

## Academic Procrastination: Frequency and Cognitive-Behavioral Correlates

Laura J. Solomon and Esther D. Rothblum  
University of Vermont

This study investigated the frequency of college students' procrastination on academic tasks and the reasons for procrastination behavior. A high percentage of students reported problems with procrastination on several specific academic tasks. Self-reported procrastination was positively correlated with the number of self-paced quizzes students took late in the semester and with participation in an experimental session offered late in the semester. A factor analysis of the reasons for procrastination indicated that the factors Fear of Failure and Aversiveness of the Task accounted for most of the variance. A small but very homogeneous group of subjects endorsed items on the Fear of Failure factor that correlated significantly with self-report measures of depression, irrational cognitions, low self-esteem, delayed study behavior, anxiety, and lack of assertion. A larger and relatively heterogeneous group of subjects reported procrastinating as a result of aversiveness of the task. The Aversiveness of the Task factor did not correlate significantly with anxiety or assertion, but it did correlate significantly with depression, irrational cognitions, low self-esteem, and delayed study behavior. These results indicate that procrastination is not solely a deficit in study habits or time management, but involves a complex interaction of behavioral, cognitive, and affective components.

Procrastination, the act of needlessly delaying tasks to the point of experiencing subjective discomfort, is an all-too-familiar problem. Ellis and Knaus (1977) estimate that 95% of college students engage in procrastination. There is evidence that procrastination results in detrimental academic performance, including poor grades and course withdrawal (Semb, Glick, & Spencer, 1979), and that the tendency for students to procrastinate increases the longer they are in college: freshmen procrastinate the least; seniors, the most (Semb et al., 1979).

Assessment of academic procrastination has focused almost entirely on the measurement of study habits, such as minutes spent studying and attitudes toward studying (e.g., Ziesat, Rosenthal, & White, 1978), and lessons completed in self-paced instruction courses (e.g., Miller, Weaver, &

Semb, 1974). Yet procrastination involves far more than deficient time management and study skills. Anecdotal data from procrastinators and from clinical observations of procrastinators (Burka & Yuen, 1982) suggest numerous other possible reasons for the behavior pattern. Some of these possible reasons for procrastination are evaluation anxiety, difficulty in making decisions, rebellion against control, lack of assertion, fear of the consequences of success, perceived aversiveness of the task, and overly perfectionistic standards about competency. There has been no systematic attempt to investigate the reasons for procrastination. Furthermore, despite the objective nature of procrastination (i.e., one either meets a deadline or fails to meet it; a student hands in a term paper either late or on time), only three studies have incorporated behavioral measures in the assessment of procrastination (Blatt & Quinlan, 1967; Dossett, Latham, & Saari, 1980; Green, 1982). The behavioral measures used in these studies were prompt versus delayed completion of course requirements or speed with which survey questionnaires were returned in

---

This research was supported by a grant from the University of Vermont. The authors extend their appreciation to Jeffrey A. Kelly and Mary Ellen Fortini.

Requests for reprints should be sent to Laura J. Solomon, Department of Psychology, John Dewey Hall, University of Vermont, Burlington, Vermont 05405.

relation to a specific deadline. None of the studies related the self-report of procrastination to the behavioral measure.

Our study had three objectives: (a) to determine the frequency of academic procrastination among college students and to assess the degree to which students feel it is a problem and would like to change their behavior; (b) to systematically assess the reasons for procrastination in order to better understand the cognitions that contribute to the behavior pattern; and (c) to compare the self-report of procrastination to behavioral measures of procrastination and to standardized self-report scales of potentially related content areas (e.g., anxiety, study habits, depression, self-esteem, irrational cognitions, and assertion).

## Method

### Subjects

The subjects of the study were 342 university students who were enrolled in two sections of an introductory psychology course in the fall semester of 1982 and who expressed willingness to participate in an in-class group assessment session. The sample included 101 males and 222 females (19 subjects did not fill in their sex on the computerized answer sheets). Two hundred and sixty-four subjects were freshmen, 43 were sophomores, 13 were juniors, 3 were seniors, and 19 did not give their academic year. Ninety percent of the subjects were 18 to 21 years of age.

One section of the introductory psychology course was structured such that students took self-paced quizzes as they completed each chapter of the text. In addition, students in this section could receive extra course credit for participation in psychology experiments. For the purposes of this study, students from this section were invited to participate in one of three experimental sessions scheduled at various times during the fall semester. One hundred students (29% of the students who had previously completed the in-class assessment battery) attended one of these experimental sessions.

### Self-Report Measures

We developed the Procrastination Assessment Scale—Students (PASS).<sup>1</sup> It consists of two sections. The first section assesses the prevalence of procrastination in six areas of academic functioning: (a) writing a term paper, (b) studying for an exam, (c) keeping up with weekly reading assignments, (d) performing administrative tasks, (e) attending meetings, and (f) performing academic tasks in general.<sup>2</sup> Specifically, subjects are asked to indicate on a 5-point Likert scale the degree to which they procrastinate on the task (1 = *never procrastinate*; 5 = *always procrastinate*) and the

degree to which procrastination on the task is a problem for them (1 = *not at all a problem*; 5 = *always a problem*). Because definitions of procrastination stress both behavioral delay and psychological distress, the degree of procrastination and the degree to which it presents a problem are summed for each academic task (for a score ranging from 2 to 10) as well as across the six areas of academic functioning (for a total score ranging from 12 to 60). In addition, subjects are asked to indicate on a 5-point Likert scale the extent to which they want to decrease their procrastination behavior on each academic task (1 = *do not want to decrease*; 5 = *definitely want to decrease*).

The second section of the PASS provides a procrastination scenario (delay in writing a term paper) and then lists a variety of possible reasons for procrastination on the task: (a) evaluation anxiety, (b) perfectionism, (c) difficulty making decisions, (d) dependency and help seeking, (e) aversiveness of the task and low frustration tolerance, (f) lack of self-confidence, (g) laziness, (h) lack of assertion, (i) fear of success, (j) tendency to feel overwhelmed and poorly manage time, (k) rebellion against control, (l) risk-taking, and (m) peer influence.<sup>3</sup>

Two statements are listed for each of these reasons, and students are asked to rate each statement on a 5-point Likert scale according to how much it reflects why they procrastinated the last time they were in this situation. For example, the two evaluation anxiety statements are "You were concerned the professor wouldn't like your work" and "You were worried you would get a bad grade."

### Behavioral Measures

*Self-paced quizzes.* Subjects in the self-paced section of the introductory psychology course took 23 self-paced quizzes during the course of the semester. The number of self-paced quizzes that subjects took during the last third (5 weeks) of the semester was adopted as a behavioral index of procrastination. That is, those students who took more of their quizzes during the last weeks of the semester were considered to be greater procrastinators than subjects who left fewer quizzes to the end of the semester. A frequency distribution of the number of self-paced quizzes taken by all students during this time period indicates a range of 0 to 23 and median of 12.5.

<sup>1</sup> A copy of the Procrastination Assessment Scale—Students is available from the authors upon request.

<sup>2</sup> In a pilot study that investigated the relative frequency of procrastination in academic, domestic, and social areas, students reported that procrastination was most common and presented more of a problem in academic areas. The six academic areas include most of the school tasks students are engaged in and for which procrastination is possible.

<sup>3</sup> The list of possible reasons for procrastination was generated in a pilot study in which undergraduate students and clinical psychology faculty were asked to indicate why they procrastinate on academic tasks. An open-ended format was used. All responses were categorized and included in the PASS.

*Timing of experimental participation.* Students in the self-paced section of the introductory psychology course received extra course credit for participating in psychology experiments. It was thus possible to recruit subjects to participate in one of three group assessment sessions scheduled at various times during the fall semester; the third session was scheduled during the last week of classes. The purpose of these group assessment sessions was to determine, as an additional measure of procrastination, how late in the semester subjects came to an experimental session. That is, students who chose to participate in the session held during the last week of classes potentially represented a group of high procrastinators.

*Course grades.* As a measure of academic performance, course grades were obtained for students in the self-paced section of the introductory psychology course.

### Procedure

At an in-class assessment session, students in both sections of the introductory psychology course were asked to complete a questionnaire battery measuring self-esteem (Rosenberg Self-Esteem Scale; Rosenberg, 1965), anxiety (State-Trait Anxiety Inventory—Trait version; Spielberger, Gorsuch, & Lushene, 1968), punctuality and organized study habits (the Delay Avoidance scale of the Survey of Study Habits and Attitudes; Brown & Holtzman, 1966), assertion (The College Self-Expression Scale; Galassi, DeLo, Galassi, & Bastien, 1974), procrastination (PASS), depression (Beck Depression Inventory; Beck & Beamesdorfer, 1974), and irrational cognitions (Ellis Scale of Irrational Cognition; MacDonald & Games, 1972). Students in one section of the course received questionnaires in the order listed; students in the other section received questionnaires in the reverse order to counterbalance for order effects.

Students in the self-paced section of the introductory psychology course were asked to participate in a psychology experiment. They were given a letter listing the dates and times of the experimental sessions and were invited to attend one of the three sessions of their choice. The assessment sessions were scheduled during the early (October 15), middle (November 10), and late (December 15) part of the semester. At these sessions, subjects were asked to complete the PASS again.

At the end of the semester, we obtained course grades and number of self-paced quizzes taken during the last five weeks of the semester from the psychology course teaching assistant.

### Results and Discussion

Data analyses revealed that 51 of the 342 subjects incorrectly marked their ID numbers on at least one of the four computerized answer sheets. This permitted comparisons within a particular questionnaire but not between questionnaires for these 51 subjects, as their ID numbers could not be matched across answer sheets. To determine

whether these subjects constituted a different population from the 291 subjects who correctly marked their ID numbers on all answer sheets, we performed a *t* test to detect any difference between these two groups on their total endorsement of procrastination on the PASS. Resulting means were remarkably similar,  $M = 32.61$  for the incorrect ID group;  $M = 33.53$  for the correct ID group;  $t(340) = .316, p > .10$ . Thus, the subjects who correctly marked their ID numbers did not constitute a different population regarding self-reported procrastination, and all further analyses were performed on this group only.

### Frequency of Procrastination

Data on the frequency of procrastination for a variety of academic tasks reveal that 46% of subjects reported that they nearly always or always procrastinate on writing a term paper, 27.6% procrastinate on studying for exams, and 30.1% procrastinate on reading weekly assignments. To a lesser extent subjects procrastinate on administrative tasks (10.6%), attendance tasks (23.0%), and school activities in general (10.2%).

In terms of the degree to which subjects felt procrastination was a problem for them, 23.7% reported that it was nearly always or always a problem when writing a term paper, 21.2% said it was a problem when studying for exams, and 23.7% said it was a problem when doing weekly readings. Procrastination was less of a problem with the remaining tasks and school activities in general.

Regarding the extent to which subjects reportedly wanted to decrease their tendency to procrastinate, 65.0% stated that they wanted or definitely wanted to reduce their procrastination when writing a term paper, 62.2% wanted to reduce it when studying for exams, and 55.1% wanted to reduce it when doing weekly readings. For the remaining tasks, fewer subjects wanted to reduce their procrastination behavior.

The high frequency of self-reported procrastination on writing term papers, studying for exams, and doing weekly readings indicated that these tasks are likely to be viewed as most important by college students, and they are probably the tasks that

have the greatest effect on academic performance. Such tasks as attending classes or meetings, filling out forms, and registering for courses are less important to students; consequently, students view procrastination as less of a problem with those tasks.

We performed analyses of variance to examine possible sex differences in procrastination. The results indicate that there were no significant sex differences for any area of academic procrastination nor for total self-reported procrastination.

### *Behavioral Measures of Procrastination*

*Self-paced quizzes.* The number of self-paced quizzes that subjects took during the last third of the semester was of particular interest in relation to subjects' earlier self-reports of academic procrastination on the PASS. Significant positive correlations were found between number of quizzes and self-reported procrastination on writing a term paper ( $r = .24, p < .001$ ), studying for exams ( $r = .19, p < .01$ ), and doing weekly readings ( $r = .28, p < .0005$ ). Thus, subjects who reported frequently procrastinating on these tasks also delayed taking their quizzes. Correlations between the number of quizzes taken late in the semester and procrastination on administrative tasks and attendance tasks were not significant. The results are based only on subjects in the self-paced section of the course ( $n = 161$ ).

It is not surprising that self-paced quizzes correlated most significantly with self-reported procrastination on doing weekly readings, an activity that is also fairly discrete and can be completed in a relatively short period of time. This reveals the situational specificity of procrastination behavior. However, even this correlation is relatively low. Several reasons could account for the remaining variance. First, most students enrolled in the introductory psychology course are freshmen who may not be able to easily predict their upcoming college work load. Students in more advanced classes might have revealed a stronger relationship between PASS scores and timing of self-paced quizzes. Unfortunately, the size of our advanced student sample was insufficient to perform this analysis. Second, the course instructors

repeatedly prompted students to complete their self-paced quizzes. Consequently, this was not a completely unstructured task, and the distribution of completed quizzes may have been restricted somewhat by virtue of these repeated prompts.

*Attendance at experimental sessions.* One hundred students attended one of three experimental sessions. We conducted an analysis of variance to determine the relationship between self-reported procrastination and attendance in an experimental session held during the early, middle, or late part of the semester. The results indicate that there was a significant effect for experimental session with regard to self-reported procrastination on administrative tasks,  $F(2, 99) = 3.41, p < .05$ . Subjects who attended the late session reported that they procrastinated on administrative tasks significantly more than did subjects who attended the earlier sessions ( $M_s = 4.02, 4.10, \text{ and } 5.75$  for the early, middle, and late experimental sessions, respectively, for the sum of self-reported procrastination and the degree to which procrastination presented a problem). No other effects were significant. Again, these results indicate the situational specificity of procrastination.

*Course grades.* Course grade was not significantly correlated with self-reported procrastination. This nonsignificant relationship was apparent for all types of academic tasks. In this regard our results do not support those of Semb et al. (1979), who reported a relationship between procrastination and poor academic performance. In our study, high procrastinators were as likely as nonprocrastinators to receive a high grade. Thus, despite the relatively high frequency of students who report procrastinating and who perceive their procrastination to be a problem, this student sample cannot readily be identified by academic performance.

This lack of correlation between self-reported procrastination and course grades may be a methodological artifact. The self-reported assessment of procrastination used in this study (the PASS) asked students to report tendencies to procrastinate on academic activities in general without focusing on their psychology course in particular. Yet, our measure of academic performance was based only on their grade in the intro-

ductory psychology course. Perhaps a more valid test of the relationship between procrastination and performance would include reports of tendencies to procrastinate in each course taken by the student and subsequent course grades. Until such a procedure is implemented, the relationship between procrastination and academic procrastination will remain unclear.

#### *Comparison of Procrastination With Self-Report Measures*

Because this was an exploratory study of variables that contribute to procrastination, a number of self-report scales measuring cognitions, affect, or behaviors presumably related to procrastination were included in the study. Although it is not possible to draw conclusions about causality from the ensuing correlations, the relationship between procrastination and other cognitive, behavioral, and affective areas might indicate the direction for future research.

The self-report measures that correlated most significantly with the total score on the PASS were depression ( $r = .44, p < .0005$ ), an affective measure; irrational cognitions ( $r = .30, p < .0005$ ) and self-esteem ( $r = -.23, p < .0005$ ), two cognitive measures; and punctuality and organized study ( $r = -.24, p < .0005$ ), a measure of behavior. Procrastination was significantly correlated with anxiety ( $r = .13, p < .05$ ), but to a lesser degree than it was with the previously mentioned measures, and there was no significant correlation between procrastination and assertion. If procrastination were primarily a study skills or time management deficit, as previous studies suggest (Miller et al., 1974; Ziesat et al., 1978), we would expect procrastination to correlate with study habits to the exclusion of most other self-report measures. Although we did find a correlation between procrastination and study habits, of equal significance were cognitive and affective measures. Specifically, individuals who report high procrastination and who perceive procrastination to be a problem also report depressed affect, low self-esteem, and irrational cognitions. One explanation for these correlations might be response set. That is, either individuals report little tendency to procrastinate and also endorse

many other indices of positive mental health (i.e., socially desirable responses), or they endorse negative thought, affect, and behavior patterns (i.e., negative response set). Another explanation might be that procrastination is related to general negative affect and cognitions about oneself.

#### *Factor Structure of Reasons for Procrastination*

We performed a factor analysis of subjects' reasons for procrastination. This analysis consisted of a principal axis solution with squared correlations on the diagonals, followed by a varimax rotation of these factors with eigenvalues, prior to rotation, greater than or equal to one. An item was included as loading significantly on a factor if its factor value was greater than or equal to  $\pm .50$ .

The first factor, which accounts for 49.4% of the variance, seems to reflect fear of failure. Factor 1 taps items related to anxiety about meeting others' expectations (evaluation anxiety), concern about meeting one's own standards (perfectionism), and lack of self-confidence. The second factor accounts for 18% of the variance and relates to aversiveness of the task and laziness. Items reflect lack of energy and task unpleasantness. Factors 3 through 7 tap dependency, risk-taking, lack of assertion, rebellion against control, and difficulty making decisions, respectively. Because these five factors had eigenvalues after the varimax rotation that were less than or equal to 1.50, they were not included in further analyses. Thus, the factor analysis indicates that fear of failure and aversiveness of the task are the two primary independent reasons for procrastination.

Analyses of variance of sex differences on the two primary reasons for procrastination yielded a significant difference for the Fear of Failure factor,  $F(1, 273) = 6.96, p < .001$ . Females were significantly more likely to endorse items that reflected this factor (mean score for the five items was 10.63) than were males (mean score was 8.52). There was no significant sex difference on endorsement of items that reflected aversiveness of the task.

### *Frequency of Endorsement of Reasons for Procrastination*

Although a factor may account for a large proportion of the variance independent of the other factors, this does not reflect the frequency with which items constituting the factor are endorsed by subjects. We constructed frequency tabulations for each item, consisting of the percentage of subjects who highly endorsed each item (i.e., marked 4 or 5 on a 5-point scale in which 1 = *not at all reflects why I procrastinated* and 5 = *definitely reflects why I procrastinated*).

Subjects' endorsement of items constituting the Fear of Failure factor ranged from 6.3% to 14.1%. In contrast, endorsement of items constituting the Aversiveness of the Task factor ranged from 19.4% to 47.0%.

Other items that were endorsed by at least 20% of the subjects were "You had too many other things to do" (60.8%) and "You felt overwhelmed by the task" (39.6%), both of which refer to difficulties in managing time. Furthermore, the item "You had a hard time knowing what to include and what not to include in your paper," which refers to difficulty in making decisions, was endorsed by 32.2% of the subjects.

These results indicate that there are two groups of procrastinators. First, a relatively small but extremely homogeneous group of students report procrastinating as a result of fear of failure. That is, although only 6% to 14% of students endorsed the items constituting the Fear of Failure factor as highly representative of why they procrastinate, this factor accounts for almost 50% of the variance, over 4 times as much as the variance accounted for by any other factor. Thus, students who endorse items constituting this factor tend to endorse these items exclusively. The Fear of Failure factor includes items relating to evaluation anxiety, overly perfectionistic standards for one's performance, and low self-confidence. Thus, students in this category procrastinate because they cannot meet their own or others' expectations, or because of concerns about poor performance. When the Fear of Failure factor is correlated with self-report measures, this factor correlates significantly not only with depression ( $r = .41, p < .0005$ ), irrational cognitions ( $r = .30, p < .0005$ ), punctuality and organized study habits ( $r =$

$-.48, p < .0005$ ), and self-esteem ( $r = -.26, p < .005$ ) but also with anxiety ( $r = .23, p < .0005$ ). There is also a lower but significant negative correlation between the Fear of Failure factor and assertion ( $r = -.12, p < .05$ ).

The second group of procrastinators consists of a large and relatively heterogeneous group that reports procrastinating as a result of aversiveness of the task. That is, 19% to 47% of subjects endorsed at least one item constituting the Aversiveness of the Task factor as highly representative of why they procrastinate. Because this factor accounted for only 18% of the variance, students were presumably endorsing items that did not load on this factor as well. This is in marked contrast to the finding for the Fear of Failure factor. Thus, aversiveness of the task is rarely the only reason why students procrastinate on academic tasks. The Aversiveness of the Task factor items relate to a dislike of engaging in academic activities and a lack of energy. Presumably, students who endorsed these items also endorsed items reflecting difficulty in making decisions and time management, two areas that were frequently endorsed.

When the Aversiveness of the Task factor was correlated with self-report measures, this factor was found to correlate significantly with depression ( $r = .36, p < .0005$ ), irrational beliefs ( $r = .23, p < .0005$ ), and punctuality and organized study habits ( $r = -.53, p < .0005$ ). However, it is noteworthy that the Aversiveness of the Task factor is not significantly correlated with anxiety or assertion and that the factor's correlation with self-esteem ( $r = -.13, p = .013$ ), although significant, is quite low. Thus, one difference between students who procrastinate because of aversiveness of the task and those who procrastinate because of fear of failure is that the latter also report high anxiety and low self-esteem. An examination of the items constituting the Fear of Failure factor further highlights this finding; these items are indicative of evaluation anxiety and low self-confidence.

Two points are noteworthy here. First, procrastination resulting from aversiveness of the task correlates not only with study habits, a behavioral self-report measure, but also with a number of cognitive and affective components. Procrastination resulting from

fear of failure similarly correlates with study habits as well as with cognitions and affect. Thus, procrastination should be regarded as a behavioral, affective, and cognitive phenomenon; to regard it as only one is to ignore its complexity. Second, individuals who procrastinate as a result of fear of failure can be distinguished from those who procrastinate because of aversiveness of the task by the presence of anxiety and low self-esteem. Consequently, it is difficult to argue that the correlation of high procrastination with negative characteristics, such as high depression or irrational cognitions, is due either to social desirability or to a negative response set. If that were the case, high procrastinators in both groups would endorse anxiety and low self-esteem.

Contrary to prior assumptions, time management is not an independent factor that explains procrastination behavior. Although items constituting time management were highly endorsed, students simultaneously endorsed other cognitive, affective, and behavioral reasons for procrastinating.

In conclusion, it is useful to keep in mind that procrastination is not merely a deficit of study habits and organization of time but involves a complex interaction of behavioral, cognitive, and affective components. For the group of procrastinators who report fear of failure, intervention strategies that address evaluation anxiety, perfectionism, and low self-confidence might be appropriate. For the more heterogeneous group that procrastinates as a result of aversiveness of the task, a contingency management procedure might be one important aspect of the intervention.

In the past, counseling psychologists have attempted to alter procrastination by improving time management and study skills (Green, 1982; Richards, 1975; Ziesat et al., 1978). This form of treatment may be a valuable component; however, it is not likely to be sufficient in itself. Thus, students who come to the attention of counselors and instructors for procrastination problems are likely to have difficulties beyond time-management deficits. It is unlikely that the successful intervention for procrastination will consist of a single-ingredient treatment strategy. Recently some clinicians have

begun to use interventions for procrastination that incorporate cognitive-behavioral strategies (Burka & Yuen, 1983); this is a promising avenue for further research.

## References

- Beck, A. T., & Beamsdorfer, A. (1974). Assessment of depression: The Depression Inventory. *Modern Problems of Pharmacopsychiatry*, 7, 151-169.
- Blatt, S. J., & Quinlan, P. (1967). Punctual and procrastinating students: A study of temporal parameters. *Journal of Consulting Psychology*, 31, 169-174.
- Brown, W. F., & Holtzman, W. H. (1966). *Survey of study habits and attitudes*. New York: Psychological Corp.
- Burka, J. B., & Yuen, L. M. (1982, January). Mind games procrastinators play. *Psychology Today*, pp. 32-34, 44.
- Burka, J., & Yuen, L. (1983). *Procrastination: Why you do it, what to do about it*. Reading, MA: Addison-Wesley.
- Dossett, D., Latham, G. P., & Saari, L. M. (1980). The impact of goal setting on survey returns. *Academy of Management Journal*, 23, 561-567.
- Ellis, A., & Knaus, W. J. (1977). *Overcoming procrastination*. New York: Institute for Rational Living.
- Galassi, J. P., DeLo, J. S., Galassi, M. D., & Bastien, S. (1974). The College Self Expression Scale: A measure of assertiveness. *Behavior Therapy*, 5, 165-171.
- Green, L. (1982). Minority students' self-control of procrastination. *Journal of Counseling Psychology*, 29, 636-644.
- MacDonald, A. P., & Games, R. G. (1972). Ellis' irrational values: A validation study. *Rational Living*, 7, 25-28.
- Miller, L. K., Weaver, F. H., & Semb, G. (1974). A procedure for maintaining student progress in a personalized university course. *Journal of Applied Behavior Analysis*, 7, 87-91.
- Richards, C. S. (1975). Behavior modification of studying through study skills advice and self-control procedures. *Journal of Counseling Psychology*, 22, 431-436.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Semb, G., Glick, D. M., & Spencer, R. E. (1979). Student withdrawals and delayed work patterns in self-paced psychology courses. *Teaching of Psychology*, 6, 23-25.
- Spielberger, C. D., Gorsuch, R. L., & Lushene, R. (1968). *Self-Evaluation Questionnaire*. Palo Alto, CA: Consulting Psychologists Press.
- Ziesat, H. A., Rosenthal, T. L., & White, G. M. (1978). Behavioral self-control in treating procrastination in studying. *Psychological Reports*, 42, 59-69.

Received February 6, 1984

Revision received April 27, 1984 ■