



# Department of Psychology 2006-2007 Evaluation Report

Prepared by Heidi A. Wayment, Department Chair, with input and approval by the Department Assessment Committee (Steve Funk, Robert Till & K. Laurie Dickson). To be shared and discussed with Departmental Faculty on August 23, 2007 and posted on Departmental website on August 27, 2007. All components of this report will also be included in the Departmental Newsletter in the September/October and November/December 2007 editions.

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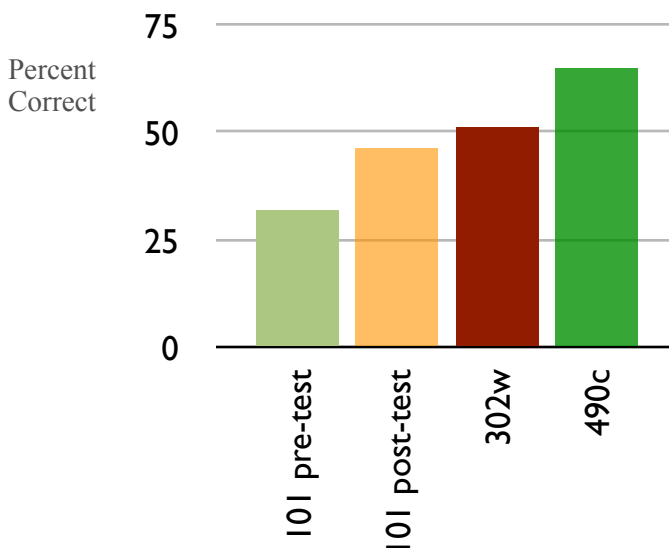
## Knowledge of Psychology Across Student Level



According to the Department of Psychology's Mission Statement, by the completion of the baccalaureate program, *psychology majors should demonstrate fundamental knowledge of the mental structures and processes that underlie individual human experience and behavior.* In order to assess whether students are making significant gains in fundamental knowledge in psychology, we administered a 25-item knowledge test (Thompson & Zampoanga, 2003) to students twice (beginning and end of semester) during their first NAU psychology course (PSY 101) and among upper division students and graduating psychology seniors enrolled in PSY 302w and in our required capstone course PSY 490c.

PSY 101 students completed the test during a mass pre-testing made available to them on-line on Experimentrak. Student took the test again (using identical test items) using the on-line Vista shell for their course. PSY 302w completed the test in the 2007 summer session. PSY 490c students from Spring 2007 were recontacted in the summer and completed

101 students, third- and fourth-year students in PSY 302w demonstrated incrementally greater knowledge about the fundamental concepts in psychology. The biggest gains were from pre-test PSY 101 students and fourth year PSY 490c students, with the senior level students scoring twice as high as the entry-level students.



Taken together, the knowledge survey appears to be documenting increases in fundamental knowledge of psychological concepts as a function of time studied. However, these results should be viewed cautiously given the cross-sectional nature of the data and the fact that PSY 101 students answered identical questions at both time points.

### Recommendations

Include knowledge test early in Fall and Spring semesters of PSY 101 students and again during the capstone courses, as is stated in our departmental Learning Outcome Assessment Plan (approved 2006). Consider alternate forms of the test to avoid duplication of questions.

Section	Mean	N
PSY 101: Fall 2006 pre-test	32.01	551
PSY 101: Fall 2006 post-test	46.32	412
PSY 302w: Summer 2007	51.2	17
PSY 490c: Spring 2007	65.32	17

the test. Results indicated two primary findings. First, PSY 101 students made significant improvement during the course of the semester. Table 1 shows an increase from the class average of 32.01 percent correct in the early weeks of the course to a average of 46.32% by the end of the semester. Second, as expected, compared to first semester PSY

## Written Expression Among PSY 302w Students



### *The Department of Psychology's Undergraduate Learning Outcome Assessment Plan calls for an assessment of effective writing in psychology.*

Therefore, all 302w students' major paper assignment (an APA formatted research report) are assessed at two time points during the semester. The purpose of this assessment is to gauge 1) quality of paper content, 2) organization of paper content, and 3) quality of writing mechanics. The "writing intensive" designation dictates that students have the opportunity to rewrite all or part of their report over the course of the semester.

### Analysis of Time One-Time Two Results

Data reported here represent 123 students from six of those courses (68 student in the Fall 2006 semester and 55 students in Spring 07 semester). Students' written research reports were rated on three dimensions: quality of content, organization, and quality of writing mechanics at two time points (T1 = time one; T2 = time two). Each assessment was made on a 5-point scale (1 = inadequate, 2 = weak, 3 = competent, 4 = strong, 5 = superior). Three broad categories of performance were created by combining scores 1 and 2 for an "inadequate/weak" category and scores 4 and 5 to form a "strong/superior" category. Analyses treating these scales as interval data were also used to compute paired-sample t-tests to

Content	T1	%	T2	%
Inadequate/Weak	31	25	6	5
Competent	31	25	32	27
Strong/Superior	60	50	83	68

Organization	T1	%	T2	%
Inadequate/Weak	27	22	8	7
Competent	36	30	25	21
Strong/Superior	59	48	88	73

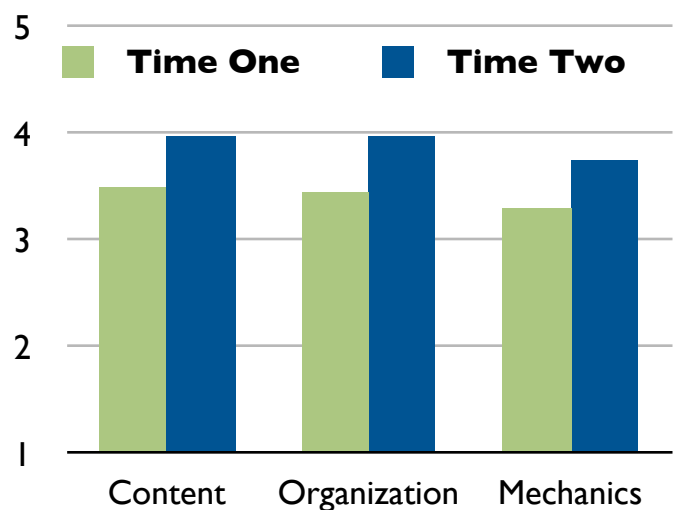
Mechanics	T1	%	T2	%
Inadequate/Weak	32	26	7	6
Competent	36	30	42	35
Strong/Superior	54	44	72	60

assessment mean levels of improvement from T1 to T2.

Chi-square tests confirmed that significant improvement over time was observed for all three evaluation categories. There were no gender or semester differences across these analyses.

**Summary.** As evidenced in the chart below, when considering the percentage of students that were competent or higher in each of the three domains under evaluation, it is clear that our student learning outcomes were met by the end of the course.

Students Competent or Higher			
	Content	Organization	Mechanics
Time One	75%	78%	74%
Time Two	94%	93%	93%



## Revised Assessment Measure

In order to provide more detailed information to student and faculty about where a student or class may need further instruction, and assess outcomes more closely aligned with our mission statement (information gathering, synthesis skills, and effective written expression), Dr. Wirtz pilot tested a revised assessment instrument in Fall 2006.

First, papers were rated on seven different components of an APA-style research report (Abstract, Introduction, Method, Results, Discussion, References, Tables/Figures). Next, papers were rated with general categories (Evaluation, Composition-APA, Composition-General, Content, Organization, and Synthesis). Each sub-category was assessed at two time points using a reworded 5-point scale (1 = poor, 2 = weak, 3 = moderate, 4 = good, 5 = excellent).

Chi-square tests revealed significant improvement over time for all categories. Students showed the most improvement on their reference and tables/

Abstract	T1	%	T2	%
Poor	5	13	2	5
Competent	28	70	15	25
Excellent	7	17	28	70

Introduction	T1	%	T2	%
Poor	2	5	3	5
Competent	32	69	11	27
Excellent	6	16	31	78

Method	T1	%	T2	%
Poor	11	26	3	6
Competent	22	51	13	29
Excellent	10	23	29	64

Results	T1	%	T2	%
Poor	13	32	4	9
Competent	19	46	14	31
Excellent	9	22	27	60

Discussion	T1	%	T2	%
Poor	14	34	5	11
Competent	20	49	14	31
Excellent	7	17	26	58

References	T1	%	T2	%
Poor	7	16	0	0
Competent	30	67	5	11
Excellent	8	18	40	89

Tables/Figures	T1	%	T2	%
Poor	14	34	5	11
Competent	25	61	19	42
Excellent	2	5	31	69

figures sections, parts of the paper that they likely received concrete information about how to improve.

In order to gauge how similar the results from the old and revised forms were, correlations were computed between ratings on the old and revised forms for students for whose papers were rated using both forms at both time periods (n = 40). Correlations between dimensions on the old form (content, organization, mechanics) and all 13 items on new form ranged between .63 and .82 (T1 content), .66 and .76 (T1 organization), .67 to .77 (T1 mechanics), .72 to .83 (T2 organization), .65-.81 (T2 organization), and .66 to .73 (T2 mechanics), indicating a high degree of overall evaluation similarity.

<b>Evaluation</b>	<b>T1</b>	<b>%</b>	<b>T2</b>	<b>%</b>
Poor	20	43	2	4
Competent	21	46	11	23
Excellent	5	11	33	73

<b>APA Composition</b>	<b>T1</b>	<b>%</b>	<b>T2</b>	<b>%</b>
Poor	27	58	3	7
Competent	15	33	11	24
Excellent	4	9	32	71

<b>Gen'l Composition</b>	<b>T1</b>	<b>%</b>	<b>T2</b>	<b>%</b>
Poor	8	17	2	2
Competent	33	72	13	29
Excellent	5	11	31	69

<b>Content</b>	<b>T1</b>	<b>%</b>	<b>T2</b>	<b>%</b>
Poor	14	30	2	2
Competent	25	54	13	29
Excellent	7	16	31	16

<b>Organization</b>	<b>T1</b>	<b>%</b>	<b>T2</b>	<b>%</b>
Poor	7	15	2	2
Competent	30	65	8	18
Excellent	9	20	36	80

<b>Synthesis</b>	<b>T1</b>	<b>%</b>	<b>T2</b>	<b>%</b>
Poor	15	33	3	7
Competent	26	56	12	27
Excellent	5	11	31	69

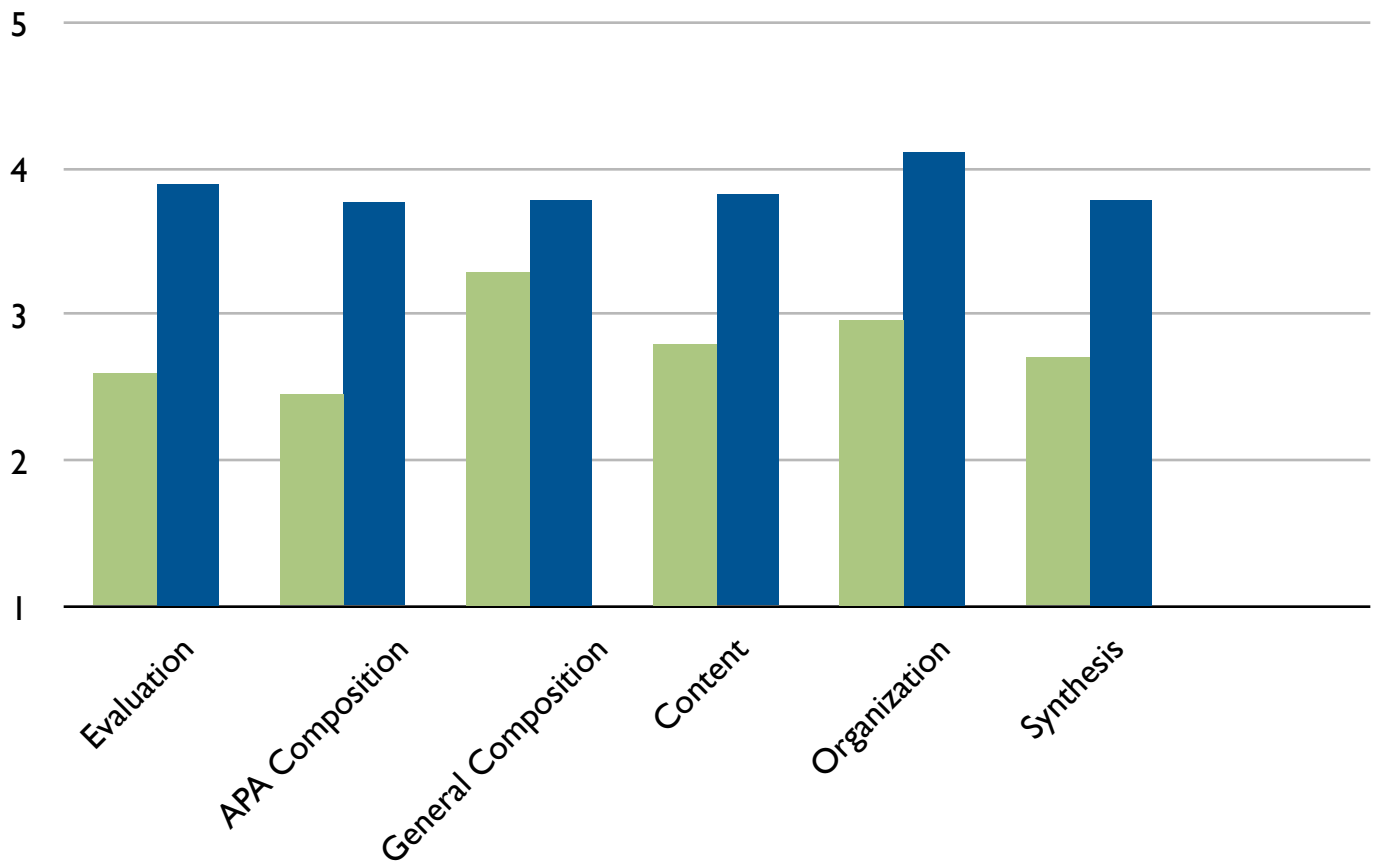
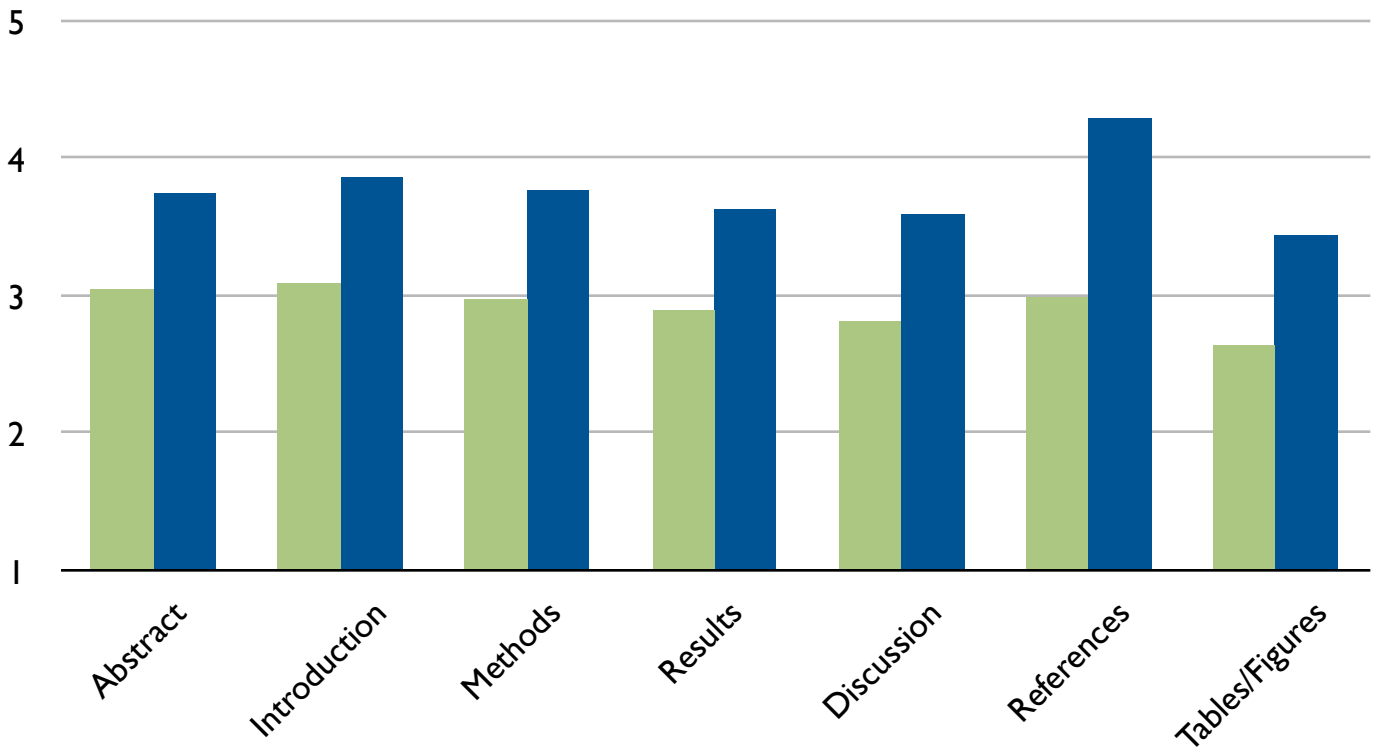
## Conclusion

Taken together, these results indicate that whether using the old form or the revised form, 75% of the students performed at the "competent" or higher level at initial assessment, with about 93% achieving competence or higher by the end of the semester.

## Recommendations

The assessment conducted this year suggests to us that a revision of our writing assessment is warranted. The revised assessment instrument will aid instructors in identifying student competencies among the various skills required for effective writing. Instructors will be given a packet of assessment materials prior to the beginning of each semester. The revised form appears to help clarify where students need more help: Method, Results, Discussion sections and with general composition and content. In the future, in order to better control for demand characteristics, we may want to consider analyzing a subset of the student papers (both first drafts and final drafts) by a "blind" evaluator.

**Time One**   **Time Two**



# Critical Thinking Skills Among PSY 101 and Senior Capstone Students



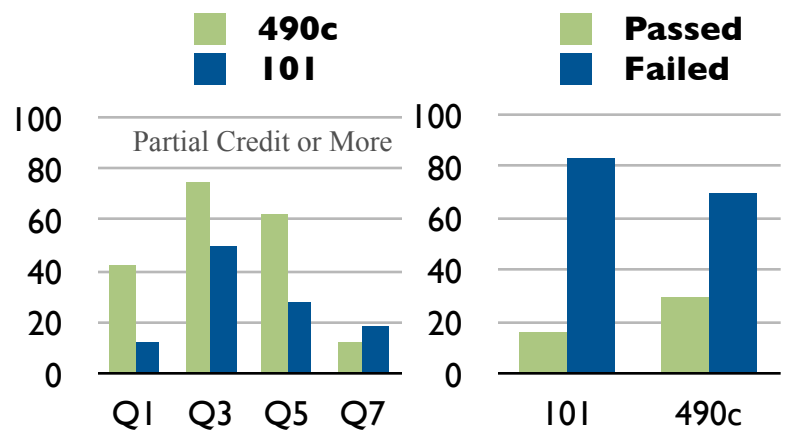
According to the Department of Psychology’s Mission Statement, by the completion of the baccalaureate program psychology *majors should demonstrate fundamental knowledge of critical thinking and analytical skills necessary to evaluate scientific and popular claims concerning behavior.* In order to assess critical thinking skills, we administered the College of Mount St. Joseph’s Critical Thinking Exam (reference, 200x). This 14-item test was administered to graduating psychology majors during their last semester at NAU in their PSY 490c capstone course and to students in a summer section of PSY 101 (n = 32). The answers were evaluated by the department chair, using the grading criteria provided by the test’s author.

PSY 490c students completed the 14-item test in class using a questionnaire. Items were scored as either “correct” (1 point), “partially correct” (.5 points), or “wrong” (0 points). Just over half (56%) of the sample earned less than 7 points (or half the points possible on the test).

Inspection of the exams revealed that fatigue may have been a factor in that many of the answers given to the questions on the last page of the test were less detailed than answers to earlier questions. Therefore, a sub-sample of four items were selected to use as an index of critical thinking. These items were selected because they represented a range of difficulty, from easy to difficult. On the two charts that follow, the percentage of students answering each of these four questions correctly are listed.

In a direct comparison of the four-item test, 29% of seniors and 16% of the first-year students earned more than 2 points out of a total of 4 possible points.

101 Students	0	.5	1
Drink Study	50%	6%	44%
Florist Study	72%	9%	19%
Dietary Study	88%	9%	3%
Identical Twin Study	81%	6%	13%



Nearly one-third of the PSY 101 students earned no points, compared to only 9% of the PSY 490c students. Only 5% percent of seniors earned perfect marks. No first year students earned a perfect score. Seniors did score higher in critical thinking than first-year students.

## Recommendations

Continue to include critical thinking test early in Fall and Spring semesters of PSY 101 students and in all capstone courses. Faculty discuss results of this assessment and possible improvements to the assessment procedure. Discuss possibility of assessing critical thinking among 230 and 302w students.

490c Students	0	.5	1
Drink Study	25%	2%	73%
Florist Study	38%	11%	51%
Dietary Study	56%	18%	25%
Identical Twin Study	87%	2%	11%

# Undergraduate Psychology Majors: Exit Questionnaire



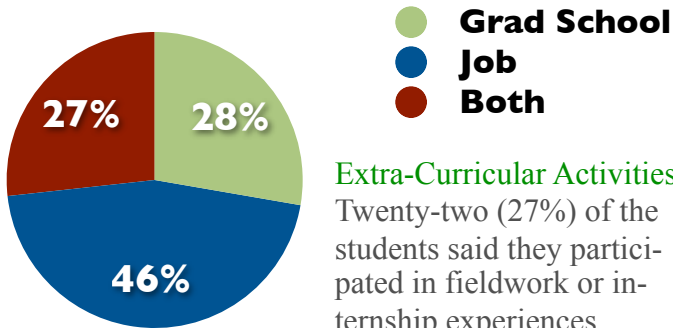
Each year during our psychology capstone course graduating seniors are asked to complete a questionnaire assessing their thoughts and feelings about their experiences as an NAU psychology major. Below is a summary of the data collected during the Spring 2007 semester

**Gender.** Fifty-six female (67% of sample) and 27 male (33%) students completed the questionnaire (n = 83).

**Ethnicity.** Approximately 78% of the sample was Caucasian (n = 65), with 4-6% (each) of African American, Hispanic, and Native American students.

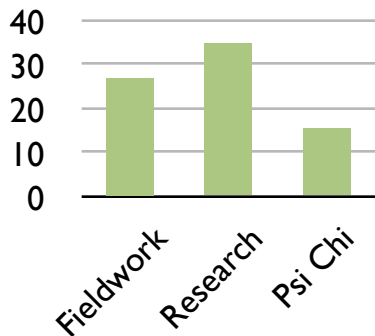
**Why Did You Choose Psychology?** Students could list more than one reason. Over half the students (52%) listed personal growth as their primary reason. Twenty-seven students (33%) indicated professional or graduate school preparation. Thirteen students (16%) listed vocational training and seven students (8%) listed liberal studies education as their primary motive. Twenty-five percent (n = 21) said "other," meaning they didn't specify from our list of options.

## Future Plans



**Extra-Curricular Activities.** Twenty-two (27%) of the students said they participated in fieldwork or internship experiences. Twenty-nine (35%) partici-

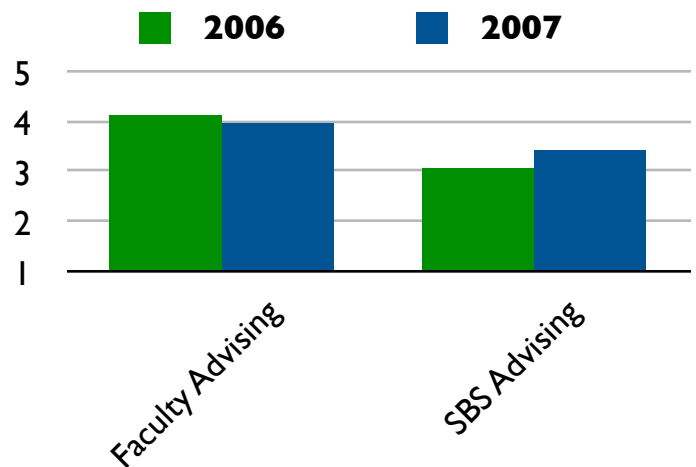
pated in research with a faculty member. Thirteen (16%) said they participated in Psi Chi or the Psychology Club. Forty-one students participated in one or more of these three



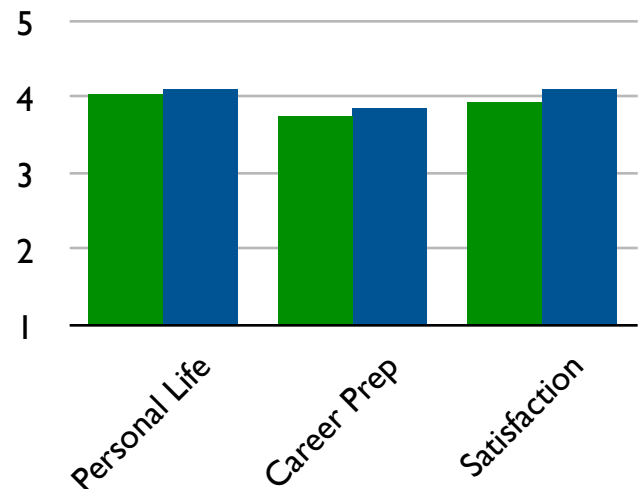
extracurricular activities (21 in one, 27 in two, and 3 in three activities). Thus, about half of those seniors who completed the surveys.

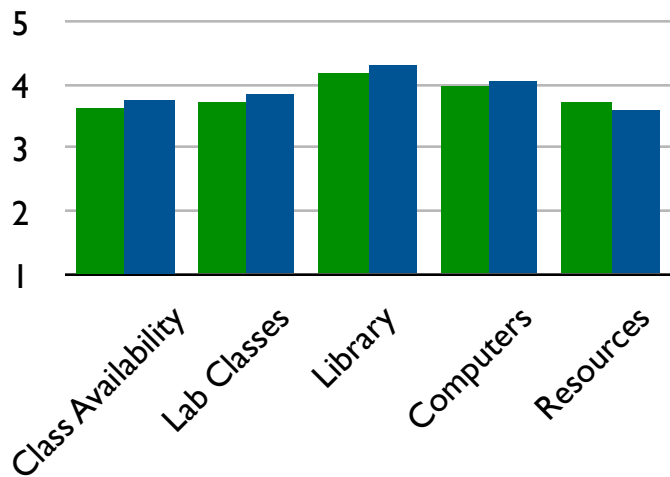
**Student Ratings.** Graduating students were asked to rate 10 aspects of their education on a 5-point scale (1 = very poor; 5 = very good). In order to compare how this year's assessment compared with last year's students' ratings from 2006 and 2007 are both listed.

Students were happier with faculty advising than SBS advising.



Also, overall satisfaction was good, with many feeling more positively about how the psychology major prepared them for their personal life, but less prepared for a career.





**Correlates with Overall Satisfaction.** Overall satisfaction with the program was significantly correlated with all nine rated dimensions, but **was most highly correlated with preparation for one's personal life** (.72,  $p < .0001$ ) and **quality of lab courses** (.50,  $p < .0001$ ). These two factors also emerged as the strongest correlates of overall satisfaction last year (2006).

**Do Extra-Curricular Activities Matter?** In order to examine if extra-curricular activities were associated with program rankings, MANOVAs were computed on the 9 rating scales for three dichotomous variables (fieldwork (yes/no), research experience (yes/no), and Psi Chi/Psych Club (yes/no) and for students who either participated in at least one of these activities. Data revealed that students who had been involved with research ( $n = 29$ ) rated faculty advisement higher (4.31), computer facilities as better (4.39), preparation for life as greater (4.52) and overall satisfaction with the program (4.34) than those who did not have the research experience (range of means: 3.66-3.98). No gains were recorded for Fieldwork or Psi Chi. When coded as either having participated or not, those who participated reported greater life skill preparation (4.39 vs. 3.85) than those who had not participated ( $p < .05$ ).

**Which individuals in the Psychology Department have been most helpful?** Every faculty member was listed at least once in this part of the survey, including part-time faculty. Overall, there was tremendous praise for the NAU faculty.

### What could the Psychology Department do better?

These student comments were very detailed and informative. Two major categories of comments emerged: 1) **advising**, and 2) **curricular issues**.

**Advising:** In general, there were far fewer comments about advising than we have seen in previous years. One explanation is the advising information that was made available via the website and bulletin board outside of the psychology office. There were still a handful of complaints about not knowing about research opportunities earlier.

**Curricular Issues:** Students' comments suggested that students would like more variety in the courses we offer, such as applied courses and more depth in speciality areas (abnormal, disabilities, physiological psychology). These types of courses may be perceived as more relevant to career preparation. While many students were very happy with research opportunities, student comments definitely suggested that we also have students who want more of an applied focus with courses and extracurricular activities.

### Recommendations

The results from this assessment correspond with those from our earlier assessments of second and third year students (see next page) and from those obtained last year. We should continue with our department plan to communicate “early and often” with students about opportunities for research, fieldwork, Psi Chi/Psychology Club and other extra-curricular activities as they arise. Collect exit questionnaire data in all capstone courses. Advance departmental discussion about ways in which we might be able to diversify course offerings (i.e., improving depth in some areas, or have emphases within the major). We need to continue to let students know that information is available to them and think of ways to help students think about what they want to do with psychology much earlier in their career.

We may wish to reword our exit survey question asking about the factors that led to choosing psychology as a major. Currently, 20-25% of students say “other” and it would be important to find out what they mean.

## Majors and Minors' Progress and Plans



Beginning in Spring 2006, we distributed a one-page questionnaire to students in two required courses: PSY 230 and PSY 302w. *The purpose of this very brief survey is to communicate with majors, provide the kind of information exit surveys indicate they would like earlier in their academic careers, and to gather information about advising and how well we are at getting the word out to them about the issues they say are important.* Below is a summary of the data.

Term	N	Female	Male
Spring 06	63	88%	12%
Fall 06	122	72%	28%
Spring 07	88	80%	20%

	Majors	Minors	Other	Transfers
Spring 06	55%	28%	32%	37%
Fall 06	52%	37%	28%	34%
Spring 07	40%	20%	40%	40%
Fall 07			65%	

Majors Take Course	in 1st year	2nd year	3rd year	4th year
Spring 06	6%	41%	28%	14%
Fall 06	6%	46%	40%	10%
Spring 07	9%	40%	40%	11%

Minors Take Course	in 1st year	2nd year	3rd year	4th year
Spring 06				
Fall 06	0	19%	29%	52%
Spring 07	0	35%	53%	12%

Non-Majors Take Course	in 1st year	2nd year	3rd year	4th year
Spring 06				
Fall 06	2%	23%	37%	42%
Spring 07	3%	39%	47%	11%

Psychology Majors who said they...	Have a graduation plan	Had advising help
Spring 06	86%	83%
Fall 06	70%	82%
Spring 07	75%	89%

Psychology majors' post-grad goals	Graduate School	Work	Both
Spring 06	60%	12%	22%
Fall 06	72%	22%	6%
Spring 07	74%	17%	9%

Informed?	Aware of 485	Aware Newsletter	Visited website
Spring 06	n/a		
Fall 06	19%	54%	12%
Spring 07	26%*	54%	23%

Term	N	Female	Male
Spring 06	46	74%	26%
Fall 06	88	74%	26%
Spring 07	69	74%	26%

	Majors	Minors	Other	Transfers
Spring 06	75%	22%	13%	33%
Fall 06	83%	13%	4%	44%
Spring 07	77%	23%	0%	29%

Majors take course	in 1st year	2nd year	3rd year	4th year
Spring 06	0	20%	57%	22%
Fall 06	0	9%	59%	32%
Spring 07	2%	26%	55%	17%

Minors take course	in 1st year	2nd year	3rd year	4th year
Spring 06				
Fall 06	0	19%	29%	52%
Spring 07	0	13%	19%	68%

Psychology Majors who said they...	Have a graduation plan	Had advising help
Spring 06	90%	90%
Fall 06	73%	78%
Spring 07	89%	85%

Psychology majors' post-grad goals	Graduate School	Work	Both
Spring 06	58%	11%	22%
Fall 06	58%	26%	16%
Spring 07	60%	20%	20%

Informed?	Aware of 485	Aware Newsletter	Visited website
Spring 06	n/a		
Fall 06	29%	66%	20%
Spring 07	51%	57%	34%

## Recommendations

The results from this one-page survey assist us in many ways and inform departmental decision making. We know now that a large percentage of majors (17%) are taking PSY 302w their 4th year, with an even larger percent of majors and minors taking PSY 230 in their 3rd and 4th years (50%). We need to help students take these courses earlier. Enrollments for non-majors in 230 has doubled and psychology faculty need to work with other NAU departments to deal with these changes. We have a high percentage of transfer students (30-40%) and it is important to use 230 and 302w as a mechanism to tell these students about the website for them to learn about advising, classes, information about graduate school, and extracurricular activities. A large number of majors indicate they would like to pursue graduate school. **We need to develop more information on our website about Graduate School planning.**

Continue with this one-page survey to 230 and 302w students to assess our progress with advising. This assessment provides another view of trends we see elsewhere and anecdotally. For 2007-2008, we could shorten the number of questions asked and use bottom part of page to educate students about capstone experience courses.

## Recommendations for 2007-2008



### CHAIR

Include capstone change information and important planning points on 230 and 302w advising assessment. Provide assessment forms to all 230 and 302w instructors early in each semester.

Coordinate with 302w instructors to use revised assessment tool for writing evaluation.

Coordinate with 101 Coordinator to assess knowledge and critical thinking in PSY 101 sections. Use shorter four-item assessment.

Coordinate with capstone instructors to have their students take knowledge test, critical thinking test, and exit survey on-line via Vista shells.

Publish assessment results in Departmental Newsletter and notify all majors when posted to the departmental website.

Advance departmental discussion about ways in which we might be able to diversify course offerings (i.e., improving depth in some areas, or have emphases within the major).

Work with incoming Dean and our department to examine what resources we can expect for the doubling of Nursing majors taking PSY230.

### DEPARTMENT

Based on student feedback, we will maintain and update website on information important to students (e.g., what's new, 485 application process, capstone changes, 4-year plan, applying to graduate school). Provide more information about fieldwork and Psi Chi and Psychology Club. Include information on 2008 NAU Undergraduate Research Symposium, and links to regional conferences.

Maintain bulletin boards on 4-year plan, 485 opportunities, Psi Chi and other honor societies. Create board about GRE and graduate school, Transfer Students, Capstone Offerings.

Generate support and enthusiasm for planned NAU undergraduate research conference (4/08).

Publish bookmark with web address, make available to all students.

Work with chair to enter data from one-page assessments and writing assessments in 302w.

Work with chair to put exit questionnaire and critical thinking exam on line for capstone courses to place on Vista shells. Knowledge test already ready to go.

### FACULTY

Be proactive and tell students about website and what is available (hand out bookmarks in class).

Continue to let students know that information is available to them. Think of ways to help students think about what they want to do with psychology much earlier in their career.

Generate support and enthusiasm for NAU undergraduate research conference in April 2008.

Faculty teaching capstone courses, 230, and 302w work with chair to administer or guide students to evaluation/assessment materials.