DOCUMENT RESUME

ED 035 555 SE 007 837

AUTHOR Crittenden, Butler
TITLE A Lecture-Tutorial Approach to Mass Instruction in Sociology: Attitudes and Performance.
REPORT NO Bull-2
PUB DATE Sep 69
NOTE 14p.; Paper presented at the annual meeting of the American Sociological Association, San Francisco, September 1969

EDRS PRICE EDRS Price MF-$0.25 HC-$0.80
DESCRIPTORS *Academic Achievement, Attitudes, *College Instruction, Evaluation, *Instruction, *Sociology, *Student Characteristics
IDENTIFIERS Rokeach Dogmatism Scale, Scholastic Aptitude Test

ABSTRACT

Mass instruction in Sociology at Purdue University combines lectures and small-group discussion. Achievement in the course is evaluated by short essays written after the topic has been discussed in the weekly discussion meetings. This study investigated the relationship of student characteristics to achievement. Students were pretested for dogmatism, authoritarianism, tolerance for ambiguity and anomy. Analysis of scores on these tests and on the Scholastic Aptitude Test, together with final course grade, revealed that course grade was positively associated with I.Q. and tolerance for ambiguity, and negatively associated with anomy, dogmatism, and authoritarianism. Significant correlations were also found between predictor variables. I.Q. and tolerance for ambiguity were positively associated, while dogmatism, authoritarianism and anomy were negatively associated with I.Q. Tolerance for ambiguity was negatively associated with dogmatism, authoritarianism and anomy. Dogmatism, authoritarianism and anomy were all positively associated. The implications of the findings for instruction and grading in sociology courses are discussed. (EB)

A LECTURE-TUTORIAL APPROACH TO MASS INSTRUCTION IN SOCIOLOGY: ATTITUDES AND PERFORMANCE

by

Butler Crittenden

Institute for the Study of Social Change
Department of Sociology
Purdue University

Purdue Experiment in Mass Instruction
Bulletin Number 2

The Purdue Experiment in Mass Instruction is an activity of the Department of Sociology, Purdue University, and is directed by Reece McGee, Professor of Sociology, Purdue Master Teacher. Reprints of this or other Experiment Bulletins may be secured from the Institute for the Study of Social Change, Department of Sociology, Purdue University. Inquiries concerning the Experiment in Mass Instruction should be directed to Professor McGee.

A LECTURE-TUTORIAL APPROACH TO MASS INSTRUCTION IN SOCIOLOGY: ATTITUDES AND PERFORMANCE*

Students, faculty members, and university administrators often condemn the mass classes so often found at the undergraduate level; yet of necessity such mass instruction is increasing. Perhaps in an era of enlightenment, when national priorities have been set straight and academicians have had time to re-evaluate the purposes of higher education--an era that seems further away today than it did five years ago--mass instruction will be dispensed with. Perhaps this form of instruction will remain with us for much longer. Nevertheless, it seems appropriate at the present time to attempt to discover a suitable format for the mass class. Ideally such a format would be acceptable to most students--at least to better students--and would contribute to the student's liberal education by encouraging him to be creative and independent. The difficulty of designing a format with these two features is reduced somewhat by the fact that the better students are generally more creative, independent, and desirous of a liberal education. An attempt to implement an acceptable format for mass instruction has been made in the Purdue University Experiment in Mass Instruction in Sociology. This paper briefly describes the course format and reports the characteristics of students who perform well in such a course.

---

*Paper read at the annual meeting, American Sociological Association, San Francisco, California, September, 1969.

The first course format implemented at Purdue was designed with two major considerations in mind: (1) Objective examinations not only are unpopular; they also fail to reward creative and independent thinking. (2) Discussion meetings in small groups seldom are satisfying to either the students or the discussion leaders; attendance at these meetings is poor unless quizzes are given; and those students who attend are as apt to be compulsive but uninterested as they are to be seeking genuine intellectual discussion. The first consideration led to the adoption of eight short essays as a means of evaluating students. The second consideration, along with a desire to have the short essays be intellectually sound rather than merely the student's opinion, led to the establishment of a quasi-tutorial method of handling the weekly discussion meetings. Our discussion leaders served as tutors by discussing some of the different approaches and points that could be used in writing the next essay due. In effect, the tutors overloaded the student's mind on each essay topic, thus forcing the student to synthesize in writing his essay. To some extent the tutors did part of the analytic footwork for the student, leaving mainly reanalysis and synthesis to be done.

The data for this report were gathered during the second semester of the experiment. One minor change had been added to the course format: four pre-scheduled reading quizzes, each worth five percent of the final grade, were administered during the tutorial meetings in order to increase the chances that the reading would be done before the material relevant to an essay topic was discussed. During the previous semester largely false rumors had developed that some tutors were easier graders than others. Thus during the second semester we took greater pains to advertise two facts pertinent to the grading of the essays: (1) A system of checking the

reliability of the graders was being used. (2) The professor in charge had decided as a matter of policy that the final distributions of grades for the tutors would be highly similar, even though this would mean that the grades of some tutors would have to be curved up more than the grades of others.

Each student in the course was required to complete a social background questionnaire during the first week of the semester and a course evaluation questionnaire upon completion of the semester. The research question was: what type of student performs best in a short-essay-based grading system? More specifically, is IQ the best predictor of performance? Or are other personality factors, especially creativity, as useful in predicting performance in such a course?

The background questionnaire was designed with theoretical literature in mind. Bereleson and Steiner have summarized much of the literature on creativity; they state:

> Highly creative people show a preference for, and interest in, complexity and novelty; they have intrinsic interest in situations that require some resolution, rather than those that are cut-and-dried . . . . [They] are more likely than others to view authority as conventional rather than absolute; to make fewer black-and-white distinctions; to have a less dogmatic and more relativistic view of life; to show more independence of judgment and less conventionality and conformity, both intellectual and social; to be more willing to entertain, and sometimes express, their own "irrational" impulses; to place a greater value on humor and in fact to have a better sense of humor; in short, to be somewhat freer and less rigidly controlled.[1]

Milton Rokeach, writing of the open and closed mind, feels that his work is an unintentional contribution to the study of creativity. He concludes that open-mindedness is more significant than intelligence in influencing the ability to analyze and synthesize, and he argues that open-mindedness and

creativity are quite closely related.[2] Rokeach's argument, plus Bereleson and Steiner's inclusion of low dogmatism in their description of the creative person, led us to include in the background questionnaire a short form of Rokeach's Dogmatism scale[3] and to predict that students who are less dogmatic would perform better in our course.

In that the Dogmatism scale explicitly deals with substantive beliefs and attitudes (although in general terms), we sought another scale that is relatively free of substance but that taps the dimension of mental flexibility that the Dogmatism scale focuses upon. There is ample support in the literature that tolerance for ambiguity is an indicator of creativity.[4] A TA scale of nine items developed by Webster, Sanford, and Freedman[5] was included in our instrument and accepted as an indirect indicator of creativity. A positive relationship between creativity (high TA) and performance in the course was predicted.

The measure of intelligence we used in this study is the Scholastic Aptitude Test. The College Entrance Examination Board administers this test to high school students. According to the Board:

> The Scholastic Aptitude Test measures the basic verbal and mathematical abilities that a student has acquired over many years both in and out of school. It tests his ability to reason rather than to remember facts, and it does not require special preparation. Its verbal sections emphasize the ability to read with understanding and to reason with verbal material. Its mathematical sections, which contain various kinds of problems to be solved, stress reasoning ability rather than knowledge of specific courses in secondary school mathematics.[6]

In the present study the combined verbal and mathematical scores, obtained from the registrar's office, served as measure of IQ. As in the case of all the scales utilized in the study, the SAT scores were divided into quintiles. Because male and female scores were reported separately by the Board, they

were quintiled separately in the present study. However, for purposes of analysis students in a given quintile were considered of comparable ability, regardless of sex.

Depending on the IQ level under consideration, very important differences have been observed in magnitude of the correlation of IQ and creativity. Frank Barron, who has done extensive research on the creative person, states:

> Over the total range of intelligence and creativity a low positive correlation, probably in the neighborhood of .40, obtains; beyond an IQ of about 120, however, measured intelligence is a negligible factor in creativity, and the motivational and stylistic variables upon which our own research has laid such stress are the major determiners of creativity.

On a sample with a very high mean IQ, Getzels and Jackson found "relatively low correlations between IQ and performance on tests requiring . . . creative thinking abilities."[8] Considering that the mean IQ of freshmen in a typical four-year college is 115 and that the mean IQ of college graduates is 120, the importance of Barron's conclusion, and of Getzels and Jackson's to a lesser extent, is clear: for the great majority of students in our introductory sociology course there should be only a negligible relationship between creativity and IQ. We predicted a positive relationship between IQ and performance, but with the reservation that creativity would also serve as an independent predictor of course grade.

Two additional attitude scales were included in the questionnaire--Authoritarianism (F scale) and Anomy. A short form of the F scale[9] was judged appropriate to the study because both the TA scale and the Dogmatism scale were designed to clarify Adorno et al.'s[10] pioneering work on the general subject of attitudinal rigidity. High F was predicted to impair a student's performance. McClosky and Schaar developed a nine-item Anomy scale and reported an inverse relationship between anomy and both tolerance for

ambiguity and cognitive functioning.[11] We felt that a high level of anomy should be emotionally costly enough to interfere with a student's performance.

In Table I the results of the study are summarized. Performance, defined as final course grade, is positively associated, using gamma, with IQ and creativity (tolerance for ambiguity) and negatively associated with anomy, dogmatism, and authoritarianism. All of the relationships are significant as measured by chi square. Except for the relationship between creativity and performance, the data were not collapsed. That is, the attitudinal scores, in quintiles, were run against four grades--A, B, C, and D-F. The interrelationships between the predictor variables are also significant. IQ and creativity are positively associated, while dogmatism, F score, and anomy are negatively associated with IQ. Creativity is negatively associated with dogmatism, F score, and anomy. Dogmatism, anomy, and F score are all positively associated.

Multivariate analysis of the relationship between IQ and creativity supported our assumption that the two operate independently. For the top two and bottom IQ quintiles, the gammas between creativity (TA) and performance are about .23, suggesting low positive association between the two even when IQ is held constant. A zero relationship obtains for the remaining two IQ quintiles. When creativity is controlled, relatively high gammas (from .36 to .51) and significant relationships are found between IQ and performance at all levels of creativity.

In short, there were few surprises, leaving us with the more important task of interpreting the meaning of the results with regard to the format of the course and the teaching of introductory sociology. First of all, we cannot say whether the course format and intellectual approach are responsible

Table 1

Relationship of Predictor Variables and Performance in Experimental Introductory Sociology Course; Interrelationships Between Predictor Variables (N=792[a])

Variable	2. IQ	3. Creativity (Tolerance for Ambiguity)	4. Anomy	5. Dogmatism	6. Authoritarianism
1. Performance[b]	$\gamma = .32$[d] $P < .001$	$\gamma = .22$[e] $P < .01$	$\gamma = -.19$ $P < .002$	$\gamma = -.18$ $P < .001$	$\gamma = -.17$ $P < .001$
2. IQ[c]	---	$\gamma = .20$ $P < .001$	$\gamma = -.18$ $P < .01$	$\gamma = -.19$ $P < .001$	$\gamma = -.18$ $P < .001$
3. Creativity (Tolerance for Ambiguity)		---	$\gamma = -.24$ $P < .001$	$\gamma = -.47$ $P < .001$	$\gamma = -.36$ $P < .001$
4. Anomy			---	$\gamma = .40$ $P < .001$	$\gamma = .27$ $P < .001$
5. Dogmatism				---	$\gamma = .43$ $P < .001$
6. Authoritarianism					---

[a] Seven hundred ninety-two non-Negro students took the course for the first time and completed it; 29 Negroes were excluded because their number was too small to allow separate consideration.

[b] Defined as A, B, C, or D-F final earned grade.

[c] IQ and the four attitude scales were divided into quintiles for the present analysis.

[d] The significance of relationships has been measured by chi square.

[e] In this relationship only, TA has been collapsed into quintiles 1 and 2 vs. quintiles 3, 4, and 5, and performance has been collapsed into high (A, B) vs. low (C, D, F).

for the results, for there was no control group for either of these variables. We may make these comparisons in future experiments, depending on whether the scientific gain seems important enough to outweigh the pedagogical and ethical losses. One reason for not experimenting with an exam-oriented course is that there is already much evidence that some types of students perform better in sociology courses regardless of format. For example, many sociologists feel--some with great chagrin--that the more "liberal" students tend to perform better in their courses. Studies dating back to the 1920's have found liberalism to be positively correlated with IQ, overall scholarship, and grades in social science courses.[12] (We, by the way, found only a slight trend in favor of the politically liberal student.) One reason often advanced for the better performance of liberals is that they are more open-minded, which brings us back to a more basic proposition: regardless of whether a sociology course is exam- or essay-based in its evaluation procedure, a certain type of student--one characterized by open-mindedness--is likely to perform well. At least one study of introductory sociology students, in which their grade was based on performance on objective examinations, has found that the higher the score on the Rokeach Dogmatism scale, the lower the grade earned.[13] Because of our own and our colleagues' intuitive impressions on this subject, because of the research that already has been done, and because of the logical connection between social science and open-mindedness, we acknowledge that our study might have produced quite similar results even had we used examinations to measure performance, especially if the exams focused upon concepts rather than on facts.

Given these conclusions, the question becomes: should the essay-based system be recommended, and, if so, why? Our affirmative answer is based

upon pedagogical and ethical considerations. While open-mindedness is an asset to the sociology student, intelligence is even more of an asset. Thus the teacher is faced with the choice of rewarding mere intelligence in students or of trying to stimulate open-mindedness, creativity, and independence, even though at some cost to a few bright but dogmatic students. Assuming that pedagogy is the art of teaching others to think, the second alternative--stimulating creativity and independence--is clearly more relevant. Even bright students often complain that regurgitation replaces learning in courses that utilize objective examinations, thus over-rewarding memory-power.

Another reason for considering the difference between creativity and IQ in planning a course format and intellectual focus is ethical. We live in an ambiguous world; we face social problems with no easy solutions; we find black-and-white thinking leading to increasing incoherence in an era when transformation is needed; we feel the corporation and the state nibbling at our freedom, and we need greater personal creativity to offset this lost freedom. Sociology is a science, but not a very precise one; society is orderly, but the order is only a complex of trends and changing structures; it is inappropriate for sociologists to lead students into thinking that society may be better understood than we presently understand it, especially in light of the damage done by such false concreteness.

In one sense, the results of our research are not encouragaging, for the problem of how to educate the closed-minded student still remains. That is, almost any sociology course, and especially one like ours, rewards those who bring cognitive flexibility and a certain set of attitudes to the course. Our only rebuttal is that the value of early and repeated exposure to an

intellectual perspective through a format that demands hard thinking must be accepted on faith. On the other hand, we have thought of two ways that may permit us to erase our results without rewarding closed-mindedness. Both suggestions hinge on student concern with grades. One is that attitude scales be administered on the first day of class and that the students, except for a control group, be informed at the next meeting of where they stand and what scores like theirs meant the previous semester in terms of course grade. Special lectures and presentations would be used to try to bring the closed-minded students into awareness of the probability of poor performance if they do not loosen up. There are ethical implications to this suggested experiment, but we believe that it could be planned and executed so as to avoid psychic damage to the students in the groups receiving special attention. The second suggestion is to retain the essay-based grading system, but to supplement it with quizzes taken on a pass/fail basis. A "pass" on all quizzes would be required to earn an A or B, but students would be allowed to retake the quizzes several times if failed. Ideally the only other grade besides A, B, and C would be "no credit," thus assuring each student that he would not be penalized for either a poor memory or insufficient writing skills. This system has the advantage of encouraging the student to read the assigned material, thus increasing his understanding of lecture and tutorial presentations as well as providing him with more information to consider in writing his essays.

Footnotes

[1]Bernard Bereleson and Gary A. Steiner, Human Behavior (New York: Harcourt, Brace and World, 1964), pp. 229-230.

[2]Milton Rokeach, The Open and Closed Mind (New York: Basic Books, Inc., 1960), pp. 398-399.

[3]Verling C. Troldahl and Frederic A. Powell, "A Short-Form Dogmatism Scale for Use in Field Studies," Social Forces, XLIV (December, 1965), pp. 211-214. The first ten of the 20 listed items were used.

[4]Bereleson and Steiner's (op. cit.) discussion clearly suggests that tolerance for ambiguity is one facet of creativity. Nevitt Sanford (The American College, New York: John Wiley & Sons, 1962, pp. 272, 281) implies that tolerance for ambiguity facilitates development of curiosity and the capacity for entertaining the playful and fantastic. Albert Pepitone ("Some Conceptual and Empirical Problems of Consistency Models," Cognitive Consistency, Shel Feldman (ed.) (New York: Academic Press, 1966, pp. 260-261) has pointed out that intellectual affinity for problems, paradoxes, and irony (all indicators of creativity) is associated with cognitive tension and inconsistency (two facets of TA).

[5]H. R. Webster, N. Sanford, and M. Freedman, "A New Instrument for Studying Authoritarianism," Journal of Psychology, XL (July, 1955), pp. 73-84.

[6]College Board Score Reports: Preliminary Scholastic Aptitude Tests, Scholastic Aptitude Test, Achievement Tests, 1967-68 (New York: College Entrance Examination Board), p. 19.

[7]Frank Barron, "Creative Vision and Expression in Writing and Painting," The Creative Person, Institute of Personality Assessment and Research (University of California and University Extension, Liberal Arts Department, 1961), pp. II-10.

[8]Jacob W. Getzels and Philip W. Jackson, Creativity and Intelligence: Explorations with Gifted Students (New York: John Wiley & Sons, 1962), p. 20.

[9]Fillmore H. Sanford and H. J. Older, A Short Authoritarianism-Equalitarian Scale, Progress Report No. 6, Series A. (Philadelphia: Institute for Research in Human Relations, 1950).

[10]T. W. Adorno, Else Frenkel--Brunswik, Daniel J. Levinson, and R. Nevitt Sanford, The Authoritarian Personality (New York: Harper & Row, 1950), pp. 222-279; the F scale is reproduced in C. H. Bonjean, R. J. Hill, and S. D. McLemore, Sociological Measurement (San Francisco: Chandler Publishing Co., 1967), pp. 46-51.

[11]Herbert McClosky and John H. Schaar, "Psychological Dimensions of Anomy," American Sociological Review, XXX (February, 1965), pp. 27-29.

[12]G. W. Allport, "The Composition of Political Attitudes," American Journal of Sociology, XXXIV (1929), pp. 220-238; A. J. Harris, H. H. Remmers, and C. E. Ellison, "The Relation Between Liberal and Conservative Attitudes in College Students and Other Factors," Journal of Social Psychology, III (1932), pp. 320-336; R. Bugelski and O. P. Lester, "Changes in Attitudes of a Group of College Students During Their College Course and After Graduation," Journal of Social Psychology, XII (1940), pp. 319-332; E. L. Breemes, H. H. Remmers, and C. L. Morgan, "Changes in Liberalism-Conservatism of College Students Since the Depression," Journal of Social Psychology, XIV (1941), pp. 99-107, W. A. Kerr, "Correlates of Politico-Economic Liberalism-Conservatism," Journal of Social Psychology, XX (1944), pp. 125-130.

[13]Robert M. Frumkin, "Dogmatism, Social Class, Values, and Academic Achievement in Sociology," Journal of Educational Sociology, XXXIV (May, 1961), pp. 398-403.