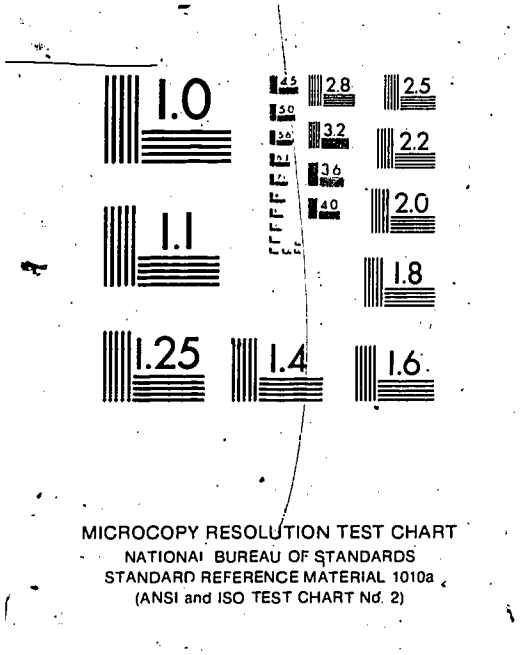

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
4.5
5.0
5.6
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS
STANDARD REFERENCE MATERIAL 1010a
(ANSI and ISO TEST CHART No. 2)

DOCUMENT RESUME

ED 203 789 HE 014 057

AUTHOR Eiszler, Charles; Stancato, Frank
TITLE Affective Meanings of College Grades in Relation to Academic Self-Esteem and Two Context Factors.
PUB DATE Apr 81
NOTE 23p.; Paper presented at the Annual Meeting of the American Educational Research Association (Los Angeles, CA, April 1981). For related document see HE 014 058.

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Affective Behavior; *College Students; Course Content; *Expectation; Failure; *Grading; Higher Education; *Self Esteem; Student Motivation; *Student Teacher Relationship; Success

ABSTRACT

Four student-rated qualities of affective meaning associated with getting a grade of "C" in selected college courses were analyzed for their relation to student academic self-esteem and their sensitivity to two course-related context factors: course content and its intended audience. A total of 106 students in two sections of an introductory psychology class were the subjects. The typical subject was a second-semester freshman with a B average, and a broad range of academic interests was represented. Semantic differential scales were used as an instrument type. Affective meaning indexing the amount of positive feeling associated with the grade, the extent of ownership of the grade, the importance of the grade, and effort required by the grade were related to generalized expectations for success in college courses. In addition, context factors were found to influence the importance and effort dimensions directly. It is concluded that students and instructors have discrepant views of the value and meaning of various grades, and that such discrepancies create potentially serious opportunities for miscommunication between instructor and student. Further research is suggested in two areas: (1) what are the continuities and discontinuities in instructor-student perceptions of various specific grades? and (2) what actions, instructions, or activities by instructors and students can eliminate such discontinuities? Tables and charts of survey results and a list of references are appended. (MSE)

AFFECTIVE MEANINGS OF COLLEGE GRADES IN RELATION TO ACADEMIC SELF-ESTEEM AND TWO CONTEXT FACTORS

Charles Eiszler and Frank Stancato

Teacher Education and Professional Development
Central Michigan University
Mt. Pleasant, Michigan 48859

Paper presented at the annual meeting of the American Educational Research Association, Los Angeles, CA., April, 1981. Support for the presentation of this paper was provided by a grant from the Faculty Research and Creative Endeavors Committee, Central Michigan University.

AFFECTIVE MEANINGS OF COLLEGE GRADES IN RELATION TO ACADEMIC SELF-ESTEEM AND TWO CONTEXT FACTORS

ABSTRACT

Four student rated qualities of affective meaning assigned to getting a grade of 'C' in selected college courses were analyzed for their relation to student academic self-esteem and their sensitivity to two course-related context factors: the content of the course and the intended audience of the course. Affective meaning dimensions indexing the amount of positive feeling associated with the grade, the extent of ownership of the grade, the importance of the grade, and the effort required by the grade were related to generalized expectations for success in college courses. In addition, context factors were seen to influence the salience and effort dimensions directly.

In interaction with the generalized expectancies, an effect was observed for evaluation and ownership dimensions as well. The implications of systematic variations in grade meanings were discussed in relation to achievement motivation and improved instructor-student communication.

AFFECTIVE MEANINGS OF COLLEGE GRADES IN RELATION TO ACADEMIC SELF-ESTEEM AND TWO CONTEXT FACTORS

While there have been numerous controversies in the literature on grades and grading practices, one of the more provocative issues centers around the meaning of grades. In arguing for their usefulness in education, Ebel (1974) summarized the 22 most frequent arguments against grades. He pointed out that five of these could be considered various forms of the more general claim that grades are essentially meaningless. In addition, McKeachie (1976) raised the issue of grades as forms of communication in arguing for a traditional approach to grading. His rationale was that the traditional system exists as a part of a common background of beliefs, attitudes and information which makes miscommunication less likely.

More recently Eiszler and Stancato (1980 and 1979) reported on two studies of the connotative meanings of specific grades for samples of college students. Using a semantic differential technique for the measurement of meaning, Eiszler and Stancato identified and confirmed in a second sample four dimensions to the meaning of grades: evaluation - the amount of positive feeling mediated by the grade; ownership - the extent to which the grade is consistent with the self-concept; salience - the personal importance of the grade; and effort - the difficulty in earning a grade.

In their discussion, Eiszler and Stancato suggest the need for additional research on factors which influence the affective meanings

Which students attribute to grades. They theorize that personality variables and developmental characteristics of students as well as aspects of the context in which the grades are assigned may have an impact on the meanings assigned to the grades.

One personality characteristic thought to be related to school performance is academic self-esteem (Purkey, 1979). In this view, one's self-concept as a learner includes a "sense of competence" which manifests itself in expectations of success on school tasks. Students who report different expectations for success in school tasks may be considered to have different levels of academic self-esteem. Similarly, in their review of research on psychological differences between the sexes, Maccoby and Jacklin (1974) point out that asking college students to predict their performance on some future task is frequently used as a measure of self-esteem or self-confidence. Although expected performance on a variety of different tasks has been used to assess this aspect of self-esteem, one procedure which is both relevant and has face validity for students involves asking them to predict their future grades (Crandall, 1969).

It seems likely that self-esteem, particularly as expressed in grade expectations, is related to the various dimensions of the affective meaning of grades. For a student who expects to receive an 'A' in future courses, in comparison to one who expects to receive a 'C', a grade of 'C' in a course may be thought of as resulting in the mediation of less positive affect, a sense of less ownership of the grade, the attribution of less importance to the grade.

The current study extends the earlier research on grade meaning by examining the extent to which the meanings attributed to receiving a specific grade in a college course are related to a student's generalized grade expectancy. It is hypothesized that students with differing grade expectancies derive different levels of satisfaction, adopt different levels of ownership, perceive different levels of importance, and believe that different levels of effort are required for the same grade. The influence of two context factors (course content and intended course audience) and their interaction with grade expectancy to produce differences in the meaning of grades to students are considered. Finally the implications of our data on grade meanings for understanding the role of grades in activating achievement-related motives and for improved instructor-student communication are discussed.

Method

Sample

One hundred and six students (59 females and 47 males) in two sections of an introductory psychology class were subjects in the study. The typical subject was a second semester freshman with an approximate "B" grade-point-average. When asked to indicate the fields of study of greatest interest to them, students mentioned disciplines and academic areas of study representing all major sections of the University. Grouped into broad categories, interests were distributed as follows: science -18, social studies -17, humanities -8, business -19, others (including several majors applicable in teacher education only) -35. Nine students were unable to identify a field of study of interest to them.

Instrument

Dependent variables were assessed using the semantic differential scales described previously (Eiszler and Stancato, 1980). Four dimensions of grade meaning are assessed by these scales. Each dimension can be characterized as a question which is covertly formulated and answered by the student as he or she responds to the specific grade.

Evaluation. Ten pairs of bipolar adjectives are used to assess how a student answers the question: Is this grade good or bad for me? Higher ratings on this factor indicate that a particular grade is seen as fulfilling, positive, good, satisfying, rewarding, needed, responsible, successful, fair, and wise. The items that make up this global, evaluative reaction have an alpha reliability coefficient for the current sample of .90.

Ownership. How real or unreal is this grade as a characterization of me? To assess this dimension of affective meaning of grades, eight adjective pairs are used. High scores on this variable indicate that the grade is perceived as probable, possible, real, predictable, understandable, clear, like-me, and concrete. In the current sample, the items that make up this variable have an alpha reliability of .85.

Salience. How important is this grade to me? Six pairs of adjectives are used to describe how a student ascribes importance to a particular grade. High scores on salience indicates that a grade is perceived as important, relevant, serious, crucial, personal and immediate. The alpha reliability for this variable is .77.

Effort. How much effort is required for this grade? Three sets of polar adjectives describe this dimension of grade meaning. High ratings on effort indicate that getting a particular grade is complicated, difficult, and hard. The alpha reliability coefficient is .76.

Course Content and Intended Audience

The adjective pairs defining the variables described above were randomly ordered for use in a survey instrument. The instrument required each student to describe, by using the rating scales, his or her feelings about receiving the grade of "C" in each of two situations. Each situation identified and described a specific course offered in the University. Courses were selected for use in the survey to represent three content areas (science, social science, and humanities) and two types of intended audience (majors and non-majors). Figure 1 lists the 18 courses used and shows the information regarding each

course which was provided in the survey instrument. A total of nine separate forms of the survey were derived by randomly assigning courses to forms with the following restrictions: a) courses from different content areas were not assigned to the same form, b) each form contained one course for each type of audience, and c) no form contained two courses from the same specific discipline. The order of the courses on the forms was randomly determined.

- - - - - - - - - - - - - -

Insert Figure 1

- - - - - - - - - - - - - -

Academic Self-Esteem

This variable was indexed by a student's generally expected grade for college level courses and was assessed by asking each student to indicate an expected grade in four hypothetical situations: in an easy and a difficult course in the student's major area of interest and in an easy and difficult course outside of the major area of interest. The average response to these four situations was used to classify a student into one of four expectancy groups: a) those who expected to get an A- or better, b) those who expected to get a B+, c) those who expected to get a B, d) those who expected to get less than a B. These groups contained 21, 26, 38, and 20 students respectively. One student failed to respond to this section of the survey and was not included in the analysis.

Data Collection

Students were surveyed during the final 10-15 minutes of a regularly scheduled class meeting. No credit was given for participation and those who did not wish to participate were excused. Fourteen of 120 students chose not to participate or were absent on the day the survey was done. Each participating student was randomly assigned one

of the nine survey forms.

Design and Analysis

The sample size did not permit a three-factor factor design, grade expectancy by course content by audience type, since 24 cells of subsamples, some with frequencies too small to be meaningful, would be generated. An appropriate alternative involved two distinct two-factor designs: grade expectancy by course content and grade expectancy by audience type. Since each student judged the meaning of a grade in two situations, responses to the first situation were evaluated using the first design and responses to the second situation were examined using the second design. Which data set to use with which design was decided by a toss of a coin.

A two-factor analysis of variance was conducted for each dependent variable under each design using the ANOVA program of the SPSS package (Nie,Hull,Jenkins,Steinbrenner, and Bent, 1975).

Results

The hypothesized relationships between grade expectancy and the affective meanings of a 'C' grade in a specific college course were examined by analyzing student responses in two separate situations, each specifying a different course. Table 1 presents the total group and subgroup means for each expected grade category and course or audience type subgroup.

- - - - - - - - - - - - - -

Insert Table 1

- - - - - - - - - - - - - -

In general, the data reported in Table 1 show that, for a 'C' grade, the level of positive feeling associated with the grade, the extent to which the grade is perceived as real and "owned" by the student, the level of importance of the grade, and the level of effort associated with the grade are in the midrange of values for the seven-point scale used in assessing each characteristic.

Table 2 summarizes the results of the two-way analyses of variance. In the analysis of the data for the first situation in which variation among the dependent variable ratings was partitioned among levels of expected grades, course content, and their interactions, the expected grade effect was significant in three of the four comparisons. The lower a student's generalized grade expectancy, the more positive was the level of affect associated with the grade of 'C'. Mean evaluation scores for decreasing levels of grade expectancy were 2.97, 3.19, 3.63 and 3.84 respectively. Similarly, mean Ownership scores increased with decreasing grade expectancy levels: 3.41, 3.56, 4.03, and 4.24. This confirms the hypothesis that the lower a student's generalized grade expectancy the more likely a grade of 'C' would be seen as real for him or her.

Insert Table 2

The relationship between grade expectancy levels and Salience scores was curvilinear. Students who expected, in general, to get grades of A- and above and those who expected to get grades of less than a B rated the importance of a 'C' grade higher (4.68 and 4.09) than students whose generalized grade expectancies were for grades of a B or B+ (3.81 and 3.98).

Mean ratings for Course Content were significantly different on two aspects of grade meaning: Salience and Effort. In terms of both the importance of the grade and the amount of effort associated with the grade, mean ratings across the three Course Content categories followed a similar pattern. From high to low rankings were: Science, Social Science, and Humanities courses.

For the second data set in which grade meaning scores were partitioned among generalized grade expectancy, the intended audience of the course (majors, non-majors), and the interaction of these variables, significant main effects were reported for one aspect of grade meaning: Effort. Students whose generalized grade expectancy was for a B+, B, or less than a B had mean Effort ratings of 4.66, 4.97, and 4.48 respectively. In contrast, the mean for students with an A- or better expectancy was 4.08. Since higher scores indicate the grade is perceived as harder, more difficult, and more complicated the relationship between grade expectancy and the efforted associated with earning a 'C' grade is roughly inverse.

Significant interaction effects between grade expectancy and intended audience were noted for two aspects of grade meaning. These interactions are described in Figure 2. For the Evaluation scores, students at the lowest

grade expectancy level perceived 'C' grades in general audience courses as more positive and rewarding than courses designed for majors in the various fields surveyed. The reverse was true students at the highest level of grade expectancy. For the Ownership scores, the same pattern prevailed, except that differences in the Ownership of the 'C' grade were small at the lowest grade expectancy level for the two types of course. While interpretation of the meaning of these interactions is complicated, they reveal the reason why grade expectancy main effects parallel to those in the first data set did not appear in the second data set.

In summary, the results of the study show generalized grade expectancies significantly related to each of the affective meaning factors either directly or in interaction with one of two context factors studied. The content of the course, i.e., whether it was in a science, social science or humanities discipline, was a significant main effect for the perceived importance and effort associated with earning a 'C' grade. The intended audience of the course, i.e., whether it was designed for majors or non-majors in a field, was significantly related to the perceived value of the grade and the tendency to admit "ownership" of the grade in interaction with the grade expectancy main effect. A main effect for intended audience was noted for the aspect of meaning involving effort associated with the grade.

Discussion and Conclusions

Although there are discontinuities across the two samples of student ratings, the results of the study support the hypothesized relationship between generalized grade expectancies as an index of academic self-esteem and the several dimensions of the affective meanings of grades. Specifically, the higher a student's self-esteem the less value he or she attributed to a 'C' grade and the less likely the student was to perceive the grade of 'C' as characteristic or typical. Further, the importance of a 'C' grade was a curvilinear function of esteem levels being perceived as more important by students with high and low self-esteem and relatively less important at the intermediate esteem levels.

One implication of the study is the possibility that use of grade expectancies as an index of academic self-esteem and consequent achievement motivation involves a sex-related bias. Generally, positive feelings of worth, ability, and responsibility in school and learning situations would be considered to be influential in mobilizing achievement-related motives. Certainly positive expectancies, used in this study as an index of academic self-esteem, are acknowledged to play such a role. If specific grades have differing affective meanings for students who hold different grade expectations, it is possible that two students with differing levels in their expectation for grades may have similar levels of activation of achievement-related motivation result from their expectations. For example, one student expecting a 'C' and the other expecting a 'B' may be equally motivated, since the lower grade expectancy may occur concommitantly with the greater valuing of the grade in the meaning attribution process. Use of grade expectations as an index of academic self-esteem would be systematically biased in such a situation.

One example of a situation in which grade expectations may involve systematic bias as an index of academic self-esteem is suggested by the paradox reported by Crandall(1969). Although college women typically get grades equal to or better than those of college men, women are more likely to predict that they will do less well in the future, that is, to report lower expectations. If such expectations are honestly reported, it would be difficult to explain the continued high achievement levels of women. One explanation is that women are more reluctant to report accurately their expectations. An alternative explanation may be hypothesized on the basis of this study. Differing grade expectancy levels activate equally potent achievement motives in men and women because women systematically attribute different qualities of affective meaning to the same grade. A post hoc examination of the data of our study compared males and females by generalized grade expectancy levels on a composite score (averaged across both data sets) for each affective meaning dimension of a 'C' grade. Significant difference, $p < .05$, were noted between males and females on two of four meaning factors. Females, more than males, perceived a 'C' grade as salient (4.45 and 4.14) and involving greater effort (4.73 and 4.35). Women college students may be both honest in their reported grade expectations and as equally motivated as men in this view.

Beyond their role as possible moderators of the influence of grade expectations in activating intrinsic achievement-related motives, the affective meaning of grades can be seen as having implications for more extrinsic role that grades are often claimed play in motivating achievement. Given the systematic differences among groups of students in the affective meaning associated with a 'C' grade in the current study,

it seems reasonable to suspect that students and instructors have discrepant views of the value and meaning of various grades. To the extent that such discrepancies exist they would appear to represent potentially serious opportunities for miscommunication between an instructor and student. Instructors believing their students to be rewarded by certain specific grades have students who feel punished by the same grade. Two avenues of additional research seem suggested by this possibility. First, what are the continuities and discontinuities in instructor-student perceptions of various specific grades? Second, what actions, instructions or activities by instructors and students can eliminate discontinuities? The data of the current study suggest that grade meanings are influenced by context factors. Although neither of the context factors examined in this study is directly under the control of an instructor, the implied responsiveness of grade meanings to context factors suggests that some instructional activities may also have an influence. One way for instructors to explore the possibilities of discrepancies and at the same time attempt to change the grade meanings is to incorporate their assessment and a discussion of the results in their class activities.

Finally, future research might examine the effect of differing approaches to grading and student evaluation procedures on the meanings of the grades assigned by the procedures. For example, are the meanings of a specific grade earned in a mastery-based course similar to the meanings of the same grade earned in a competitive mode?

Form	Situation 1	Situation 2
1	Physics 100. Physics for Poets. A nonmathematical exploration of physical concepts; social and philosophical implications; utility and limitations of physics for solution of problems in the modern world. Not intended for potential majors.	Chemistry 161. Principles of Chemistry I. General and quantitative chemistry. Introduction to laboratory techniques; qualitative inorganic analysis; methods of quantitative analysis. Recommended for majors.
2	Physics 145. University Physics I. Normally the first physics course for majors and minors. Mechanics of single and many particle systems. Conservation laws, statistical concepts, and gravitational interaction.	Mathematics 200. Mathematics-A Cultural Approach. Designed to fulfill general education requirements. The role of mathematics in molding our civilization and culture and the relationship to other disciplines.
3	Chemistry 181. Armchair Chemistry. An introduction to the science of chemistry using laboratory experiments and directed discussion. Satisfies general education requirement. Not intended for majors and minors.	Mathematics 132. Calculus I. Limits, continuity, differentiation of algebraic and trigonometric functions applications of derivatives, definite integrals, Fundamental Theorem of Calculus. Required on major.
4	Economics 201. Principles of Economics I. Provides basic understanding of scarcity, the price system, role of government, money and banking, monetary policy, economic growth, international trade. Required on major and minor.	History 100. The Dynamics of the Past. Investigates how the past lives in the present and influences the future. Library is used as a laboratory to answer historical questions; memorizing answers is deemphasized.
5	Economics 110. Economics and Society. An examination of the development of economic thought and institutions with emphasis on the application of this knowledge to the understanding of today's world. Satisfies general education requirement.	Sociology 100. Introductory Sociology. Relationships among human beings. The perspective of sociology upon human behavior. This is a prerequisite to all advanced courses and is required on the major.
6	History 201. Contemporary History. Contemporary events considered with emphasis on background, analysis, critical use of sources, and evaluation.	Sociology 221. Social Problems. Nature and extend of major social problems. Underlying general social processes and specific factors as well as solutions. Satisfies general education requirement.
7	Art 105. Drawing I-Introductory. A basic introduction to drawing media and techniques, and an exploration of the concepts of space and form in varied subject matters. Required of most majors.	English 323. Fantasy and Science Fiction. History, art and meaning of fantasy and science fiction. Strong emphasis on twentieth-century materials and prize-winning literature. Satisfies a general education requirement.
8	Music 110. Musical Man. The function of music in contemporary living through hearing and discussing different types of music. Not open to majors in music.	English 252. American Literature: Realistic Period to the Present. Emphasis on major writers and trends. Satisfies, in part, the literature requirement for majors and minors.
9	Art 125. Understanding Art. A generalized art appreciation course for students without extensive art training, presented by a combination of lecture slides, filmstrips and films. Satisfies a general education requirement.	Music 101. Theory I. Basic training in the melodic, harmonic, and rhythmic elements of music. Required of all majors.

Figure 1. Courses described in various forms of the survey of student feelings about receiving a "C" grade.

Table 1

Mean Affective Meanings For Expected Grade Samples and Subsamples

Dimension of Affective Meaning	Expected Grade	Course Content[a]				Intended Audience[b]		
		Science	Social Science	Humanities	Total	Non-Majors	Majors	Total
Evaluation	Total	3.33	3.54	3.29	3.39	3.45	3.62	3.53
	Less than B	3.82	4.03	3.73	3.84	4.22	3.40	3.87
	B	3.42	3.98	3.39	3.63	4.08	3.26	3.70
	B+	3.11	3.36	3.07	3.19	3.08	3.68	3.36
	A-	3.16	2.73	2.95	2.97	2.50	4.20	3.26
Ownership	Total	3.79	3.91	3.65	3.79	3.74	3.91	3.82
	Less than B	4.42	4.31	4.08	4.24	4.20	4.04	4.13
	B	3.78	4.35	3.89	4.03	4.21	3.46	3.86
	B+	3.66	3.71	3.33	3.56	3.40	3.77	3.58
	A-	3.52	3.27	3.40	3.41	3.26	4.67	3.89
Salience	Total	4.33	4.21	3.71	4.07	4.68	4.40	4.55
	Less than B	3.93	4.73	3.76	4.09	4.73	4.24	4.52
	B	4.00	4.04	3.90	3.98	4.26	4.33	4.29
	B+	4.22	3.93	3.34	3.81	4.83	4.46	4.66
	A-	5.13	4.60	4.17	4.68	5.05	4.89	4.98
Effort	Total	4.77	4.75	4.10	4.53	4.87	4.26	4.59
	Less than B	4.44	5.00	3.93	4.38	4.78	4.07	4.48
	B	5.25	4.73	4.00	4.67	5.07	4.86	4.97
	B+	4.12	4.62	4.46	4.42	4.83	4.46	4.66
	A-	5.42	4.83	3.72	4.73	4.76	3.26	4.08

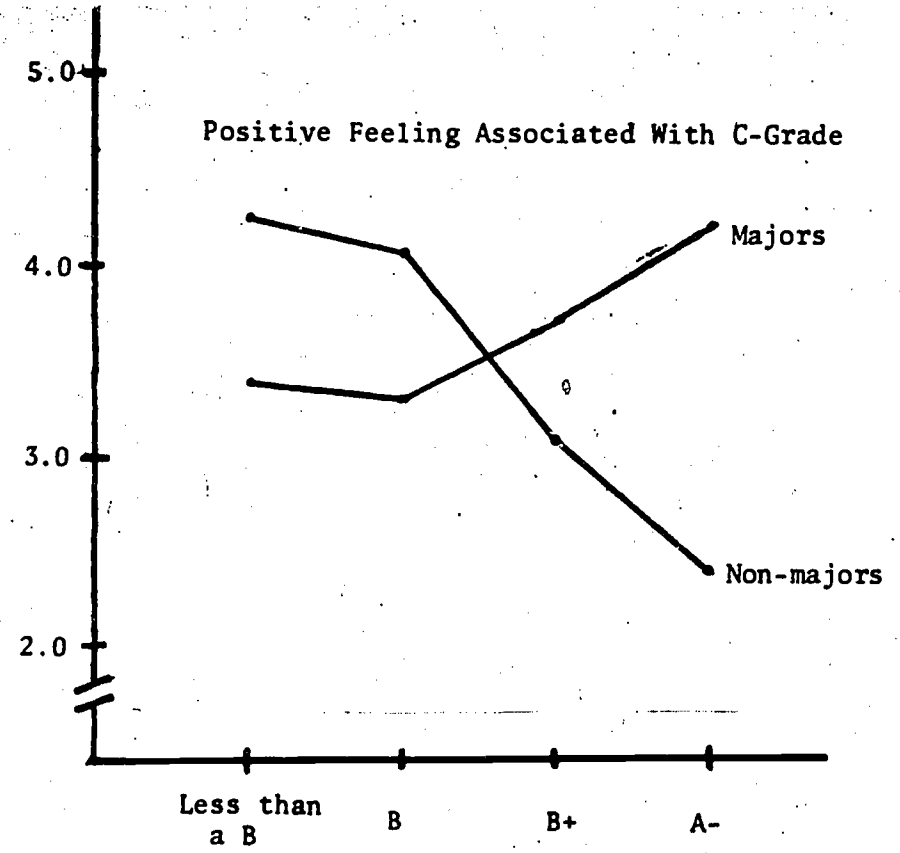
[a]Expected grade by course content is based on data in the first situation.

[b]Expected grade by intended audience is based on data for the second situation.

Table 2

Analysis of Variance Summaries

Dependent Variable	Source	d.f.	M.S.	F	P<
ANOVA: Expected Grade By Course Content					
Evaluation	Total	104	.835		
	Expected Grade	3	3.671	4.717	.004
	Course Content	2	.768	.987	N.S.
	Interaction	6	.358	.460	N.S.
	Residual	93	.778		
Ownership	Total	104	.855		
	Expected Grade	3	3.713	4.662	.005
	Course Content	2	.789	.983	N.S.
	Interaction	6	.308	.384	N.S.
	Residual	93	.803		
Salience	Total	104	1.139		
	Expected Grade	3	3.199	3.085	.031
	Course Content	2	3.567	3.439	.036
	Interaction	6	.786	.758	N.S.
	Residual	93	1.037		
Effort	Total	104	1.256		
	Expected Grade	3	.529	.462	N.S.
	Course Content	2	4.781	4.181	.018
	Interaction	6	2.073	1.181	N.S.
	Residual	93	1.144		
ANOVA: Expected Grade By Intended Audience					
Evaluation	Total	104	1.376		
	Expected Grade	3	1.893	1.640	N.S.
	Audience	1	.805	.697	N.S.
	Interaction	3	8.221	7.120	.001
	Residual	97	1.155		
Ownership	Total	104	1.083		
	Expected Grade	3	1.525	1.585	N.S.
	Audience	1	.900	.935	N.S.
	Interaction	3	4.637	4.819	.004
	Residual	97	.962		
Salience	Total	104	.987		
	Expected Grade	3	1.808	1.870	N.S.
	Audience	1	2.003	2.074	N.S.
	Interaction	3	.474	.491	N.S.
	Residual	97	.966		
Effort	Total	104	1.377		
	Expected Grade	3	3.236	2.649	.053
	Audience	1	9.717	7.954	.006
	Interaction	3	1.842	1.508	N.S.
	Residual	97	1.222		



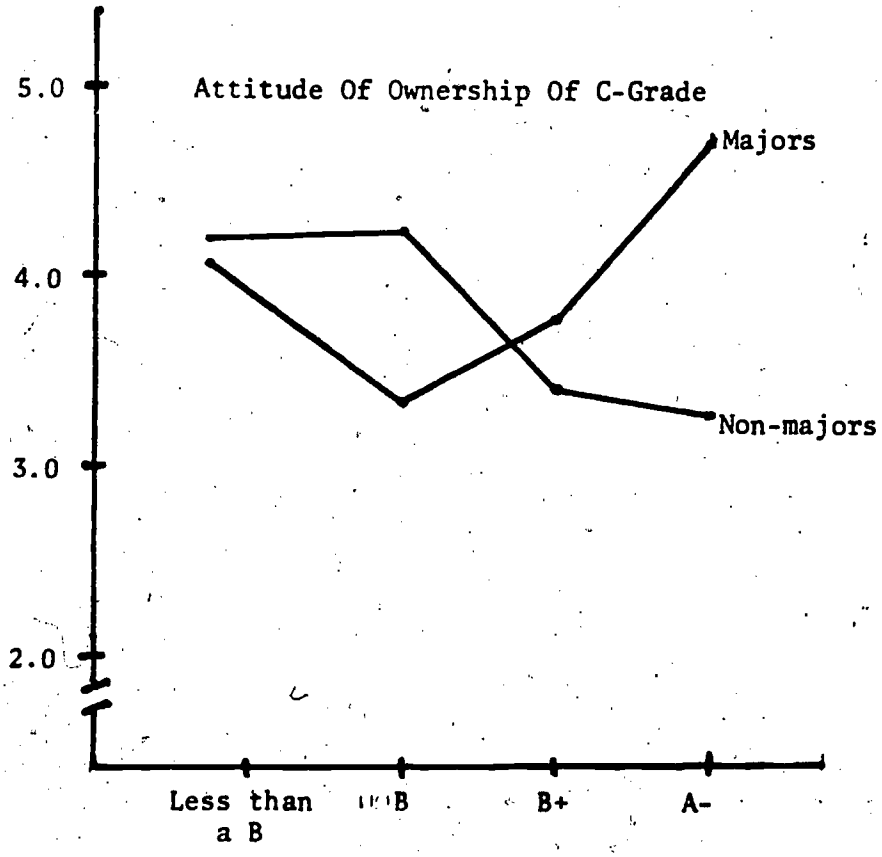


Figure 2. Evaluation and Ownership in courses for majors and nonmajors.

References

(1) Ebel, R.L. "Shall We Get Rid of Grades?", Measurement in Education, 1974, 5, 1-5.

(2) Crandall, V.C. "Sex Differences in Expectancy of Intellectual and Academic Reinforcement", in C.P. Smith, ed., Achievement Related Motives in Children, New York: Russell Sage Foundation, 1969, 27-9.

(3) Eiszler, C.F. and Stancato, F., "The Affective Meanings of College Grades: Confirmation of a Multifactor Model". Mt. Pleasant, Michigan: School of Education, Central Michigan University, 1980. (mimeographed)

(4) Eiszler, C.F. and Stancato, F., The Connotative Meaning of College Grades: An Exploratory Study, Educational Resources Information Center, ED 168 441. Mt. Pleasant, Michigan; Central Michigan University, 1979.

(5) Kagan, J. and Lang, C., Psychology and Education: An Introduction, New York: Harcourt, Brace, Jovanovich, Inc., 1978, 264-302.

(6) Maccoby, E.E. and Jacklin, C.N., The Psychology of Sex Differences, Stanford, California; Stanford University Press, 1974, 154-5.

(7) McKeachie, W.J. "College Grades: A Rational and Mild Defense", AAUP Bulletin, 1976, 62, 320-322.

(8) Nie, N.H., Hull, C.H., Jenkins, J.G., Steinbrenner, K., and Bent, D., Statistical Package for the Social Sciences, Second Edition. New York: McGraw Hill, 1975.