Assessment Process for 2006-2007

As in the past, the Psychology Department assessment process consisted of an on-line survey administered to graduating senior psychology majors in the Spring, individual assessment efforts by instructors within selected courses, and our annual faculty assessment retreat. This year, we took a somewhat different approach to the retreat and individual assessment efforts. Instead of focusing broadly on several goals for student learning, we focused primarily on the topic of APA style and scientific thinking and writing (goals B and C for student learning from the list attached). Individual faculty members geared their individual assessment efforts to this topic, and our retreat included two presentations on issues related to scientific writing that guided our discussion: 1) Cathy Hale presented student data on the topic of creativity in APA-style writing, and 2) David Moore presented developmental models of learning focusing on their application to psychology majors. The retreat was held on Tuesday, May 15, 2007, at Forza coffee shop in Tacoma. We also continued to update our alumni database where we record information on graduate education and employment. A list of goals for student learning, minutes of the assessment retreat, a summary of senior survey results, and handouts describing findings from individual assessment efforts appear on pages attached.

Summary of Findings and Responses to Assessment

Specific findings are summarized in detail in the reports attached. The senior survey revealed some similar findings compared to previous years, and some areas of improvement. For example, students’ ratings of Psi Chi and Psych Club activities were more positive than last year, but still low. As in the past, students evaluated teaching quality, care and concern very high, and diversity lower, and they continued to report concerns with the internship class. Comments about the 201/301 sequence were generally positive. Other concerns noted related to the rigor and quality of adjunct teaching, PSYC 101, PSYC 492, limited options for lab electives, and advising. At the retreat, rather than taking turns making individual reports as in the past, faculty members discussed APA style generally. Some individual reports were shared during the discussion and some were shared only in writing. Cathy’s presentation included data comparing views of APA style by sophomore and senior majors. Findings suggested that compared to sophomores, seniors were much more positive about APA style and viewed it in a more sophisticated way. Dave’s presentation on developmental issues focused on the differences between what students are capable of doing alone versus with support. He also emphasized the importance of repetition, practice, and scaffolding.

Discussion of these issues and findings at the retreat led to several action plans. Sub-committees (e.g., 101, 492) will continue to meet to discuss the student feedback and course structures in more detail. Adjunct and visiting faculty will be included in PSYC 101 discussions. The sub-committee on developmental progress in the major plans to continue meeting and will focus on the 201/301 sequence as well as other issues. Another subcommittee plans to evaluate students’ internship experiences and will try to build our list of internship sites as a resource for students. To address concerns about options for lab electives, we are continuing to explore the possibility of converting PSYC 310 (Fundamentals of Clinical Neuropsychology) from an elective course to a lab elective. Discussion of issues raised will continue next year in the context of planning for at least three faculty searches.
List of Appendices

A) Departmental goals for student learning
B) Summary of senior survey results
C) Minutes of the assessment retreat
D) Handouts describing findings from individual assessment efforts

Appendix A

Goals for Psychology Students. The department places heavy emphasis on educating students to be well-rounded individuals, knowledgeable about the discipline of scientific psychology. A comprehensive understanding of the field requires research training, critical analysis of psychological theories and research, and the ethical application of scientific knowledge. Within the context of a broad liberal arts education, our mission is to help students of psychology develop:

A. **a breadth and depth of understanding of the content of psychology**, including familiarity with the major concepts, theoretical perspectives, empirical findings and historical trends within the academic field;

B. **an ability to think scientifically**, including constructing arguments, analyzing and interpreting data, reading and critiquing different forms of scientific writing, and evaluating ethical issues and scientific standards;

C. **an ability to express ideas effectively, both orally and in writing**, within the discourse of the discipline;

D. **an appreciation for and understanding of multiple perspectives**, including socio-cultural, international, and individual differences as well as interdisciplinary and sub-disciplinary connections among different ways of knowing and across basic and applied approaches to the social and natural sciences; and

E. **characteristics valuable for personal development and effective civil engagement**, including the abilities to think critically, to work independently as well as collaboratively, to solve problems effectively, to act ethically, and to apply academic knowledge to real-world problems.
**Appendix B**

**Summary of Senior Survey 2007 Findings**
(N = 37 out of 53 solicited. 70% response rate)

**Major Points and Suggestions**

1. **Adjunct quality control:** For Psych 101, as well as other courses (e.g., 200), students mentioned that adjunct faculty did not teach the course particularly well, noting in places that it was too easy/felt like a high school course.

2. **101:** We may want to revisit the overview component of Psych 101. Might there be another way to give students the breadth without the superficial, rapid treatment of topics?

3. **492:**
   - Students perceive the sections of this course to require very different papers. They have the expectation that the sections of the course will have equal requirements and are bothered by the fact that they do not.
   - The various elements of the course (paper, presentations, writing assignments) still do not seem well integrated for some students.

4. **Lab options:** Need to ensure that students have more than 341 and 360 as laboratory course options.

5. **Advising:** Roughly 1/3 say that they would like more advice and support
   - a. In as much as we’re able, it would be helpful to inform students as to the schedule of when various elective courses will be offered.
   - b. Students are still unaware of research opportunities and internships. They say that they need to be made aware of them earlier in their careers and need more help in securing them. Continued “advertising” through the colloquia is another avenue.

6. **Co-curricular:** Psych Club and Psi Chi are still struggling. Students want these organizations to be better organized and more active.

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**Senior Survey 2007: Summary of Qualitative Remarks (N = 37)**

1a. **Psychology 101:** To what extent did Psychology 101 provide a useful overview of the field? What were the overall strengths and weaknesses of the course?

   Bimodal reaction: About half really liked the course; was reason for declaring psych as a major. Were engaged and interested in the material. The other half report a negative reaction: thought the overview was much too broad and that the course moved too quickly. About 4-5 mention that their visiting professor was not a good instructor; about 4-5 didn’t take the course here.

2a. **Psychology 201-301:** What are the strengths and weaknesses of the required Psychology 201-301 sequence? What changes, if any, would you recommend to the courses or to the requirement?
By and large, most students had very positive remarks about the 201/301 sequence. They see them as being foundational to the major, and many report liking the research aspect of the courses. Even among those who said the class was “dry”, they comment that the material was essential. About 5 thought that one semester was sufficient, and a handful complained about the math involved. One student said that s/he wanted higher level stats courses to be offered.

3a. **Laboratory Courses:** What are the strengths and weaknesses of the psychology laboratory electives (Psyc. 341, 360 and 371)? What changes, if any, would you recommend to the courses or to the requirement?

Most students had very positive things to say about particular courses finding them to be challenging and stimulating. About 8 mentioned that there needs to be more choice in the labs (specifically mention that the department needs to offer T&M in order to give students a choice.) Some students did mention that they were surprised by the workload for the lab courses. No pattern to the negative remarks.

4a. **Elective Courses:** What are the strengths and weaknesses of the elective courses you have taken? What changes, if any, would you recommend to the courses or to the requirement?

Most students reported that their elective courses were interesting and enjoyable. A handful of students (6-7) say that they wanted more variety in course offerings, and a couple mention problems with availability (e.g., ask that we offer “History of Psych” more often). Several students said they wished they could have taken more electives or would have been advised that they could/should take more electives. Negative remarks have no pattern, although one student did say that upper level electives should be more demanding.

5a. **Psychology 492:** What are the strengths and weaknesses of the senior seminar (Psyc. 492)? What changes, if any, would you recommend to the course or to the requirement?

Mixed reactions to course: Some loved it – thought that the assignments and structure of the course facilitated learning a great deal. Some enjoyed parts of the course (e.g., becoming comfortable with giving presentations, small course size, discussions) but disliked other elements (e.g., want more guidance in writing paper). Others, however, complain of the “busy work” and the lack of integration between course elements. Nonuniform standards for the paper requirements and, to a lesser extent other elements of the course, between pros / sections is seen as a big problem – students perceive the different standards as being very unfair and/or as resulting in a sub-par experience in some cases.

6a. **Major Requirements:** What would you recommend changing about the requirements for the major? (e.g., Are there classes that ought to be required but aren’t? Are there required classes that should be optional?)

No consistent theme. Some wanted specific courses to be required (e.g., history, neuropsych). Some mentioned only one semester of stats/ methods. Some said “more electives.” Many felt that the requirements were just right.

7a. **Class Size:** Are there courses where the class size (too large, too small, just right) added to or detracted from your educational experience?

Most said that class size was fine. A couple said that selected courses (e.g., 201, 301, 360) were a bit too large which interfered with asking questions and timely return of student work.

8a. **Course Offerings and Availability:** Were you able to enroll in the courses you needed or wanted? Are there courses that you would have liked to take that are currently not offered?

No real issues here – smatterings of courses mentioned, but no overall pattern.

9a. **Challenge, Rigor, and Depth:** Please comment on the level of challenge, rigor, and/or depth of coverage in courses in the major.
Most students report that challenge and rigor is appropriate. Major is seen as “hard” but not “too hard” and out of reach. Only one student said that the courses tended to be too easy.

10a. **Diversity**: How would you evaluate the treatment of issues related to race, ethnicity, and culture in the major? Where were these issues addressed well? Where was more or better treatment needed?

Students reported either that these topics were covered adequately and sensitively, or that they didn’t receive enough treatment/ didn’t apply to the class at hand. Only one student said that there was too much coverage. Some students pointed to the school’s demographic characteristics (primarily white, upper class student body) as a barrier to adequate coverage.

10b. **Diversity**: How would you evaluate the treatment in the major of other issues related to diversity such as those pertaining to gender, age, disability, socioeconomic status, or other social categories? Where were these issues addressed well? Where was more or better treatment needed? Are there other issues related to diversity that you want to comment on?

Comments to this question were similar to 10a (above). One student mentioned that sexual orientation should be included in the list.

11a. **Technology**: How would you evaluate the training in technology you have received in psychology courses?

Most remarks were positive. Students reported that they used Powerpoint, Excel, SPSS, and Blackboard. A number of students (about 1/3) said that they have forgotten how to use SPSS because they didn’t routinely use the software, but nearly all commented that they were adequately trained to use software. One or two said that they wished they had had more training in Excel and SPSS.

12a. **Co-curricular activities**: Did you participate in co-curricular activities related to the major such as departmental colloquia or psychology club or PSI CHI events? If not, why not? If so, what experiences did you find valuable and why? What additional events or opportunities you would like to see available for majors?

Most students reported that they had been involved with either Psych Club or Psi Chi; however, most of these same students were disappointed with these experiences. They said that the clubs didn’t do much and were poorly organized. Most students want this to improve, and a couple of students mention that faculty support would be helpful.

The colloquia, by contrast, were evaluated much more positively. Students said that they topics were helpful and the speakers were interesting. Of the students who didn’t attend, time conflicts were cited as the reason.

13a. **Internships**: Did you complete a psychology-related internship as part of your undergraduate career? If not, why didn’t you? If so, how would you evaluate that experience? Please comment also on the ease of finding an internship.

Of the 36 responses, only 8 said they had done, or were planning on doing, an internship. Comments about these experiences were very positive (e.g., it was rewarding, I learned a lot).

The students who did not seek internships often said it was because they were unaware of such opportunities until it was too late for them to work these experiences into their schedules. Students also said that finding internships was difficult, and they would like much more help from the department (or someone) in securing internships.

14a. **Research**: Did you get involved in research either as a research assistant or independent study experience? If not, why didn’t you? If so, how would you evaluate that experience? Please comment also on the ease or difficulty of acquiring research experience or research supervision.
8 of 36 students report that they had research experiences outside of class in our department; by and large, these experiences were positive – very positive. Of those who did not participate, lack of interest in research and being unaware of such opportunities were the two reasons cited. Two students also mentioned that there was a type of “elitism” that they perceived among those students who were “selected” by faculty to work on research projects.

15a. Advising: Please comment on the advising process. Consider the advice you received for the major, out-of-classroom opportunities, and future career or graduate school information.

Of the 31 remarks, 21 were very positive (advisor helpful, knowledgeable, approachable). 10 remarks were negative – fairly negative. Students said either that their advisor was somewhat detached (e.g., just gave me the code; not particularly helpful – I spoke with other profs instead), or that they needed more guidance from their advisor, particularly as related to long-term planning (e.g., could have used more support in terms of job availability, options and related suggestions). This ratio of positive to negative is similar to remarks in 2006.

16a. Department Faculty: As a whole, please consider the faculty in the department and comment on their teaching quality, support for student learning, degree to which they offer expertise in important subareas of the field and so on.

The vast majority “love” the psych faculty: the students think we care about them, are approachable, and are smart. Three students felt this way about “some” of the faculty. One student did want more of a “range” of faculty (?), and another student wished that we could develop courses in our areas of expertise rather than teach only entry level courses.

17. General Remarks: All in all, what is the single best and the single worst aspect about the major experience?

Best: Overwhelmingly, students thought that their interactions with faculty were the best experiences. A few others mentioned the development of certain skills (improved critical thinking) or class experiences (492, open discussions in class)

Worst: Inability to take a greater variety of courses (either b/c lack of time, didn’t fit in schedule, not offered) and the stats / biology courses were the 2 worst aspects mentioned most frequently.

18. General Remarks: Knowing what you know now, would you choose this major again? Why or why not? Is this answer a function of the field of study? The type of educational experience you’ve received? Something else entirely?

All but 3 said “yes”, and most did so enthusiastically. Of those who would not, one said that the material wasn’t interesting, one said s/he’d go the “medical route”, and one said s/he’d pick a major that would help secure a job in the “real” world, such as English, sociology, or communications (??!). A few students did mention that they would double major.

19. General Remarks: Use the space below for any other comments you want to make about the major, the department, class structure, and so on, or to continue an answer from a previous question.

Only 3 remarks: (1) hope the department can continue to grow (2) want to be able to create “tracks” within the major/ focus on specific area, (3) new building.

Senior Survey 2007: Summary of Quantitative Information
N = 37

1. Gender: 34 women, 2 men, 1 NA
   Frequency
   
2. Terms at UPS
   
   8 24
   
3. Study abroad: 15
   
   7 4
   
   6 2
4. 4 second majors (2 Spanish, 1 Business, 1 Religion)

5. 13 students with minors
   - 3 in CSOC
   - 2 each in Biology, Spanish, and Environmental Studies
   - 1 each in English, Exercise Science, Religion
   - 1 with two minors in Chemistry and French

6. Grad sch. plans Frequency
   - No 1
   - Not sure 3
   - Yes, eventually 23
   - Yes, next year 10

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*Wording was changed for 2007 for changes about major requirements and technology.

Some Correlational Findings: Students with higher Psychology GPAs tended to give more positive ratings for 201/301, major requirements, technology, research quality, and advising, and more negative ratings for internship quality (p < .10). Students with higher cumulative GPAs tended to give more positive ratings for major requirements, diversity, technology, research quality, advising, teaching quality and care and concern, and more negative ratings for internship quality (p < .10).
Appendix C
Assessment retreat minutes from 5/15/2007

Present: CJ, Robin, Lisa, Sarah, Cathy, Carolyn, Mark, Jill, Dave

Note: bold = proposed actions

Announcements

I. Faculty are unhappy with the timing of the OIS announcement that people had exceeded their mailbox space. The message was perceived as containing a threat. Clearing mailboxes required much effort at a very busy time of year. Procedure for backup was not clearly explained in message. Chair should draft letter to OIS expressing concern, and expressing faculty opinion that we need more space on the server.

II. Minutes from last faculty meeting were approved unanimously.

III. We can’t run microwave in kitchen while copier is plugged in; Robin proposed moving copier to 10a.

IV. Lisa wants to have a party at her house early in Fall.

V. Robin officially takes on chair duties in the beginning of July.

Assessment

I. Senior Survey Results
   a. 33 of 37 respondents say that they plan to go to grad school
   b. Students love teaching quality, care, concern
   c. Diversity still on the lower side
   d. Psi Chi still a low rating but has gone up a lot since last year
   e. Discussion of internships and research opportunities -- Weaker students rate internships higher than stronger students; stronger students rate research experiences higher than weaker students. Several students have expressed unhappiness with internship class. We may want to examine the current structure of the class. Lisa pointed out that the class draws students from all majors – hard to teach a class that works for everyone. It would be better to have an internship class within the department, or at least our own resource base and set of guidelines. New neuroscience program will develop an internship class that may be relevant. To do this in house need more faculty or lighter load – maybe leverage emphasis on civic scholarship and new building. We should ask Barry for a list of contacts re: internships. Need to get word out better to students re: internships via advising and/or colloquia. Jill suggests standing bulletin board in the department hallway listing research and internship opportunities. Regarding raising awareness of research, might require 201, 301 students to attend at least one research presentation. Or, have faculty give guest research presentations in 201. Sarah pointed out that there is less griping about 201 and 301 than in the past, indicating that faculty have been more attentive to giving research a “positive spin.” Sarah suggests all-department “research day.” Some discussion of possible progression of presentations across curriculum, e.g., poster in 201, oral presentation in 301, etc.
   f. Discussion of 492 – Sarah: mixed feelings among students – they feel that there aren’t uniform standards or requirements across sections. Hard for some students to see how different components of the course fit together. These issues need to be addressed. Lisa didn’t feel that comments were as negative as Sarah indicates. Feels department as a whole should come together to define a set of expectations. Cathy: We need a 492 subcommittee, probably sooner rather than later. Identify what our goals are, degrees of freedom, etc. Dave: Very much in favor of making course level (100, 200, etc) mean something in terms of our expectations regarding student skills. CJ: Maybe a poster festival for 201, 301 students, a presentation festival for 492 students. Carolyn: Subcommittee should have the goal of putting 492 expectations into writing. Sharing of syllabi may promote consistency without need for agreement on formal shared rubrics.
   g. Mark: How to increase “departmental memory” so that policy decisions, curriculum analyses, etc, don’t disappear from public knowledge? Dave, Jill: Maybe blackboard? Sarah: At each meeting should have a topic – shouldn’t stray from topic, assign
homework, come back and move forward – there’s something about our group style that doesn’t allow work to get done in a way that is satisfying to one another. More structured conversations might help to solidify decisions and progress. Dave: leave a few minutes at the end of each meeting for people to bring up unanticipated issues. Mark: Subcommittees seem to get work done -- Mark will take responsibility for organizing a 492 subcommittee to meet during the summer. Cathy: In her experience subcommittees have been most effective for initiating action. CJ: Once subcommittee in place, should continue rather than meet once. Robin: this could be the year of the subcommittee.

h. Discussion of 101 – Students feel that having an adjunct in 101 is not optimal because adjuncts aren’t seen as being fully in the fold of department, and not fully aware of departmental goals. Need to be sure to adequately educate adjuncts re: goals, expectation. Also questioned whether overview of field is desirable when so many students have already had a 101-type course. Maybe fewer areas, more depth? Dave: Need to do a better job of not making students take same class that they took in high school. Jill: In 101 subcommittee two years ago, came up with list of core topics that should be included in 101. More subcommittee work needs to be done prior to meaningful conversation. Carolyn: Mechanisms exist to place out of 101, need to inform students.

i. Discussion of advising – Sarah: Students report wanting more long-term guidance in advising rather than just what courses to take, e.g., planning career, or being aware of internship, research opportunities. This is consistent across the last 3 years. Dave: Would love to have more conversations with students about these issues, but only so much time in an advising appointment. Feels comments result from our structural system of advising. Lisa: Require advisees to have one meeting each year that is unrelated to course selection? Sarah: Bulletin boards, other mechanisms may reduce expectations regarding these aspects of advising. Robin: Colloquia are helpful for informing students about grad schools, other professional issues. Lisa and Jill will work together to organize colloquia next academic year.

APA in the curriculum

I. Cathy: Review of her work about creativity in APA style psychology papers.
   a. Basic findings
      i. Sophomores: Almost half said creativity just not allowed w/in APA format. Most of remainder felt it had to do with word choice, or how to engage reader, rather than original ideas, connections, and applications. They say they hate APA requirements, they are always scared to add their own creativity.
      ii. Seniors do feel that creativity plays a role – opinions start to approach those of faculty.
      iii. Peer writing advisors each in her own way talked about how psychology provides a way for approaching the world – framework for interpretation.
      iv. In 201 students are interpreting APA style as APA format.
   b. Ensuing discussion
      i. Mark: During sophomore year sort of a double load between learning to integrate and think creatively about scientific ideas, and having to learn a complex formatting system.
      ii. Cathy: Maybe too much emphasis in 201 on formatting, not enough emphasis on integrating and expressing ideas.
      iii. CJ: tension between structure and creativity, especially in 101 where students need to learn that they can’t just write “English papers.”
      iv. Sarah: Start in 101 with experiment writeups with very loose format rules
      v. Lisa: When students write, compose, edit, really distinguish between larger ideas, development of argument, etc, from the more refined level of rhetoric and wording, formatting. We should work with students on the logic of their arguments
      vi. Jill: Importance of expressing enthusiasm and spending time to educate students about the reasons, to make them understand that the rules aren’t arbitrary.
      vii. Mark: Maybe part of it has to be painful. Jill: Yes, but it might turn some people off to research early on. Maybe a way to do it effectively but not as painfully.
II. Dave: Discussion of developmental issues relevant to writing across the curriculum
   a. Summary of presentation
      i. Cognitive development during college years is measurable but modest
      ii. Important to understand that there is a marked gap between their ability to
          function with support versus on their own, and that this gap doesn’t go away, i.e.,
          with support may be one or two stages ahead of what they can do without support.
      iii. Typically easier to function when problems are closed-ended (correct answer, and
          a well-defined system for obtaining it) than when they are open-ended (involve
          integrating sources of information to come up with an educated judgment)
      iv. Progress requires a lot of repetition, opportunities for practice.
      v. Should provide scaffolding needed to distinguish open-ended from closed-ended
          problems; a lot of what we want them to get re: APA style is open-ended, but the
          formatting is close-ended.
      vi. Desirable to first provide foundational skills, and use as scaffolding for more
          advanced skills. Biggest mistake on part of educators is overestimating student
          abilities. Need to move them one step beyond where they are, rather than two steps.
          How can we design curriculum to fit students’ cutting edges, so by the time they
          reach 492 we have more systematically scaffolded? Additional important question:
          how to accommodate multiple skill levels? E.g., in 201- stats, method, critical
          thinking all at once. Need to think of ways that we are overshooting that lead to
          frustration; what are things that are falling through the cracks? We need to teach
          them to learn to use resources better.
      vii. Goal: To stop the reeducation in 301 of things already taught in 201 – how to
          provide scaffolding so that they are more truly independent in 301 than they were in
          201? May be desirable to slow down the early part of the semester in 201 so that it
          can match the trajectory that they are on, provide opportunities to really assess where
          the students are.
   b. Comments and discussion
      i. Lisa: Presentation points out importance of modeling thought process rather than
          just outcome of process
      ii. Sarah: formulaic; open-ended parts of 201, 301 are relatively easy for students
          (format, t-tests, etc) – open-ended parts (especially constructing good
          introductions) are harder, seem to benefit by repetition. She has observed that
          students really learn from their mistakes.
      iii. Several people pointed out that there is large variability in critical thinking and
          writing skills that persist through the curriculum. Can predict who is struggling
          in 492 from 201 performance. Need to reinforce basic skills throughout
          curriculum, and special attention is required in 201.

Action Items

   a. Robin: Wants to jumpstart Psyc101 subcommittee in part to talk about how to get
      students ready for 201. Also, to revise 101 project based on developmental
      considerations. Subcommittee should meet before start of semester.
   b. CJ: Wants to initiate research festival; would be happy to coordinate people to help
      this happen. Meeting should happen soon.
   c. Carolyn: Wants to be on a 201/301 committee where research day is part of a larger
      conversation. Would like committee to interact with 492 people.
   d. Dave: Will coordinate developmental subcommittee to help integrate appropriate
      scaffolding throughout curriculum.
   e. Jill: Will work with Cathy to identify community resources for internships and to
      develop a rating form to evaluate peoples’ experiences of their internships. As part
      of this will milk Barry for list of internship sites. Also plans to work with Lisa to
      put together colloquium schedule for the Fall. Finally, will serve on 201
      subcommittee.
   f. Cathy: Develop internships, be involved in set of subcommittees including 101,
      201/301, and 492. Also plans to investigate results and process of literacy survey.
      Would like to be part of a committee that specifically looks at the role of 201 in the
      curriculum.
   g. Sarah: If there are conversations where she may be helpful she is willing to attend
      meetings.
h. Lisa: Meet with 492 group, meet with faculty who teach clinically related electives to make sure not too much overlap, and help plan colloquia.

i. Carolyn: Develop issues of culture. Will continue to be voice of concern, bring ways to enhance treatment of and appreciation for diversity

j. Mark: Coordinate 492 committee, and create developmentally appropriate assignments for Psyc 341.

Final Comments

a. Robin: Faculty should be good models for health behaviors, could implement some policies – if any ideas (e.g., walking, etc) let her know.

b. Cathy: Could increase attention to sustainability, e.g., no more paper plates at departmental functions

c. Mark: We should all pay attention to following through on the actions we have planned.
Appendix D  
Individual Assessment Reports

Dave Moore and Jill Nealey Moore: 2007 Assessment Report

The following survey was given to the 2 sections of PSYC 201 offered Spring 2007 to assess scientific writing and thinking in the context of psychology research and APA writing style taught in this course. The following includes the actual survey questions administered (along with the instructions given to students on the survey), along with frequencies for the first, qualitative section of the survey and Means and Standard Deviations for the second part of the questionnaire. The results are based on a total of 21 students, reflecting data pooled from the two sections of the course. An examination of the particular responses received from the two sections revealed a fairly representative sampling from the course in terms of student performance (from very low, to medium, to high performing students).

Brief Survey on APA Writing: Results for 11 students pooled from the 2 sections of 201 offered Spring 2007

I am interested in evaluating your experience in the writing of your final paper, and your self-assessment of your research skills after completing this course. As a reminder, I won’t be taking your responses into account when I grade your paper, or assign grades for the class – I simply am asking for your name on this so I can match it up with the previous survey you completed in class. Given that, please be as honest and thoughtful as you can be in completing this questionnaire. (Really) As incentive for returning it to me, I’ll give you 2 extra credit points for getting to me by Monday morning (the 14th) at 10 am. Thanks in advance!

1. If you had to do it all over again, what would you do differently in the process of writing your paper? (e.g. procrastinated less, done more literature searches, asked for appointments with the writing center or your instructor, etc.)

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>More time doing literature searches/esp after 1st draft</td>
<td>9</td>
</tr>
<tr>
<td>Put more time into correcting draft after feedback</td>
<td>4</td>
</tr>
<tr>
<td>Talked with prof re lack of literature/ideas</td>
<td>1</td>
</tr>
<tr>
<td>Center for writing and learning</td>
<td>4</td>
</tr>
<tr>
<td>Sought more assistance from prof in writing/understanding R/D</td>
<td>3</td>
</tr>
<tr>
<td>Asked for additional assistance on SPSS</td>
<td>1</td>
</tr>
<tr>
<td>More time in class for RDA</td>
<td>1</td>
</tr>
<tr>
<td>Completed second draft of RDA/more drafts</td>
<td>2</td>
</tr>
<tr>
<td>More time/earlier working on the R/D/drafts in general</td>
<td>2</td>
</tr>
<tr>
<td>Not procrastinate as much</td>
<td>7</td>
</tr>
<tr>
<td>Look more at handouts/materials provided</td>
<td>1</td>
</tr>
<tr>
<td>Take a risk and ask for help!</td>
<td>1</td>
</tr>
<tr>
<td>More time with hypotheses &amp; how to deal with the data beforehand</td>
<td>1</td>
</tr>
<tr>
<td>Picked different topic (lack of significance, not enough background lit)</td>
<td>3</td>
</tr>
<tr>
<td>Done more analyses on data</td>
<td>1</td>
</tr>
<tr>
<td>Pay more attention to APA rules in the beginning</td>
<td>1</td>
</tr>
<tr>
<td>Misc note: APA guide confusing</td>
<td></td>
</tr>
</tbody>
</table>

2. What parts of the writing or research process were particularly hard or difficult to understand?

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to write results section (edits were different than what is in book,</td>
<td>10</td>
</tr>
<tr>
<td>hard to translate from SPSS, hard to not include interpretation,</td>
<td></td>
</tr>
<tr>
<td>doing the right tests)</td>
<td></td>
</tr>
<tr>
<td>Writing discussion (relating to previous rsch)</td>
<td>2</td>
</tr>
<tr>
<td>Writing the Intro (finding applicable articles)</td>
<td>3</td>
</tr>
<tr>
<td>Writing the Intro (unsure how to include sources)</td>
<td>3</td>
</tr>
<tr>
<td>Collecting and organizing supporting articles</td>
<td>1</td>
</tr>
<tr>
<td>Formulating an “OK experiment”</td>
<td>1</td>
</tr>
<tr>
<td>Finding relevant research</td>
<td>2</td>
</tr>
<tr>
<td>Understanding the concept of an organizing framework</td>
<td>1</td>
</tr>
</tbody>
</table>
All self-explanatory, but the “crunch” time at the end (last two weeks) was hard

*Helpful: having drafts so could “give it a try”*

3. What do you feel are the key elements of “APA Style” (that is, what is it?)

DM (PSYC 201A):
How to write a lab report

**FORMATTING**
A way to keep psychology papers concise and generally similar in style so readers know what to look for Details, but also to be as clear and concise as possible Neutral or scientific language, formatting, and a more structured type of scientific paper Including the correct amount of details when necessary, and to cite everything. Intrigue the reader with only including certain information and to make the research easy to read. Way of writing – not sure of key elements

Concise writing style that follows a set pattern. Each section must include certain things to fulfill the requirements for that section… each paragraph stating a certain point of fact but saving some of the ideas for later in the paper under different sections… APA style also requires a specific form for citing sources.

Simple concise writing

APA was made to keep the scientific community consistent so results, conclusions, methods, etc. are easy analyzed by other researchers

JNM (PSYC 201B):

APA is an organizational style that is concise and well documented. It tries to encourage critical thinking in the author and reader as well as make the paper easier to follow.

Writing in a different format. Important to take it step by step and jump through each hoop in order to write AP style well

APA is an efficient style in which to represent information and material so that others can effectively decipher what the author is saying

It is a way of reporting and analyzing findings so others can enjoy and understand it. It helps us to figure out what things mean and relay that to others

Um… it is… I can’t remember. But I know that we learned this in class…

It basically enables you to find whatever you are looking for in the paper easier. Like if you just want to know the implications of the research you’d go to the discussion, etc.

Key elements of APA style are specific to ways to present info so that everything is clear and organized. It is a way to present information in an educated manor that will help people understand and progress in the area.

It’s a format style that is uniform for psychology. It also calls for being concise and direct in the way you write.

APA style concentrates on presenting psychological information in a straightforward, scientific based format. It is a way of relaying research results to a diverse population in a format that is sensible and is relatively easy to follow.

The citations and the way things had to be explained. I do like the layout of it though, how there are particular sections within the main headings that address particular concerns or areas of the study’s procedure and analysis.

4. For the questions below, please use the following scale:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all well</td>
<td>Very little</td>
<td>Somewhat</td>
<td>Moderate</td>
<td>Quite a bit</td>
<td>Very much/very well</td>
<td></td>
</tr>
</tbody>
</table>

a. To what extent do you feel you know what needs to go in each section of the APA paper?  $M = 4.4$ ($SD = .6$)

b. To what extent do you feel comfortable with interpreting the results of analyses?  $M = 4.0$ ($SD = 1.3$)

   How about writing up the results of analyses?  $M = 3.9$ ($SD = 1.2$)

c. How well do you think you can identify confounds in published articles or reports of research?  $M = 4.3$ ($SD = 1.0$)
How about knowing which “problems” are serious confounds vs. those which just make results a little less certain? $M=4.2$ (1.0)

d. How equipped do you feel you are to critically evaluate research in the future? $M = 4.5$ ($SD = .9$)

e. To what degree do you think you can identify a useful study (that is, one that would be useful in building an argument in your paper) vs. one that doesn’t really apply? $M = 4.6$ ($SD = .8$)

f. To what degree do you think having an organizing framework helped you think about your project? $M = 5.0$ ($SD = .9$)

To what extent do you feel equipped to come up with an organizing framework for your research in the future? $M = 4.5$ (.7)

g. To what extent do you feel you could use more practice in: Finding relevant research ($M = 4.1$; $SD = 1.4$)
Constructing a balanced argument ($M = 3.5$; $SD = .9$)
Phrasing/word choice ($M = 3.6$; $SD = .9$)
Knowing what types of detail to include ($M = 3.9$; $SD = .8$)

Qualitative Analysis of Open-Ended Questions

The most common responses to the question about what students would “do differently” about their research paper, was spending more time on their literature searches (especially after the first draft), followed by “procrastinating less,” and seeking more assistance from the Center for Writing, Learning, and Teaching (CWLT) or the professor. Several students also reported that they would have picked a different topic (due to lack of significance or not enough background information). It is our sense that the latter comment about insufficient background research primarily reflects students’ difficulty (or lack of ability) with successfully conducting literature searches, as opposed to a true lack of research in the students’ chosen topic areas.

When asked what parts of the writing or research process were particularly difficult, students most frequently responded that they struggled with the Results section ($n = 10$), giving several reasons for this, including confusion about the appropriate statistical tests and difficulty translating results from SPSS. The second most frequent response to this question was difficulties with the Introduction section ($n = 6$), divided between difficulties findings applicable articles and confusion about how to include sources in this section. “Finding relevant research,” in general, (which likely applies primarily to the Introduction section but also other sections as well) was also listed by 2 additional respondents.

The responses to the 3rd question, “What do you feel are the key elements of ‘APA Style’ (that is, what is it?)” merits a bit more explanation. As noted above, the responses to this question are presented for the two different sections of the course separately. This is because Jill’s section (201B)—but not Dave’s section (201A)—received a writing workshop and pre-workshop questionnaire several weeks before the end of the semester (in the 3rd week of April) specifically on APA style with questions prompting them to define APA style and describe the basic elements of this approach to scientific writing. Jill administered the questionnaire and then spent the rest of a class session discussing their responses and attempting to clarify misconceptions and help students see the “bigger picture” about APA style, including how this is a way of thinking and presenting information with a meaningful rationale and set of goals, rather than just a set of arbitrary, “nit-picky” rules for formatting papers. Although we do not have quantitative data to support this conclusion, it is our sense from looking at the qualitative data that the responses by the respective sections reflect a positive effect of the APA writing workshop that Jill gave to her class.

Although there were a few similar responses in both sections to this question, overall the responses by Jill’s students were more sophisticated and more reflective of a deeper understanding of APA style and its elements. Representative comments in this regard from Jill’s section include, “APA is an organizational style that is concise and well documented. It tries to encourage critical thinking in the author and reader as well as make the paper easier to follow” and “Key elements of APA style are specific to ways to present info so that everything is clear and organized. It is a way to present information in an educated manner that will help people understand and progress in the area.” This is in contrast to the responses from Dave’s section which (although there were a few responses that reflected decent understanding) included more simplistic responses, such as “FORMATTING,” and “way of writing – not sure of key elements.”

Correlation Analysis
For PSYC 201A, a set of Pearson $r$ correlations were run to determine whether students’ responses to select items on the quantitative questions were correlated with their actual performance on the final exam for the course. Specifically, student scores for specific questions on the exam that corresponded to the same course content assessed by several items on this brief survey were examined. Despite the small number of scores in these analyses ($n = 10$), several significant findings emerged.

In the first bivariate correlation analysis, students’ rating of their ability to write up results in APA format was positively correlated with students’ performance on the two final exam questions requiring them to write up a set of results (Independent-Groups $t$ Test) in APA style (just as they would in a Results section of an APA paper), $r(9) = .86$ and .87, respectively, $p < .001$. Students’ rating of their ability and comfort in interpreting results of statistical analysis was moderately positively correlated with their performance on the final exam question that assessed their ability to interpret SPSS output of an Independent-Groups $t$ Test, although the value did not quite reach statistical significance, $r(9) = .53$, $p = .115$. Students’ self-ratings of their ability to identify confounds in research reports was strongly and positively associated with their performance on the final exam question that required them to identify confounding variables and evaluate the internal validity of a research study, $r(8) = .93$, $p < .001$. Finally, students’ perception of their ability to distinguish serious from less serious confounds was also positively correlated with performance on this same exam question noted above, $r(9) = .71$, $p = .02$.

**Major Themes and Conclusions**

The results of these analyses revealed both encouraging and discouraging information, in regards to the Psychology 201 course and the goals of teaching scientific/critical thinking and writing.

**Encouraging Results:**
- At least for the content areas examined, students’ perceptions of their abilities moderately to strongly predicted their actual abilities in these area (as indexed by questions on the cumulative final exam for the course).
- This indicates that, by the end of the course, students (who had not yet received their grades for the final exam) were able to fairly accurately assess their own abilities.

**Discouraging Results:**
- Both the qualitative and quantitative responses indicated that students at the end of 201 still continue to struggle with many aspects of conducting and evaluating psychology research and writing APA papers.
- Students’ particularly reported low ratings to the item that asked about their perceived abilities at constructing balanced arguments in APA papers. Given that this is such a central aspect of critical thinking and writing, this finding suggests that we may want to focus more heavily and explicitly on this aspect of thinking and writing in the 201 course.
- In regards to the research process and writing, students continue to report struggling significantly with not only the Introduction section (which we expected) but also the Results section of an APA paper in particular.
  - Specific reasons given for difficulties in these areas reveal difficulties and weak skills particularly in the areas of:
    - conducting effective and thorough literature searches
    - knowing how to skillfully utilize references in an APA paper
    - putting in the necessary time to edit papers, and
    - taking the initiative to seek out available help from the professor and from the Writing Center.
    - conducting results and interpreting them
    - translating results from SPSS into their papers

Comment regarding Results section: Although we expected students to report problems with the Introduction section (since these consistently tend to be the weakest components of 201 students’ papers), we were somewhat surprised by the responses indicating difficulties related to the Results section. It is possible that these responses occurred partly because of a recency effect – they had just recently received feedback on their Results sections and had needed to work through problems
encountered in interpreting and presenting results for their group research presentations. However, we also think that these responses reflect the “stressed” and “hurried” nature of the course at the end of the semester, which means that considerably less time is spent on discussing and reflecting on the latter part of students’ papers (including the Results section), which may mean that some important concepts, as well as consolidation of student learning, may be “falling through the cracks” at the tail end of the semester.

Both Encouraging and Discouraging Results:
- Although students’ understanding of APA style and its elements seem to be lacking, preliminary evidence presented here suggests that utilizing writing workshops on APA style, designed to deepen students’ understanding of APA style (and the rationale behind it) may help.

Recommendations and Implications:
- These findings highlight the importance of potentially slowing the pace down in the 201 course to decrease the stressful, harried nature at the end of the semester, in order to free up more time and space to focus on some of the key elements of scientific thinking and writing that form the foundation of this course (and of thinking and writing in our discipline). Examples of key aspects to focus on include:
  o The basic elements of building an effective argument in an APA paper
  o Conducting effective and thorough literature searches.
  o Skillfully utilizing research evidence in APA papers (particularly the Introduction)
  o Conducting, Interpreting, and writing the Results section.

- We may want to consider implementing writing workshops on APA style (perhaps in collaboration with the CWLT and/or peer writing tutors) as a standard component of the 201 course.
Mark Reinitz Spring 2007 Assessment Project – Senior Survey on Research Writing and APA Format

I administered a very brief survey to a group of 24 seniors and 2 juniors about their attitudes towards APA format. There were six questions on the survey which are listed below along with a summary of responses.

1. On the following graph please indicate your attitude regarding APA format for each of the years that you have been in college (note: -3 was labeled “hate it” and +3 was labeled “love it”)

2. Why do you think that the graph has the shape that it does?

By far the most common response: Struggled at first, but now that I know it I like having a consistent format (21/26). Many pointed out that at first they wrote slowly because they “had to look in the manual for everything.”

A few students mentioned that using APA format has made them better writers.

Three mentioned frustration due to different expectations by different professors.

3. In your own words, what is the main purpose of APA format?

The two most common kinds of responses were that it is a useful way to organize information (16 responses, e.g., knowing where to look for specific information, helps ensure that everything is included, provides uniformity) and that APA format enhances clarity and communication (12 responses, e.g., helps present ideas clearly, concisely, in logical order; makes papers easy to read; enhances communication).

Six responses indicated that APA format constituted a format for citations.

Four people seemed to have very little idea about what the purpose was: three indicated only that it was a format for citations, and one responded “no idea.”
4. On a scale from 1 (just beginning) to 5 (mastery), please indicate how good you were at using the specific formatting rules of APA format (i.e., heading structure, citation format, etc) in each of your academic years.

Year (means are shown)
1 1.1 2 2.1 3 3.4 4 4.0

5. On the same scale, please indicate how good you were at understanding and effectively satisfying the specific purpose of each section of an APA-formatted paper (e.g., providing necessary background in the introduction, details regarding participants, stimuli, procedure, and design in the Method section, etc).

Year (means are shown)
1 1.2 2 2.0 3 2.9 4 3.8

6. Finally, please indicate how much you agree with each of the following statements on a scale from -3 to +3, where -3 means strongly disagree and +3 means strongly agree.

a. I am glad that my classes have focused so much on APA format. 1.3  
   (1 negative response; 19 positive responses)

b. Learning APA format is useful for fields other than Psychology. 1.2  
   (3 negative responses; 20 positive responses)

c. APA format is mostly a set of nitpicky rules. -1.3  
   (12 negative responses; 8 positive responses)

d. Concentrating on APA format detracts from my ability to focus on the content of my papers. -1.2  
   (18 negative responses; 6 positive responses)

e. APA format is a set of rules for explaining research in a logical way. 1.9  
   (0 negative responses; 25 positive responses)

Summary of major points

1. Student’s attitudes towards writing in APA format increases markedly with increasing experience. Most graduating seniors have strongly positive attitudes towards APA format. The most commonly reported reason for this is that they like having a consistent format.

2. Some students mentioned that different teachers have different expectations: it may be helpful to put more emphasis on the idea that different types of papers have somewhat different structures as well as different goals.

3. Most graduating Psychology majors indicate that the main purposes of APA format are to organize information and enhance clarity. However, 15% of respondents (4/26) thought that APA format was only a system for citing peoples’ papers or had no idea at all what the purpose was. It would be helpful to identify this small group of students early enough to remediate this problem.

4. Students report an essentially linear relationship between their facility at writing in APA format and their year in college.

5. The vast majority of graduating seniors report that they are glad that their classes placed so much emphasis on APA format, felt that the style they had learned was useful for writing outside of psychology, and agreed that APA format provides rules for explaining ideas in a logical way. Six students reported that focusing on APA format detracted from their ability to focus on content, and students were mixed regarding whether APA format was mostly a set of nitpicky rules.

6. The results indicate that we are mostly successful in providing an appreciation of and positive attitude towards APA format. However, there remains a minority of students who feel that APA format is mostly a set of unnecessary rules that interfere with their ability to write a good paper.
### What Strengths and Weaknesses do you see in students when they arrive in these courses?

A handful of students are able to write an essay, establish a thesis or roadmap and support it with examples (20%); This semester more students in this camp. Almost all students write clear and grammatical sentences, use some kind of paragraph and get the major structures in place for an essay. Most can think about an analytical framework, separately from the content of analysis; Very few read, think, take notes independently on the material with the expectation of speaking in class (20%).

Most students have great difficulty controlling and building an argument; this is most evident in the introduction and discussion sections; weak paragraph development; poor selection of quotes; weak transitional rhetoric.

A few cannot think at two levels simultaneously.

### What developmental goals do you have for students in this course?

I want students to improve their writing by learning to more effectively use examples, quotes and research evidence to support their ideas.

I want them to be more facile in comparing theories along several different dimensions. I want them to learn to pose their own questions based on what appears to be important and to be able to explain why the dimension for comparison is significant in relation to general questions about human behavior and personality.

I want them to be more responsible for their learning process and for initiating ideas.

The purpose of the course is to look at questions in the field of psychology, understand their significance along several dimensions (scientific, social, theoretical, ethical) and to recognize that research methods are selected in response to goals and constraints in the research environment.

Students are expected to improve in understanding research articles and to use these insights in designing a study.

Students are expected to develop their interest in an area through serious and deep reading of the literature in that topic.

Students are expected to initiate and develop discussions among themselves.
| What are ways in this course that you observe a discrepancy between the quality of thinking that students are able to exhibit when you are providing extensive support ("optimal level") versus when they are asked to perform tasks independently ("functional level")? | This is new material and our students feel hesitant to take the lead. However, when given repeated opportunities to test their ideas, a good 25% of the class tries to work independently, some of them with good success in making meaningful connections. Most students, without ongoing help will try to stay at one level of analysis in order to memorize the terminology of each theorist. Most students need a lot of encouragement and support in becoming independent | Most students seem to like the idea of creating a research proposal based on their interests. They need regular opportunities to discuss the project, their ideas about it, the roadblocks. Some need help thinking of research ideas; this kind of thinking doesn’t come naturally to them; these students focus on grades, doing what the professor wants and seek a good deal of guidance. All students have difficulty discussing methodology and statistics. They need ongoing support for brainstorming ideas and finding what works. Some are clearly more confident than others. Many students appear to feel ashamed about this and need extra support to keep trying. I remind all students that their goal is to understand their own work (not everything). |
My memory of persistent problems with APA style and scientific writing in PSYC 301 including Fall 2006 semester.

- Getting beyond summary/Weak topical sentences (e.g., Person studied topic.)
- Misuse/overuse of conceptual terms (e.g., bias, confound)
- Saying “research shows” without citing evidence
- Citing/relying on secondary sources
- Extracting relevant and complete evidence from complex articles
- Details of APA style (e.g., numbers, and/&, et al.)
- Clear and deliberate organization (particularly in the introduction)
- Conciseness (recognizing and eliminating “fluff”)
Christopher Jones: Assessment Report

Relevant observations from my Spring 2006 assessment report for PYSC 301

Most students can clearly articulate a research hypothesis, cite sources, and summarize empirical research. They have a much more difficult time linking background research to relevant arguments and articulating the reasoning related to their predictions. APA style was used for citations and references fairly well by the final report.

Psychology 101 Web Review Assignment

During my frequent informal discussions with students outside of class, I am routinely surprised by the apparent trust and faith that students put into the information that they find/receive/learn about on the internet. I realize it is naïve of me to be surprised by this, but after several years of these discussions, I still haven’t gotten over it. Because of this, for both Fall and Spring semesters I had all of my psychology 101 students complete assignments that asked them to evaluate the evidence for the effectiveness of products that they found online (see the attached assignment for Spring semester). The product that students chose to do their assessment on had to be targeting the set of topics that we had recently been discussing in class. Hence, during the first 3rd of the semester we talked about the brain and neurotransmission. So, a “memory enhancing supplement” that purported to increase neural transmission so as to facilitate enhanced memory abilities would be appropriate.

I had my Fall semester students do three of the evaluations spread throughout the semester (finding products related to the current topics). Based on Fall evaluations I limited this assignment to only 2 evaluations during the Spring semester. In addition to students getting exposure to a range of products that may have questionable evidence, another primary goal of the additional one or two assignments was to see if students were able to learn from their mistakes on the first assignment. It was important to me that students understand how to differentiate valid evidence versus questionable evidence that may be based on pseudoscience and I gave them feedback about this when it was an issue.

I had 57 students in Fall semester (15 of whom were juniors or seniors) and 53 students in Spring semester (12 of whom were juniors or seniors) who qualified for my comparisons (i.e., some only turned in 1 assignment). The disappointing result that comes from my comparisons is that there were no statistically significant differences between the first assignment and the second assignment for either semester. Average scores actually went down from assignment one to two during the Spring semester.

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<thead>
<tr>
<th>Assignment 1</th>
<th>Assignment 2</th>
<th>Assignment 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Semester</td>
<td>Avg=79%</td>
<td>84%</td>
</tr>
<tr>
<td>Spring Semester</td>
<td>Avg=87%</td>
<td>83%</td>
</tr>
</tbody>
</table>

I also examined whether this might be a cohort issue. I assessed whether the 12 juniors and seniors from Spring semester were better able to understand this critical thinking exercise. Of the 12 students, 7 of the students’ grades went down from assignment 1 to assignment 2.

The primary question that comes from this analysis is whether students are actually not learning how to critically evaluate evidence as they find it on the internet. While this analysis suggests that they are not learning this tool, these results are a bit misleading. As can be seen from the assignment, I provide quite a lot of structure for the assignment and I hold my students to the structure/guidelines. Typically, the points that are taken lost on this assignment are because students were not following directions accurately or completely. Hence, an alternative explanation for these results may be that they are simply indicative of the decreased ability of my students to follow directions and learn from these mistakes, not that they are not critically evaluating the evidence.

If anything, the results from a question on my final exam during Spring semester may be a better indicator of what they learned from these assignments. This question was worded as follows

“You’re eating lunch in the SUB with some friends and someone says, “you should try this herbal supplement to help with your memory for finals”. If you wanted to check the validity of this product, where would you look? In other words, what is the one type of evidence that is considered reliable and valid?”

Out of the 59 students who sat for the final exam, 49 (83%) students correctly answered that they would look for empirical evidence from peer-reviewed journal articles. If anything, that knowledge was my most important goal of the web review assignment.