discuss the advantages and disadvantages.

Boyer, E. L. (1990). *Scholarship reconsidered: Priorities of the professorate*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.

From the book's description: This book offers a new paradigm that recognizes the full range of scholarly activity by college and university faculty and questions the existence of a reward system that pushed faculty toward research and publication and away from teaching. For more information, visit <http://www.josseybass.com/WileyCDA/WileyTitle/productCd-0787940690.html>

Buskist, W., Carlson, J. F., Christopher, A. N., Prieto, L., & Smith, R. A. (2008). Models and exemplars of scholarship in the teaching of psychology. *Teaching of Psychology, 35*, 267-277. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a905076446>

Abstract: This article provides ideas for engaging in the scholarship of teaching in psychology. Topics covered include contributing to the Society for the Teaching of Psychology's Office of Teaching Resources in Psychology and Teaching of Psychology. Writing and editing books also constitute scholarly work. Finally, teaching with intentionality and accountability can be productive in leading to scholarship opportunities. By providing models and exemplars of scholarship in the teaching of psychology, we hope to encourage more teachers to engage in such activities.

Gurung, R. A. R., Ansborg, P. I., Alexander, P. A., Lawrence, N. K., Johnson, D. E., (2008). The state of the scholarship of teaching and learning in psychology. *Teaching of Psychology, 35*, 249-261. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a905077001>

Abstract: Many members of the academy have tried to broaden the construct of scholarship to include activities that investigate pedagogy and student learning, the scholarship of teaching and learning (SoTL). Halpern et al. (1998) first established such a definition for the field of psychology. This article reports on a Society for the Teaching of Psychology (APA, Division 2) task force national survey assessing the state of SoTL in psychology. Although psychology has not globally embraced SoTL as legitimate scholarship, there are indications that the sentiment to do so is taking root. We conclude with recommendations about how the discipline can enhance its efforts to promote SoTL.

Gurung, R. A. & Schwartz, B. M. (2009). *Optimizing teaching and learning: Practicing pedagogical research*. Malden, MA: Wiley-Blackwell.

From the book's description: This book serves as a practical guide for instructors interested in improving their teaching, the learning of their students, and contributing to the scholarship of teaching and learning (SoTL). It explores the advantages and disadvantages of various pedagogical practices and present applications of SoTL using case studies from a variety of disciplines. For more information, visit <http://www.wiley.com/WileyCDA/WileyTitle/productCd-1405161795.html>



Halpern, D.F., & Reich, J.N. (1999), Scholarship in psychology: Conversations about change and constancy. *American Psychologist*, 54, 347-349. Retrieved from <http://psycnet.apa.org/journals/amp/54/5/347/>

Abstract: Mounting pressures on higher education led the Task Force of the Society for the Teaching of Psychology to propose changes in the way the work of faculty is defined and in the criteria used to identify scholarship (D. F. Halpern et al., 1998). Prominent psychologists representing undergraduate universities, research institutions, and professional schools of psychology contributed commentary on the proposals in the Task Force Report. Although there was disagreement concerning some of the recommendations made by the Task Force, there was general agreement on the need to reflect on the roles and rewards of psychology faculty, with special emphasis on the diversity of institutional missions and faculty needs and abilities.

Smith, R. A. (2008). Moving toward the scholarship of teaching and learning: The classroom can be a lab, too! *Teaching of Psychology*, 35, 262-266. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a905075871>

Abstract: Division 2 of the American Psychological Association was practicing the scholarship of teaching long before Boyer (1990) coined the term, but Boyer brought the idea to academe's consciousness. Over time, however, the scholarship of teaching and "scholarly teaching" have become confused. Based on Richlin's (2001) work, I attempt to resolve this confusion by equating the scholarship of teaching with scholarly work by faculty. In addition, I point out the parallels between assessment and the scholarship of teaching and learning (SoTL) and provide tips for faculty who want to engage in SoTL research but see roadblocks in their way.

Tomcho, T. J., & Foels, R. (2008). Assessing effective teaching of psychology: A meta-analytic integration of learning outcomes. *Teaching of Psychology*, 35, 286-296. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a905077425>

Abstract: Teaching researchers can assess learning outcome effectiveness as a function of students' graded performance or changes in knowledge, skills and behaviors, or attitudes. We meta-analyzed 197 studies to determine the effectiveness of teaching activities in Teaching of Psychology (ToP) both overall and also as a function of type of learning outcome assessment. We found that, on average, studies evidenced a medium effect size across types of learning outcomes. Given the effectiveness of ToP teaching activities, researchers should address the (a) potential confounding role of teacher rapport, immediacy, and alliance in evaluating teaching effectiveness; (b) ethics of teaching activity development; and (c) appropriateness of using course grades to assess teaching activity effectiveness.

## Conferences on Assessment and SoTL

(For additional conferences, visit [http://www.kennesaw.edu/cetl/resources/na\\_conf\\_list.html](http://www.kennesaw.edu/cetl/resources/na_conf_list.html))

Assessment Institute (Indiana University Purdue University Indianapolis): <http://www.planning.iupui.edu/institute>

Atlantic Assessment Conference: <http://www.meredith.edu/rpa2009/aac/index.html>

International Society for the Scholarship of Teaching and Learning: <http://www.issotl.org/conferences.html>

SoTL Commons: <http://academics.georgiasouthern.edu/ijsoTL/conference/>.

Texas A&M Annual Assessment Conference: <http://assessment.tamu.edu/conference/>

## SoTL Journals

(For additional journals that publish SoTL research, visit <http://www.kennesaw.edu/cetl/resources/journals.html>)

International Journal of the Scholarship of Teaching and Learning: <http://academics.georgiasouthern.edu/ijsoTL/>

Journal of the Scholarship of Teaching and Learning: <http://www.iupui.edu/~josotl/>

MountainRise: <http://www.wcu.edu/facctr/mountainrise/index.html>

Psychology Learning and Teaching: <http://www.psychology.heacademy.ac.uk/s.php?p=55&menu=publications>

Teaching of Psychology: <http://www.tandf.co.uk/journals/authors/htopath.asp>

**D. Sustaining an Assessment Culture****1. Components of Effective Evaluation at the Department Level**

We summarize and provide links to articles that discuss principles of good practice principles in developing and maintaining effective departmental processes for assessment of student learning.

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### **Assessing Your Program-Level Assessment Plan**

Susan Hatfield

IDEA Center Paper #45, Kansas State University (2009)

Hatfield (2009) discusses responses to fourteen questions:

- Why are we doing assessment?
- What kind of plan are we writing?
- Who is responsible for assessment in our program?
- Is administration supporting of assessment?
- Is there a common language for talking about assessment?
- Have we identified *program-level* student learning outcomes?
- Does the plan rely on direct measures of student learning?
- Are the assessment methods appropriate to the outcomes?
- Is there a systematic approach to implementing the plan?
- What is the method for collecting and organizing the data?
- How are faculty trained to use assessment tools?
- Do the assessment tools distinguish among levels of achievement?
- What happens to the data after it has been collected?
- Have we used the data to improve learning and teaching?

This article is available at the IDEA Center site: [http://www.theideacenter.org/sites/default/files/IDEA\\_Paper\\_45.pdf](http://www.theideacenter.org/sites/default/files/IDEA_Paper_45.pdf)

### **Creating the Engaged Department**

Jon F. Wergin

from the Fall 2002 issue of *The Department Chair*

Wergin encourages faculty and departments to view their work in the larger context of their institutions, develop a sense of collective responsibility for delivering their curriculum, and design work plans for each faculty member that focuses on each members' contributions to the whole while acknowledging the high workload inherent in the role of a faculty member.

Available via the American Council on Education Web site: <http://www.acenet.edu/resources/chairs/docs/Wergin.pdf>

### **Evaluating Department Achievements: Consequences for the Work of Faculty**

Jon F. Wergin

from the December 1999 *AAHE Bulletin*

Wergin suggests the following as components of effective evaluation at the departmental level:

- Supportive organizational and cultural setting
  - A leadership of engagement
  - Engaged departments that ask very basic questions about themselves
  - A culture of evidence
  - A culture of peer collaboration and peer review
  - A respect for difference
  - Evaluation with consequence
- Flexible and decentralized policies and practices
- Clear evaluation criteria and standards

He also provides the following recommendations for good practice

- Be proactive in discussions of "quality"
- Decentralize evaluation to the maximum possible extent
- Recognize that evaluation is not for amateurs: Address the developmental needs of deans, chairs, and faculty
- Focus not just on enhancing collaboration and teamwork but on "organizational motivation"

Available via the American Association for Higher Education and Accreditation Web site:

<http://www.aahea.org/bulletins/articles/dec99f1.htm>

**D. Sustaining an Assessment Culture**

**2. Program Audit Measures**

Departments routinely must produce evidence to document the quality of their work. This entry summarizes both quantitative and qualitative measures that often capture evidence of the quality of department programs.

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**Program Audit Measures**

Bill Hill, APA Board of Educational Affairs Task Force on Psychology Major Competencies (2002)

In this section, we describe measures that are often components of a program review. Accrediting agencies, administration, legislators, or Regents or Trustees may explicitly request these data to reflect a program's viability and productivity, but do not always reflect aspects of program quality. These data should be considered as foundational to understanding the achievements of a department. However, programs may fare better by including other more direct measures of program quality. Care should also be exercised in creating data sets that might promote specious comparisons across programs.

**Primarily Quantitative Measures**

- **Analysis of Course Scheduling Patterns**
  - Average class size
  - Student credit hour production
  - Trends in course demand over time
  - Seat availability; backlog for required courses
  - Balance of required courses versus faculty special interest
- **Student Characteristics**
  - Number of majors, minors, service course users
  - To what extent is the student population diverse?
  - What is the gender balance of students?
  - Grade point average comparisons
- **Graduation Rates**
  - Ratio of graduates to upper division majors may be used to evaluate completion pace of majors
  - Degree completion rates: number of years
  - Attrition patterns
- **Faculty Characteristics**
  - Balance between full and part-time faculty
  - Percent of the faculty with tenure
  - Gender and diversity characteristics
- **Faculty Performance Indices**
  - Patterns of faculty workload
  - Average student evaluation ratings
  - Quantity of scholarly products
  - Dollars generated by grant activity
  - Number of service commitments to profession, community
  - Salary patterns
- **Program Resources**
  - Faculty: student ratio
  - Square footage assigned to program activities
  - Size of operating budget
- **Honors Achieved**
  - Student research presentation and service awards
  - Faculty recognition at local, regional, national levels
  - Program distinction conferred by professional organizations
- **Accreditation Status**
- **Analysis of Employer Needs and Demands**
  - Percent of student employed 6 months after graduation
  - Participation of employers in job fairs

**Primarily Qualitative Measures**

- Mission statement (including relationship to institutional mission)
- Strategic planning
- "Reputation" in academic community
- Quality of faculty performance in teaching, scholarship, and service
- Strength of external evaluations
- Curriculum quality (currency, innovation, coherence, relevance)

\* Programs may want to distinguish between students who are committed to the major restricting analyses to advanced students since the total major number may be influenced by students who are in transition to other majors.

## D. Sustaining an Assessment Culture

### 3. Quality Benchmarks in Undergraduate Psychology Programs for Assessing Student Learning

Dunn, McCarthy, Baker, Halonen & Hill (2007) proposed a set of quality benchmarks for conducting program reviews of undergraduate psychology programs. This section includes narrative and tables from that article that focus on assessment of student learning outcomes.

#### Source:

Dunn, D. S., McCarthy, M. A., Baker, S., Halonen, J. S., & Hill, G. W., IV. (2007). Quality benchmarks in undergraduate psychology programs. *American Psychologist*, 62, 650-670. Retrieved from <http://psycnet.apa.org/journals/amp/62/7/650/>

## Assessment Issues

Historically, higher education offered limited measures of accountability (Poindexter, 2003; Shavelson & Huang, 2003), but legislators, students, parents, and accrediting bodies now demand evidence of student learning (e.g., U.S. Department of Education, 2006). Often somewhat reluctantly, academic programs have begun to implement outcomes assessment (Angelo, 1999). Unfortunately, many of these assessment programs lack a coherent framework for evaluating the major as a whole (but see Halonen et al., 2002b). Although accountability to external constituents represents one important aspect of program review, optimal undergraduate psychology programs engage in the assessment process for the purpose of continuous self-improvement. Table 2 details performance distinctions for assessment issues.

**Assessment planning.** A proactive plan for assessment of program effectiveness begins with attention to university and departmental mission statements. Without a unified approach and a clear vision (Angelo, 1999), programs can fall prey to piecemeal assessments that do not capture the essence of student learning (Ewell, 1997). Consistent with the goals of the individual program, an effective program assessment plan will do more than merely satisfy external mandates. Assessment will be strengthened by a collaborative approach that includes faculty, students, and alumni (Wehlburg, 1999). All participants in the program can provide data concerning their satisfaction with the program and their perspective on its strengths and weaknesses. Halpern (2004) suggested surveying students, alumni, and employers. One measure of student satisfaction might be student evaluations of teaching (e.g., d'Apollonia & Abrami, 1997; Greenwald, 1997; Greenwald & Gillmore, 1997; Marsh & Roche, 1997; McKeachie, 1997); however, this measure addresses only one aspect of student satisfaction with the program. Students can also provide data concerning their perception of skills and abilities learned, career preparation, and their satisfaction with more global aspects of the program. The assessment plan should include ongoing measures of accountability for student learning and improvement of program effectiveness.

**Data gathering.** Ongoing data collection should be part of a program's culture (Hatfield, 1999). An effective plan is one that a program can achieve by identifying a limited set of goals (e.g., Allen, 2004) and continuously collecting data to measure the outcomes of these goals. A distinguished program would measure program effectiveness through a multimethod approach for continuous program improvement (e.g., periodic assessment of student learning in introductory, intermediate, and advanced courses). Ideally, these data would be publicly accessible (e.g., available on a department's Web site).

**Program improvement.** Collection of data without reflection or corrective feedback offers little in the way of program improvement. Minimal changes in programs often occur in developing programs that collect data to satisfy external mandates. Optimal programs purposefully examine data collected for program improvement purposes. A distinguished program regularly uses data for analysis and improvement.

**Program promotion.** Programs that have demonstrated improvement should promote their accomplishments. Such promotion, for example, can attract and retain students and faculty, invigorate institutional interest in a program, potentially solicit support from alumni donors or other funding sources (e.g., granting agencies, foundations), and create positive "town and gown" connections between colleges and the communities in which they reside. Personnel in developing or underdeveloped programs may disassociate themselves from the chore of good public relations, but effective and distinguished programs publicize their improved student success.

<b>ASSESSMENT ISSUES DOMAIN</b>				
<b>Issue</b>	<b>Underdeveloped</b>	<b>Developing</b>	<b>Effective</b>	<b>Distinguished</b>
<b>Assessment planning</b>	Does not engage in assessment planning; demonstrates no proactive thinking about program effectiveness	Generates minimal assessment plan to satisfy external mandate with no intention of follow-through	Accommodates external mandates but focuses on getting legitimate evidence about program quality	Engages proactively about program effectiveness through continuous, vigorous, and consensual assessment planning
<b>Data gathering</b>	Does not gather minimal effectiveness data	Gathers limited range of data only when externally mandated; relies on sources of data external to the department	Gathers broad range of data on semiregular basis and analyzes periodically as required	Collects and analyzes range of data continuously to answer program quality questions; multiple methods and sources may include student and alumni input
<b>Program improvement</b>	Makes changes in program based on whim or personal agenda rather than program effectiveness data	Makes changes in program that minimally link directly to program effectiveness data	Improves program based on data analysis of program effectiveness prompted by external mandates	Regularly improves program based on systematic data analysis prompted by faculty-owned assessment process
<b>Program promotion</b>	Does not use assessment data in public relations, outreach activities, and resource requests	Reacts to program promotion opportunities with haphazard use of assessment data	Incorporates some elements of program effectiveness data in program promotion activities	Integrates assessment practices into program promotion activities to enhance program

<b>STUDENT LEARNING OUTCOMES DOMAIN</b>				
<b>Outcome</b>	<b>Underdeveloped</b>	<b>Developing</b>	<b>Effective</b>	<b>Distinguished</b>
<b>Writing skills</b>	Requires no systematic writing projects	Offers writing projects consistent with individual faculty commitment to writing in some courses	Develops writing skills through limited requirements in targeted classes (e.g., may include foundation or writing-intensive courses)	Implements systematic developmental plan for required writing (e.g., all senior-level courses are writing intensive)
<b>Speaking skills</b>	Does not provide systematic opportunities for developing oral abilities	Provides haphazard opportunities consistent with individual faculty commitment to develop oral abilities	Implements limited formal or informal opportunities to develop oral abilities	Requires developmental oral performances to facilitate oral skills that may culminate in presentations in professional contexts
<b>Research skills</b>	Provides no systematic opportunities or support for student scholarship	Offers selected elective opportunities (e.g., research team) for motivated students but minimal mentorship of students	Incorporates variable research experience as part of the curriculum that accommodates student skill and motivation levels	Requires scholarship from all majors as a performance obligation that integrates content and skill
<b>Collaborative skills</b>	Offers no systematic instruction or opportunity related to collaborative work	Facilitates opportunities but fails to provide instruction or feedback to facilitate collaborative skills	Provides some training in and feedback for improvement in collaborative skills	Embeds multiple required collaborative activities supported by sound preparation and developmental feedback
<b>Information literacy and technology skills</b>	Does not facilitate students' effective use of information literacy and technology	Provides limited exposure to technology, usually in the context of a single course	Requires experience in multiple contexts to develop a minimum set of technology and information literacy skills	Facilitates refined and creative use of technology and information literacy for professional activities through systematic learning opportunities

## Student Learning Outcomes

The APA Task Force on Undergraduate Major Competencies (Halonon et al., 2002a) provided guidelines for structure of the undergraduate major. Programs should demonstrate that they are providing students with developmentally appropriate writing, speaking, research, collaborative, and technology opportunities. Table 3 describes the range of performance in student learning outcomes.

**Writing skills.** Psychology programs in liberal arts colleges have historically valued writing as an essential component of an undergraduate degree. Despite the importance of writing, few programs clearly articulate mechanisms to ensure the competence of student writing (Dunn, 2006). For example, although a program may include writing as an important goal, frequently there is no systematic plan to ensure that students engage in discipline-specific writing tasks.

Programs functioning at a minimal level require at least one “writing-intensive” course. Outstanding programs provide a systematic plan for developing writing skills by offering more than one writing-intensive course and by integrating other writing-related activities (e.g., APA style, outlining and drafting, online searching using PsycINFO) into several courses in the curriculum. Several innovative liberal arts schools have implemented sequenced writing intensive programs (Hillard & Harris, 2003; Wolfe & Haynes, 2003). Wolfe and Haynes acknowledged the difficulty of assessing development in writing and presented a model for linking the general education core with psychology. The critical element of their program is a sequencing of writing experiences; the drawback is the labor-intensive effort devoted to the project.

**Speaking skills.** Many programs provide students with opportunities to develop speaking skills through informal mechanisms (e.g., oral reports in class). A distinguished program emphasizes the importance of speaking skills and provides opportunities for all students to present their work in a public setting (e.g., an undergraduate psychology conference, a classroom symposium). Students would also be encouraged to participate in professional conversations that might be available in a structured seminar course.

**Research skills.** Seymour, Hunter, Laursen, and Deantoni (2004) provided strong support for enhancing communication skills in students who participate in undergraduate research. A unified and coordinated effort to offer authentic, engaging undergraduate research experiences is essential. These experiences might begin with students working closely with a faculty member to assist in research that has already been established, but with discrete responsibilities assigned to the student. The ideal culmination of the experience would result in a student-directed independent research project, an honors thesis, or a similarly engaging research activity.

**Collaborative skills.** In addition to a program that provides students with skills-based research opportunities, students should also be provided with collaborative learning opportunities that mirror professional experiences. Recent advances in the study of collaborative learning (Springer, Stanne, & Donovan, 1999) suggest that collaborative experiences enhance learning and improve sociobehavioral skills. Although Springer et al. concluded that collaborative learning is beneficial for students in science, mathematics, engineering, and technology (STEM) fields, use of this technique and empirical support for this approach is neoteric. Collaboration is an essential skill that students should demonstrate at the completion of a degree insofar as it is possible to do so, and therefore programs should systematically provide structured collaborative activities (Thompson, Vermette, & Wisniewski, 2004).

**Information literacy and technology skills.** Technology plays a critical role in virtually every discipline (Laird & Kuh, 2005). Merriam, LaBaugh, and Butterfield (1992) proposed minimum training guidelines for instructing psychology students. The Association of College and Research Libraries offers psychology-specific outcomes that include (a) developing a research plan, (b) identifying keywords and related terms, (c) carefully selecting terms relative to the database, and (d) using appropriate commands (e.g., Boolean operators). McCarthy and Pusateri (2006) offered psychology-specific student learning outcomes for information literacy. In addition to traditional information literacy skills, we suggest that programs consider the role of technology in the professional development of students. Students should be provided with opportunities to become technologically literate (e.g., about statistical software). Distinguished programs ensure that students are provided with opportunities to develop technological expertise that generalizes beyond the university.

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**D. Additional Resources on Assessment****4. Resources for Program Review of Undergraduate Programs in Psychology Departments**

We identify Web sites and articles that departments may consult when preparing self-study reports for program reviews.

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 Note: *Italicized descriptions are summaries written by the authors of the Assessment Cyberguide.*  
 Descriptions in plain text are verbatim from the source.

**Web sites**

Departmental Consulting Service: <http://teachpsych.org/otrp/deptconsult.php>

Description from the Web site: The Departmental Consultant Service (DCS) is a service offered to psychology departments through the joint efforts of the APA Education Directorate and the Society for the Teaching of Psychology (STP). Developed in response to an increasing need for evaluations, the consultant service provides departments of psychology with a list of qualified consultants who will provide feedback that will enable them to improve their programs.

Profiles of undergraduate programs in psychology: [http://www.apa.org/ed/pcue/profiles\\_intro.html](http://www.apa.org/ed/pcue/profiles_intro.html)

*The Education Directorate of the American Psychological Association reports the result of a survey of undergraduate departments of psychology conducted from 2003 through 2005.*

**Articles**

Association of American Colleges. (1992). *Program review and educational quality in the major: A faculty handbook. Vol. 3 of Liberal learning and the arts and sciences major.* Washington, DC: Author. ED342295

*Drawing upon an earlier Association of American Colleges and Universities report, The Challenge of Connecting Learning, this handbook summarizes 13 characteristics of strong undergraduate programs and provides a framework for program review and assessment based upon these characteristics. For more information, visit <http://tinyurl.com/AAC1992ProgramReview>*

Baum, C., Benjamin, L. T., Bernstein, D., Crider, A. B., Halonen, J., Hopkins, J. R., McGovern, T. V., McKeachie, W. J., Nodine, B., Reid, P. J., Suinn, R., & Wade, C. (1993). Principles for quality undergraduate psychology programs. In T. V. McGovern (Ed.), *Handbook for enhancing undergraduate education in psychology* (pp. 17-20). Washington, DC: American Psychological Association.

*Baum et al. outline a set of principles that characterize quality undergraduate psychology programs that are organized in three categories: students, faculty, and curriculum. For more information, visit <http://books.apa.org/books.cfm?id=4313050>*

Doll, P. A., & Jacobs, K. W. (1988). The exit interview for graduating seniors. *Teaching of Psychology*, 15, 213-214. Retrieved from <http://www.informaworld.com/smpp/content~db=all~content=a785860109>

Abstract: The practice of holding exit interviews with students graduating from a medium-sized university is described. Such interviews provide unique data unavailable from other sources.

Dunn, D. S., McCarthy, M. A., Baker, S., Halonen, J. S., & Hill, G. W., IV. (2007). Quality benchmarks in undergraduate psychology programs. *American Psychologist*, 62, 650-670. Retrieved from <http://psycnet.apa.org/journals/amp/62/7/650/>

Abstract: Performance benchmarks are proposed to assist undergraduate psychology programs in defining their missions and goals as well as documenting their effectiveness. Experienced academic program reviewers compared their experiences to formulate a developmental framework of attributes of undergraduate programs focusing on activity in 8 domains: curriculum, assessment issues, student learning outcomes, program resources, student development, faculty characteristics, program climate, and administrative support. A continuum of performance was conceptualized for each attribute in each of the domains to characterize underdeveloped, developing, effective, and distinguished achievement for undergraduate programs. The authors hope to inspire a national conversation about program benchmarks in psychology in order to improve program quality, encourage more effective program reviews, and help optimally functioning programs compete more successfully for resources on the basis of their distinguished achievements.

Levy, J., Burton, G., Mickler, S., & Vigorito, M. (1999). A curriculum matrix for psychology program review. *Teaching of Psychology, 26*, 291-294. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785863015>

Abstract: Program review and outcomes assessment have become institutionalized as processes to promote accountability for most psychology departments. It is frequently problematic to demonstrate the relation between the content coverage and assessment taking place in individual courses and the broad curricular goals and objectives. We describe a matrix depicting the relation between desired perspectives, skills, knowledge, and attitudes and an undergraduate psychology curriculum to address this problem. Such a matrix is valuable to detect critical omissions or unnecessary redundancies, to examine the consistency across sections of individual courses in covering instructional objectives, and to compare faculty and student impressions of course and curricular coverage.

McGovern, T. V., & Carr, K. F. (1989). Carving out the niche: A review of alumni surveys on undergraduate psychology majors. *Teaching of Psychology, 16*, 52-57. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785864510>

Abstract: Information about psychology majors' activities after graduation is an important ingredient in the evaluation and renewal of undergraduate programs. In this article, we review the survey research on psychology alumni, analyzing the various survey objectives, samples, results, and program implementations. Based on this review, we make recommendations about the design of future studies, the role of APA's Educational Affairs Office, and the use of life-span development theory and methodology to refine future alumni research in undergraduate psychology.

Messer, W. S., Griggs, R. A., & Jackson, S. L. (1999). A national survey of undergraduate psychology degree options and major requirements. *Teaching of Psychology, 26*, 164-171. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785863497>

Abstract: We examined the catalogs of a random sample of 292 national and regional universities and liberal arts colleges to collect curricular data on the prevalence of focused specialty versus general degrees in psychology and on the course requirements for the various degree options. We analyzed the data by type of degree and institution. Requirements for the various psychology majors were in general agreement with recommendations by the curriculum committee of the recent St. Mary's Conference. We also found that a substantial number of schools offer options other than general degrees. Given trends such as rising undergraduate enrollments and concern for career relevance and job preparation, we believe that the number of these alternative degree options may increase in the future.

Perlman, B., & McCann, L. I. (1999). The structure of the psychology undergraduate curriculum. *Teaching of Psychology, 26*, 171-176. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785863498>

Abstract: A review of 500 college catalogs for 4 institutional types found the modal undergraduate psychology program follows the traditional model. It is taught in the liberal arts tradition as recommended by the St. Mary's Conference (Brewer et al., 1993), balancing natural and social science content. The major typically requires 34 credits including introductory, statistics, and a capstone course (either a senior seminar, colloquium or history); at least one content course; and limited laboratory experience. It neither necessarily requires the integrative capstone course nor psychometric methods courses recommended by the St. Mary's Conference. Prerequisites for methodology and capstone courses are limited.

Perlman, B., & McCann, L. I. (1999). The most frequently listed courses in the undergraduate psychology curriculum. *Teaching of Psychology, 26*, 177-182. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785863499>

Abstract: Continuing research with a 60-year history, we read 400 college catalogs and identified the most frequently listed undergraduate psychology courses for 4 institutional types. Results suggested ongoing segmentation in the research methodology and developmental areas, with an increasing number of courses listed in each. Experimental content courses (e.g., experimental, biological), clinical (e.g., abnormal, personality), and social/developmental courses are listed with about equal frequencies, and no movement toward additional vocational content is evident. We noted emerging interdisciplinary areas and courses.

Perlman, B., & McCann, L. I. (2005). Undergraduate research experiences in psychology: A national survey of courses and curricula. *Teaching of Psychology, 32*, 5-14. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785856796>

Abstract: We surveyed departments nationally to better understand the extent of scientific opportunities and experiences for undergraduate psychology students. Results showed intradepartmental variability, but overall students can expect 7 courses that offer research experiences in the typical psychology curriculum. Nonetheless, research is often not the primary course focus; some students must wait until their junior year to take such a course, and most such courses are elective, not required. We discuss implications for departments' curricula and the goals and outcomes for undergraduate education as well as future research directions.

Pusateri, T. P., Poe, R. E., Addison, W. & Goedel G. D. (2004). Designing and implementing psychology program reviews. In D. S. Dunn, C. M. Mehrotra, & J. S. Halonen (Eds.), *Measuring up: Educational assessment challenges and practices for psychology* (pp. 65-89). Washington, DC: American Psychological Association.

*Discusses the purpose of program review and makes recommendations for preparing a self-study, scheduling a review by an external consultant, and following up on the reviewer's report. For more information, visit <http://books.apa.org/books.cfm?id=4318011>*

Quereshi, M. Y. (1988). Evaluation of an undergraduate psychology program: Occupational and personal benefits. *Teaching of Psychology, 15*, 119-123. Retrieved from <http://www.informaworld.com/smpp/content-db=all-content=a785861725>

Abstract: A 30-item questionnaire completed by 272 psychology graduates from Marquette University, between May 1972 and May 1983, provided an updated evaluation of the undergraduate program. This study investigated (a) differences between male and female graduates, (b) graduates' evaluation of the psychology curriculum and faculty, and (c) occupational benefits of the psychology major for those who pursued graduate work in psychology or professional fields and for those who sought employment with the terminal bachelor's degree. Results of this study are compared with those of other alumni surveys published between 1961 and 1987.

Vigorito, M. (2008). *An electronic workbook for assessing the Dunn et al. (2007) Quality Benchmarks in Undergraduate Psychology Programs*. Office of Teaching Resources in Psychology Online. Retrieved from: <http://teachpsych.org/otrp/resources/resources.php?category=Outcomes>

*Provides electronic worksheets by which faculty can enter data relevant to the domains and criteria in Dunn et al.*