THE EFFECTS OF TWO METHODS OF TEACHING BASIC PSYCHOLOGY IN A JUNIOR COLLEGE

By

BEVERLY ANN SLICHTA

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D'Youville College

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THE EFFECTS OF TWO METHODS OF TEACHING BASIC PSYCHOLOGY IN A JUNIOR COLLEGE

Thesis Approved:

Harry K. Brobst
Thesis Adviser

Arthur E. Harrison

Kenneth L. Sandvold

D. D. Durham
Dean of the Graduate College

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CHAPTER I

INTRODUCTION

The field of psychology is a scientific source belonging to everyone. Rather than remaining a self-absorbed science, it has grown to be an essential element in the education of man. The nearly universal curriculum requirement of basic psychology in all types of colleges insures that the field will be exposed to a multitude of students who may have no other direct contact with this science. A vital concern, therefore, of psychology should be to adequately present itself outside of its own membership.

The four year college traditionally has been and continues to be the focal point in the investigation of instruction of psychology courses. A rapidly growing interest in presenting psychology courses on the high school level is evidenced by such innovations as "Periodically," published by the American Psychological Association's clearinghouse on Precollege Psychology and Behavioral Science. There is, however, no corresponding concern for the student taking basic psychology at the two year college.

In an attempt to contribute to the study of basic psychology courses on the junior college level, the

following investigation of one aspect of instruction has been made. It is hoped that this preliminary study of two teaching methods for basic psychology at a junior college, will be a stimulus for further research into methodology for psychology instruction at this particular level of higher education.

CHAPTER II

LITERATURE REVIEW

In the fields of psychology and education, numerous attempts have been made to research, develop, and improve methods of teaching. The interest in instructional psychology, traditionally referred to within educational psychology, continues to abound with investigations of various aspects of teaching.

In the specific area of college instruction, one of the most prominent psychologists is William McKeachie. In the current volume of the Annual Review of Psychology (1974), McKeachie discussed the perennial interest in teacher-oriented and student-centered methods as well as the impact of such recent innovations as Keller's plan (1966, 1967) and its modifications. McKeachie concludes with an emphasis on the need to understand the limitations of the principles of learning and instruction, rather than heralding any particular principle or method as the panacea for instruction.

The literature containing descriptions of methodology for teaching psychology courses reveals that one of the more radical approaches was investigated by Asch (1950). He adapted his knowledge in nondirective counseling techniques

to the instruction of a course in basic psychology. His control group was taught with a lecture plus teacher-directed discussion approach. The experimental group was student-centered, based on Asch's nondirective techniques. The control group performed better than the experimental group on both objective and essay tests. A comparison of profiles of the Minnesota Multiphasic Personality Inventory showed that the "nondirective" students improved significantly in adjustment. A criticism from some of the "nondirective" students was that they needed more direction.

Landgraf (1965) offered ninety-seven students a choice between a course emphasizing initiative and learning, and a more traditional course. Three students selected the innovative course while the other ninety-four students chose the traditional one. The students gave various reasons for selecting the traditional course. These included claims of lack of time available for the demands of the experimental course and individual inability to attain objectives requiring independent study. Landgraf interpreted such reasons as rationalizations.

Another variation was Keller's (1966) proposal that incorporated lectures, demonstrations, laboratory hours, and homework geared to the student's pace. Witters (1972) modified Keller's individualized program and then compared it with the traditional lecture methods. His results indicated better scores and more positive feelings of mastery and enjoyment within the programmed groups. Stalling's

adaptation (1971) used a schedule of tests rather than mastery of Keller's required units. The results again showed the experimental classes superior in their test scores as compared with those in lecture-only classes.

The studies of Johnston and Pennypacker (1971), and Alba and Pennypacker (1972) emphasize the importance of student reaction to methodology. The student-manager approach which they developed utilizes the better or more advanced students as helpers to the new students. There have been no specific advantages demonstrated from these investigations to warrant the conclusion that this method is superior for factual learning. Pennypacker and Johnston stress, however, that students overwhelmingly prefer such methods over traditional ones.

The most recent research includes evaluation of achievement, but some add less salient criteria such as student attitudes and interpretation of relevance. Mauri (1972) found no significant differences in achievement in comparing student-centered methods with instructor-centered methods, but he did find a greater positive change in attitude on some measures among the student-centered group.

A more diverse analysis of differences among methods was performed by Atherton. In a comparison of lecture, discussion, and independent study methods, Atherton (1972) found, despite the variations of these methods, no significant differences in testing for recall, understanding, and application. One of his conclusions is that the form of

teaching, whether it be lecture, discussion, or independent study, may not be as crucial as many have previously thought. What seems to be of greater significance is that the instructor actually does some teaching, rather than give the student all or most of the responsibility for self-instruction.

Atherton feels that more teaching, and, therefore, more contact between teacher and student, are crucial if there is to be significant improvement in results when testing for recall, understanding, and application. This observation is reminiscent of Ekstein's concern (1948) for teachers' relating to the class and reacting appropriately to their students' behavior.

A different emphasis is made by Grasha (1972). He feels that, since psychology has pointed out the substantial loss in retention of material once students have completed a course, the best methodology would develop other skills in students. Content acquisition would be only a partial result of the teaching method.

Menges' research (1972) centers on relevance in undergraduate instruction. The content of psychology courses, according to his sample of students, is relevant if it is useful or interesting to them. These students did not equate "relevant" material with "easy" material. Menges interprets his findings to mean that psychology courses need not be diluted. Students request only that they be relevant to their needs.

In a review of the literature on college teaching in general, Mayhew and Ford (1971) found that the lecture and lecture plus discussion methods used in the 1930's are essentially the same as those employed in the 1970's. There are some exceptions but these are decidedly in the minority.

Three possible explanations may account for the stagnation of college teaching methodology. One explanation is that different methods may not really produce different results. Banes (1925), McKeachie (1967), and Mayhew and Ford (1971) indicate that their research as well as that of others shows no significant differences in student achievement when comparing two different methods of instruction.

Another explanation may be familiarity and convenience. Baskin (1967) feels that most instructors teach the way they were taught, generally in lecture form. Lumsdaine (1967) finds that lecturing is simply convenient for most instructors, especially when they have research or other commitments.

A third possible explanation is expense. Any innovation in teaching, if it is to be properly controlled, involves the expenditure of money as well as time. Such projects as the audio-tutorial approach (Monroe, 1972) have appeal to many educators, but the expense often prevents these projects from becoming realities.

Dennis (1971) points out that there is little innovation in teaching, particularly at the junior college level. In Cohen and Brawer's overview (1972) of the junior

college, they agree with Dennis. They add that the junior college has accepted innovations from research on the use of hardware and software. The acceptance and utilization of the research findings are the responsibility of the faculty. At the present time, however, rigidity rather than flexibility is characteristic of instructors at the junior college level.

The current as well as the older research into methods of college teaching has been and will continue to be centered around students in four year programs. No specific research that applies to the student in a junior college setting who is required to take a course in basic psychology has been done. It would be unreliable to apply the findings at four year colleges to junior colleges. Therefore, the following study has been made to contribute to research in teaching basic psychology in a junior college.

CHAPTER III

PROBLEM

Selection of Methods

No research is available on the effectiveness of different methods of teaching basic psychology in a junior college. In order to initiate research in this specific situation, the first question to be considered is which methods should be selected.

The junior college involved in the study was Trocaire College in Buffalo, New York. In the college's Self-Evaluation Report 1973-1974, a survey was included on the teaching methods used by the faculty.

The distribution of faculty members according to divisions is described in Table I. Table II lists the order of preferences of teaching methods as indicated by the faculty. Table III gives a breakdown of numbers of faculty members per division who use each of the thirteen methods.

The majority of the faculty expressed a preference for using lectures with student participation and audio-visual presentations. Since there was general usage of this combination in most divisions, it was selected as the foundation for Method A, a teacher-oriented approach.

TABLE I

FACULTY DISTRIBUTION

Divisions	Number of Members
Remediation (R)	4
Social Sciences (SS)	8
Natural Sciences (NS)	4
Business (BS)	3
Humanities (HM)	6
Philosophy (PHL)	7
Health Sciences (HS)	25

TABLE II

PREFERRED TEACHING METHODS
ACCORDING TO ORDER
OF CHOICE

Choices	Teaching Methods
1st choice	Lecture with student participation
2nd choice	Audio-visual presentations with lecture, group discussion or demonstration
3rd choice	Demonstration of procedures and skills
4th choice	Student discussion groups Instructor's role - resource person
5th choice	Student discussion groups Instructor's role - participant observer
6th choice	Programmed instruction
7th choice	Observation (field trips, etc.)
8th choice	Role playing or simulation
9th choice	Student discussion groups Instructor's role - observer
10th choice	Student discussion groups Instructor's role - group leader
11th choice	Lecture without student participation
12th choice	Audio-visual presentations only
13th choice	Other method(s) - games

Source: Trocaire College, Self-Evaluation Report 1973-1974

TABLE III

NUMBER OF FACULTY WHO USE EACH METHOD

Teaching Methods	Divisions							
	R	SS	NS	BS	HM	PHL	HS	TOTAL
1) Lecture without student participation		3	1			1	5	10
2) Lecture with student participation	2	7	3	3	4	2	17	38
3) Student discussion groups Instructor's role - observer		2			1	1	4	8
4) Student discussion groups Instructor's role - resource person	2	3	1		1	2	10	19
5) Student discussion groups Instructor's role - participant observer	1	3			3	2	10	19
6) Student discussion groups Instructor's role - group leader		2				1	4	7
7) Demonstration of procedures and skills	2	2			3	1	12	20
8) Audio-visual presentations only		3					2	5
9) Audio-visual presentations with lecture, group discussion, or demonstration	2	4	2	3	4	2	14	31
10) Role playing or simulation		1	1		1		7	10
11) Programmed instruction	2	1		1	1		5	10
12) Observation (field trip, etc.)	1	1		1	2	1	2	8
13) Other method(s) - games							1	1
TOTAL	12	32	8	8	20	13	93	186

Source: Trocaire College, Self-Evaluation Report 1973-1974

In order to provide a suitable contrast, Method B needed to have an emphasis on an infrequently used technique. Another criterion for Method B was that it be student-oriented. A review of the teacher preference table and method table indicates that student discussion groups with the instructor as observer was used by only eight faculty members and ranked ninth in choice. Since this technique can qualify as a student-oriented method, it was selected as the principle feature in Method B.

Both methods represent similar selections of methodological comparison that have been investigated on the four year level as indicated in the literature review. These choices would be beneficial in comparing and contrasting the results from the study with those on the four year level.

It was decided that a number of similar factors should be an integral part of both methods in order to avoid one of the procedural complications listed by McKeachie (1967). His warning is that often a new or radical method shows improvement in learning because an emotional reaction to the novelty of the approach changes affective behavior.

Students

At Trocaire College basic psychology is a requirement in the health sciences and education programs. This includes 75% of the enrolled student body. All other students must elect one course in the social sciences.

It is important that anyone involved in the instruction of psychology in such a college setting be cognizant of two vital factors. First, the majority of students have indicated a choice of career orientation by selecting their respective programs. Second, the consensus of several program coordinators is that basic psychology is a necessary part of the curriculum for their students. These factors could have an influence on student attitudes toward the course in general.

Instructor

McKeachie (1967) has pointed out the difficulty of assessing the influence of the instructor's personality and abilities on the results of studies of classroom procedures. The educational background, age, life style, and other variable of the two psychology instructors at Trocaire College were very diverse. The number of sections and scheduling were different. While the author was assigned four sections in the day division, her counterpart had two sections in the day division and one in the evening division which met once a week for three hours.

It was decided, therefore, that the results of Method A and Method B, as taught by one instructor, the author, would be investigated. An attempt at a comparison of the methodology of two instructors would allow too many uncontrolled variables to enter into this preliminary project.

The author has taught basic psychology for four years. Three years' experience was gained at four year colleges. The fourth year was spent at Trocaire College. Lectures, class discussions, projects, experiments, and films have been part of the methodology used. This was the first time the instructor used a method with the emphasis on "small group discussion."

CHAPTER IV

PROCEDURES

Subjects

Students at Trocaire College assigned to sections 101 A, 101 B, 101 C, and 101 F in basic psychology were used as subjects of this investigation during the fall semester of 1973. The original enrollment figures (Table IV) were not conducive to randomly assigning the sections to either method. Table V shows two possible arrangements of sections for each method. The actual combinations used are shown in Table VI.

An arbitrary means of selection became necessary. For balance of number, the combinations in Table V would have been better than the actual combination chosen. It was necessary, however, to consider variables other than numbers of students per section. These variables included schedule of class meetings (Table VII), major programs of the students (Table VIII), and age and sex variables (Table IX). The last two factors were judged as uncontrollable because of the small number of males and the large number of students around 18 years of age. There would be no way of insuring comparative results among the sections on sex and age variables.

TABLE IV

COMPARISON OF NUMBERS OF STUDENTS
IN ORIGINAL REGISTRATION AND
THOSE COMPLETING THE COURSE

Sections	Original Registration	Number Completing Course	Attrition
101A	27	25	2
101B	28	23	5
101C	19	17	2
101F	46	42	4
TOTAL	120	107	13

TABLE V

TWO POSSIBLE COMBINATIONS OF SECTIONS
FOR METHODS A AND B

Sections	Original Registration	Number Completing Course	Attrition
101A + 101B	55	48	7
101C + 101F	65	59	6
TOTAL	120	107	13
101A + 101C	46	42	4
101B + 101F	74	65	9
TOTAL	120	107	13

TABLE VI

ACTUAL COMBINATIONS OF SECTIONS
FOR METHODS A AND B

Sections	Original Number Registered	Number Completing Course	Attrition	
101B + 101C	47	40	7	Method A
101A + 101F	73	67	6	Method B
TOTAL	120	107	13	

TABLE VII

SCHEDULE OF CLASS MEETINGS

	Mon.	Tues.	Wed.	Thurs.	Fri.
8:30	101C	101C			101C
9:30	101B		101F	101F	
10:30		101A	101B		
11:30		101A		101B	
12:30	101F			101A	

TABLE VIII

DIVISION OF STUDENTS
BY PROGRAM

Program	Method A	Method B	Total
Business	4	1	5
Early Childhood Educ.*	22		22
Elementary Education*		4	4
Liberal Arts		11	11
Liberal Arts plus option**		21	21
Nursing*	14	4	18
Radiologic Technology*		26	26

*Students required to take basic psychology.

**For various reasons, these students were unable to enroll in their desired program. After one semester, they have the option of requesting admission to the program of their choice.

TABLE IX

DIVISION OF STUDENTS
BY SEX AND AGE

Students	Male	Female	Mode and Median Age	Age Range
Method A	0	40	18	17 to 42
Method B	7	60	18	17 to 37

Section 101 A was rescheduled by the registrar's office at the beginning of the semester so that it was necessary to meet for one two-hour session and one one-hour session each week. Method B, the student-centered approach, seemed better for this section in order to prevent the need for two-hour lectures which would have occurred with Method A. It was felt that the assignment of Method A to section 101 A was not as purposive as was the implementation of Method B.

The selection of section 101 F for instruction by Method B was based on two factors. First, it would be of interest to try Method B, the less frequently used technique, on a larger number of students to see if the size of the entire class would have an effect on the results. Second, it would provide a relative balance between section A with 27 students in Method B, and section B with 28 students in Method A.

Another variable was the fact that in section 101 C 14 out of the original 19 students were in the nursing program. The small group method is used at various times in their nursing curriculum during the first semester. In view of this fact, it seemed that section 101 C would not be suitable for Method B.

Methods of Instruction

Common Factors

The semester was fourteen weeks long. The common elements for all the sections in basic psychology were the films, textbooks, assignment procedures, tests, and grading system. The textbook was entitled Giving Psychology Away by Duane Belcher, 1973, Canfield Press. Eight 26-minute films from the Psychology Today Film Series were shown. The accompanying Film Guide was required reading.

Written assignments were required for each day that there was a film, a demonstration, an experiment, or a discussion. The procedure for these written assignments required that the student hand in a 5 x 8 card with his name, the date, his section and the topic. The student was to write a summary of the class activity or film, his own positive and/or negative criticism for that day, and at least one pertinent outside source related to the topic. The general ideas in the outside source were to be compared or contrasted briefly with the topic. Acceptable sources were popular magazines and books as well as professional journals and texts. Some television programs and movies were acceptable for comparison. The purpose of the comparison part of the assignment was to encourage the student to apply his learning to some independent source of interest to him.

The cards had to be handed in no later than two class meetings later. If these reports did not meet with the

approval of the instructor, corrections, could be made and the cards handed in again within two class meetings from the time of the return of the original card.

Three tests were given. The first and second were given on the third class hour of the fifth and ninth week of the semester, respectively. The third test was held during the final examination week. For each of the first two tests, the students had the opportunity of taking a make-up test. If they were dissatisfied with the second grade, one more make-up was given. The highest mark was recorded. The purpose of this procedure was to minimize the pressure of the testing situation and also to allow the student the chance of increasing his mark without penalty of a low grade on the first or second attempt at a test. All the tests and make-ups were objective. No questions were repeated on any two tests.

Final grades were determined by test marks and cards. The three tests were equally weighted. A predetermined division of points indicated the letter grade range. The cards were graded as "do over," "okay," "good," or "very good." The student was allowed to omit three cards without penalty. The cards handed in needed to have at least a rating of "okay" in order to complete the course. Students who were within two points of the next grade range and had received "okay" or better on their cards, were given the next letter grade.

Method A

Method A involved an instructor-directed approach. The instructor presented material in lecture form during the first class hour of the week. The second class meeting was an extension of the lecture, a planned discussion, demonstration, or experiment, which was prepared by the instructor. On the third day a film was presented followed by a discussion led by the instructor.

Two of the third day sessions of the week were for the tests. Three of the third days fell on school holidays.

Method B

Method B involved a student-directed approach with an emphasis on "small groups." On the first day of the week, after an introduction of the topic was given by the instructor, each of the groups would discuss the topic as it related to the assigned chapter for that week. These groups consisted of five to eight members and were formed by the students, rather than arbitrarily by the instructor. During the second class hour of the week, the groups either continued discussing the topic or discussed member-selected applications of the material.

The instructor assumed the role of observer. If students requested information or assistance, the instructor would respond to the individual group. When a clarification was asked by several groups, the instructor would interrupt the discussions, give an explanation, and then direct the

groups to return to their discussions. Frequently, the instructor would suggest sending a member of the group to the library for additional information rather than relying on the instructor for her knowledge and interpretations. During the third class session, a film was shown, followed by a brief class discussion initiated by the instructor, then group discussions.

The students handed in two cards per week. No card was required for the first hour of class specifically. The students were permitted to concentrate on the first or second hour of discussion, or to incorporate the two together in their card report of the week's topic. The second card was based on the film. Because of the two weeks which included testing on the third class session of the week and because of three school holidays, there were five weeks during which only one card was required.

Design

Test

A test (see Appendix A) was developed for administration on the first and final days of the course and was given to all students in basic psychology. The statements on the test were randomized and then re-randomized for the posttest. The test itself consisted of 125 true-false statements which covered the following materials related to psychology: common beliefs, general facts, and application of content.

There were included nineteen statements based on common attitudes which have no true or false answer. These were not included in the final tabulation. These statements were incorporated to provide the student with the opportunity of expressing his own ideas and to alleviate the tension possibly engendered because the test was first given on the initial day of attendance in the psychology class.

The directions given at the time of administration of the test were that the instructor wanted to know what general ideas the students had about psychology. It was also mentioned that some of the statements had no correct answer but rather would indicate their own opinions. These statements were not differentiated for the students from the other statements, so they had no idea which of the 125 statements were considered attitudinal.

In order to test the reliability of the 125 statements the split-half method was used. Two variations were applied. One consisted of the calculation of the reliability coefficient for the odd-even errors from the pretest and posttest scores combined. The second was the calculation of the reliability coefficient based on a comparison of first-half errors with second-half errors for pretest and posttest combinations.

Analysis of Covariance

The main statistical measurement selected for this study was an analysis of covariance of the difference of the

pretest and posttest scores of the participating students. This procedure allows for the advantages of regression and the analysis of variance. One of the benefits of covariance as Garrett (1958) points out, is that it allows for correlation between initial and final scores.

In this study it was impossible to set up a randomized experiment. To further complicate matters, there were other uncontrolled variables such as the effects of other courses taken simultaneously during the chosen testing semester. In order, therefore, to provide a more sensitive comparison of scores, a covariance adjustment for I.Q.'s was incorporated. Cochran (1957) finds this type of combination an important use of covariance analysis.

The I.Q. scores of the students were based on the Otis Lennon Intelligence Test, Advanced Level J. These tests were administered to the incoming students in August, 1973, as part of their entrance requirements. The scores were made available to the author by the Dean of Student Affairs at Trocaire College.

Follow-up

Two months after the completion of the course, a questionnaire (see Appendix C) was distributed to a purposive sampling of students. It was not possible to obtain a truly random sampling of the participants in the study for two basic reasons. The students had a diversity of schedules for the second semester and were subsequently not

readily available for questioning as a group. Secondly, some had not enrolled for the second semester and could not be contacted.

Two consecutive days were selected when the students who had participated in the study were known to be enrolled in classes. The questionnaire was then distributed by three instructors who currently had the students from the study enrolled in their classes. The students were allowed ten minutes at the end of the class to complete the questionnaire.

The questions were meant to help gain some insight into the opinions and criticisms of the students who had taken basic psychology under the two experimental methods. A chi square test of independence was used to determine whether or not the responses of the student were related to the instructional methods in their basic psychology course.

CHAPTER V

RESULTS

Test of Reliability

Correlations were found from the pretest errors by calculating the odd-even errors and the first-half second-half errors. The same method was used for the posttest errors. The reliability coefficients for the whole test were found by using the Spearman Brown prophecy formula (Garrett, 1958). The reliability coefficients, as recorded in Table X, are very high. It seems reasonable to accept the test as reliable.

TABLE X

RELIABILITY COEFFICIENTS: PRETEST AND POSTTEST ERROR SCORES

	Odd-Even Errors	First Half, Second Half Errors
Pretest	.97	.95
Posttest	.80	.95

The actual scores of the students, together with their I.Q.'s can be found in Appendix B.

Analysis of Covariance

The differences of the pretest and posttest scores for the students in both methods were compared with their I.Q.'s from the Otis Lennon Intelligence Test, Advanced Level J (Appendix B). The two methods of instruction were the two treatments in the analysis of covariance. The analysis was programmed on a computer by the Digital Electronics Corporation, Model PDP - 11/45. The programming language was ASA FORTRAN IV.

TABLE XI

ANALYSIS OF COVARIANCE

Source of Variance	Degrees of Freedom	S.S. for $I.Q.^2$	S.S. for $I.Q. \cdot D$	S.S. for D^2
Groups	1	30.060	7.0134	1.6363
Error	104	9914.669	143.1640	3954.4190
TOTAL	105	9944.729	150.1774	3956.0553

$$F = \frac{1.4356}{38.0030} = .03778 \qquad df = 1, 104$$

Under the null hypothesis, variance ratio has the F distribution with parameters 1 and 104. In this test of significance, the variance ratio F equaled .03778, and the probability of incurring a larger F under the hypothesis

exceeds 50%. Consequently, the test indicates no significant difference in treatments, and the null hypothesis is accepted.

Follow-up

Twenty students who had participated in Method A and thirty-one students who had been in Method B were present on the days selected for distribution of the questionnaires. A chi square analysis was performed on their responses to the first four questions. These four questions asked for their ratings of the course in general, the films, the class lectures, and their report assignments, respectively.

TABLE XII

COMBINED RESPONSES FOR QUESTIONS 1-4
ON FOLLOW-UP QUESTIONNAIRE

Students	A (excellent)	B (good)	C (fair)	D (poor)	TOTALS
Method A	(15.68)* 23	(47.05)* 45	(14.51)* 11	(2.75)* 1	80
Method B	(24.31)* 17	(72.94)* 75	(22.49)* 26	(3.65)* 6	124
TOTALS	40	120	37	7	204

* Independent values (f_e)

TABLE XIII

CHI SQUARE VALUES OF RESPONSES
IN TABLE XII

	A	B	C	D
Method A	3.42	0.09	0.85	1.11
Method B	2.20	0.06	0.55	1.51

Sum of X^2 = 9.79; df = 3

The probability of 9.79 with three degrees of freedom is between 0.05 and 0.02. The null hypothesis is rejected and it can be stated that there is a relationship between the method of instruction and the students' responses.

The total ratings for the questions according to the students in each method can be found in Appendix C. There was no large difference in the rating of the course in general by the students in Method A as compared with those in Method B. Ninety percent gave the course a rating of good or excellent.

Some difference can be seen in their response to class lectures. Ninety percent in Method A rated the lectures as good or excellent, while sixty-one percent in Method B rated the lectures as good or excellent. In reviewing the comments made by those in Method B, several noted that the lectures were too short.

More class discussion was a choice of improvement by 75% of the students in Method A; but none indicated they

wanted more lectures. Thirty-two percent in Method B wanted more lectures.

The responses of those in Method B regarding group discussions need special consideration. Ten students wanted more small group discussions whereas nine wanted the discussions to be for the class as a whole. This preference was indicated again in the final question of the questionnaire meant specifically for those in Method B. Twenty-three said they had disliked the small groups method. Their reasons can be categorized as "little was done" and "unorganized." Only eight replied that they liked the small groups method. Their reasons were that they felt it was a constructive method and they enjoyed sharing their feelings.

CHAPTER VI

DISCUSSION

Variables

Procedures

One of the first areas of scrutiny is the selection of the sections for each method. The rationale as explained in Chapter II was based on subjective analysis of the possible alternatives of section assignment of the two methods. The nursing students' exposure to small group discussions and the necessity of the split into one one-hour class and one two-hour session for section 101 A are examples of the major variables that often need to be handled arbitrarily by the experimenter.

A more tangible factor that could have contributed to bias would have been student awareness of the experiment while it was in progress. From informal questioning of students after the semester, the students were not aware of any great differences among the sections until these were pointed out to them. The students also had no knowledge throughout the semester that the original test would be given to them again. These controls can be considered to have eliminated some potential experimental bias.

Methods

Various studies have been performed using teacher-oriented and student-oriented techniques. The uniqueness in this study is the fact that it was conducted at a junior college. It is noteworthy that the findings of no significant difference in retention of material have been found in previous studies at four year institutions.

The selection of the two specific methods needs to be reviewed in respect to the preferences of the faculty at Trocaire College. The validity of the methods selected would have been reduced if the preferences of the faculty had not been taken into consideration. Since there was such a diversity of techniques used by the faculty, it was advantageous to incorporate the most frequently used into one methodology and a less frequently used technique into the second methodology.

The amount of reading, the number of card reports, the films, and grading system were the same for the students in both methods. The major distinction was that the students in Method A were directed as a class by the instructor in all activities. The students in Method B had a limited amount of instructor orientation. The discussion groups were organized and conducted by the students while the instructor maintained the role of observer.

The purpose of the small group approach in Method B was to give students an opportunity to discuss the material among themselves rather than with the instructor as the

director of class discussions. These groups were student-selected and the membership in them remained the same throughout the semester. The only changes were due to students who had changes in schedules and either left or joined one of the other sections.

It is possible that the groups were inherently cohesive, but low in group productivity. Those who were dissatisfied with the method may have had their own grades as their primary goal and therefore neglected the group's goal to discuss the various topics (Middlebrook, 1974). The requirement of individual card reports may have contributed to some student emphasis on individual goals rather than the goals of the group. A system involving group reports requiring contribution from all members could possibly increase member satisfaction. The lack of the instructor's expertise in the field of group dynamics may have been another contributing variable.

Instructor

The difference between the instructors and their assigned schedules were major deterrents in attempting a comparison of instructors as well as methods. The problem of unconscious instructor bias, however, remains an uncontrolled variable. There is no reliable method of control or of analysis at the present time to deal with this matter. McKeachie (1967) mentions this factor as an unsolved problem.

During the course, the instructor observed that there were times the small groups were having greater difficulty than usual in their discussions. Several explanations could apply to this problem: the students' inexperience with the method, the brevity of introduction of new material by the instructor, lack of student motivation because of the topic, or some combination of factors.

Occasions were also evident when the instructor felt that small group discussions would have fit well in the section taught by Method A. Because these would not have been consistent with the framework of Method A, it was necessary for the instructor to use class discussions instead.

More experience with different techniques by students and instructor would contribute to a better interpretation of the instructor's effect on the different methods. In this study it is necessary to rely on the instructor's reflections with no direct measure of her influence on the students. The most tangible indirect evaluation can be seen in the students' reaction to the course as outlined in the follow-up study.

Statistical Measurement

The split-half method of reliability was the most practical statistical technique to use on the pretest and posttest, particularly in consideration of the number of statements. Garrett (1958) points out that the longer the

test, the more dependable the split-half method. The result of this method indicated reliability from two variations: odd-even comparison and first-half second-half comparison of errors.

The use of the analysis of covariance provided a means of comparing the variability between and among the pretest and posttest scores. The inclusion of the I.Q.'s added to the sensitivity of the covariance. Since the means were so close, a simple analysis of variance could have been performed. The decision to use the I.Q.'s and the covariance analysis added to the precision of the comparison of the students' scores.

In a review of the chi square results on the first four questions of the follow-up questionnaire, it is possible to conclude interaction since dependence was demonstrated. This assumption is based on Steele and Torrie (1960). There was generally greater satisfaction among the students in Method A than in Method B.

Their choices of improvements in the course are of interest. Those in the teacher-oriented method wanted more discussion while those in the student-oriented method wanted more lecture. One can only ask if the happy medium can ever be achieved.

Greater dissatisfaction with the reports was expressed by students in Method B. Their reasoning was that their reports were often redundant and unnecessary when their discussion groups covered the material well. In contrast,

several students in Method A commented that the reports helped them integrate and understand the material better. These observations would be important to consider in using the card report system again.

The last question on the follow-up study was meant exclusively for the students in Method B. The open end format was used in order to provide the respondents with an opportunity to express their feelings more freely. The disadvantage is the difficulty in a quantitative analysis of their comments. Their remarks can be categorized as demonstrating general dissatisfaction with the small group discussions. Ten felt little was done in them; seven said they were unorganized; and four did not like the fact that some members did not contribute. Two students felt there were too many discussions. The positive comments included five students who thought it was a constructive method and three who liked to share their feelings with other students. The position of the last eight students in their groups would be worthy of investigation. Since the follow-up studies were handed in anonymously, and since no records were kept by the instructor about specific group interaction patterns, it is only speculative to comment that these eight students may have held leadership or dominant positions in their respective groups.

Questions 6-9 proved to be redundant. Students generally reiterated their choices and comments from the first five questions. Therefore, a discussion of these is

not necessary.

Interpretation of Findings

No significant difference between teaching methods as measured by retention, is a result similar to other studies conducted at four year colleges in psychology courses. Along with the conclusion of no difference, Keller, Stalling, Mauri, Pennypacker, Alba, and Johnston each indicate either student preference or improved attitudes among their students in the experimental groups.

In this study, the opposite occurred. Those in the small group discussion approach were more dissatisfied than those in the teacher-oriented method. One possible source of explanation may be the preconceived expectations of the students about methods in junior college instruction. It is possible that many felt they would be "taught" rather than expected to actively participate, as was the expectation in the small group approach. The issue of group dynamics, however, cannot be overlooked.

Another source of explanation may be the fact that the majority of students were female. There is no practical way of comparing sex differences within the study because of the few males in the college. Similarly, there is no way to compare this variable with the studies on the four year level since sex was not a measured factor in them.

Atherton's ideas (1972) would be in close agreement with those of the dissatisfied students. Although his own

studies of methodological differences indicate similar retention among students, his feeling is that students need more teaching and more contact with their teachers. Perhaps this kind of intuition, although scientifically difficult to measure, is the same as that of the dissatisfied students in the student-oriented method.

Another possible explanation may be found in unconscious instructor bias. The fact that this was the first attempt at using the small groups method throughout a whole semester, instead of as an auxiliary technique, may have provided a feeling of experimentation or insecurity which could have been transmitted to the students. It could then have contributed to student uneasiness and ultimate dissatisfaction.

These possible explanations raise a related question. Would the minority of students who like the method have the same reaction with another instructor or in another course using small groups? Such questions can only be answered through extensive research in the instructional methods and the student population in the junior college setting.

CHAPTER VII

SUMMARY AND CONCLUSIONS

Two methods of teaching basic psychology on the junior college level were compared. Method A was teacher-oriented; Method B was student-oriented. Several factors were identical in both methods. These were the texts, films, tests, reports, and grading system. The major distinction was the methodology during the actual class hours. In Method A, lectures were used with teacher-directed discussions. In Method B, the emphasis was on student discussion groups.

A pretest and posttest containing the same 125 true-false statements were given to the students. In an analysis of covariance, the I. Q.'s of the students and the difference scores from the tests were used. The analysis indicated no significant difference between the treatments. This result is similar to several studies at four year colleges which compared methods and examined retention levels.

Differences in student opinion were found in a follow-up study which was given to a purposive sampling of students two months after the completion of the course. Those in Method A expressed an interest in having more discussions. Those in Method B wanted more lectures. A general

dissatisfaction with the small groups discussion technique was indicated by the majority of the students in Method B.

Similar research on the four year level has shown greater satisfaction and improved attitudes among students exposed to the experimental methods. Since the reaction of the junior college students in the experimental method was negative, the differences between junior college students and four year college students deserves extensive analysis. This study can only provide speculative answers from the position of the junior college. One possible explanation may be that the expectations of junior college students in their courses are different from those of the students at four year colleges.

The type of junior college in which this study was conducted, may provide some possible explanations of the students' responses to the instructional methods. The majority of the students is female, and has indicated a choice of career. Health related fields are the preferences of the students af Trocaire College. Some provocative questions can be raised in view of these factors. What influence does the male-female ratio have on student preferences of methodology? Is there a correlation between the student's career choice and his expectations of a college course? Are the methods the students prefer for a psychology course, as indicated in this study, the same ones they would prefer in other courses?

The effect of the instructor cannot be ignored. In

an attempt to de-emphasize the experimental aspects of the course, the students were not informed of the different methods for the various sections. Although McKeachie has warned about the effect novelty may have on student reaction, it is possible that the awareness of it is correlated with positive feelings toward an experimental method.

Rather than an exact replication of this study, better control over the group dynamics may demonstrate greater precision. Further studies of this type and variations of it will establish the research in instructional psychology at the junior college level. Comparisons of instructors at the same and different institutions also need to be initiated.

In order to provide an explanation of the unique results of this study in regard to student preferences, a comparison between junior college students and four year college students is in order. A basic psychology course at both levels with the same experimental methodology employed would provide a more precise and sensitive study with which to compare the results of this investigation.

The possibilities for research are numerous. It is hoped that the impetus in investigation at the junior college level, particularly in instructional psychology, will begin to keep pace with the needs and demands of our society which is taking a new look at the junior college and its place in the educational schema.

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APPENDIX A

TRUE-FALSE STATEMENTS FOR PRETEST AND POSTTEST

TRUE-FALSE STATEMENTS

First Number: rank order in pretest.
Second Number: rank order in posttest.
Asterisk: attitudinal statements, not included in tabulation.

1 (82)* Studying statistics would be boring and impractical for my choice of vocation.

2 (13) Social psychology is the study of groups.

3 (70) Prejudice is a negative feeling toward a person or thing based on personal experience.

4 (83) An optical illusion is a misinterpretation of reality.

5 (47) Most species of animals are so aggressive that they generally fight to the death.

6 (12) Intelligence tests are often culturally biased.

7 (5) Psychotic persons are more easily cured than neurotics.

8 (53) The popularity of marriage is waning in America.

9 (115) Children have relatively insignificant problems, whereas, adults have real essential problems.

10 (101) People blind from birth who later have their sight restored, cannot tell the difference between such forms as a triangle and a square, at first.

11 (102) Men are more intelligent than women.

12 (11) Cognitive dissonance means that a person has the ability to maintain two different points of view simultaneously without conflict.

13 (96) Children's temper tantrums generally cease if parents ignore rather than punish the child.

14 (112) Sigmund Freud is the father of psychology.

15 (91) Projective tests give direct information about an individual's personality.

16 (18) There is a motive behind everything we do.

17 (49) A mnemonist is a mind reader.

18 (65)* People should think of mental illness as just another illness.

19 (54) Delinquency is highly correlated with mental deficiency.

20 (58)* Newspapers, television and magazines are as reliable a source of information as scientific investigation.

21 (105) People, throughout the history of mankind, have always thought of love, sex, and marriage as the ideal combination.

22 (120) Punishment may suppress an undesirable behavior but other undesirable effects may take place.

23 (100) Projection is a way of disowning one's own motives and seeing them in others instead.

24 (36) Most people on welfare could be working but have figured out ways of staying on welfare as their preference.

25 (119) There are cultures in which women are more sexually aggressive than men.

26 (32) The controversy, "born a leader" vs. "made a leader," has not been resolved.

27 (31)* It is rather easy to tell who is mentally ill and who isn't.

28 (45) Fears, such as fears of spiders, are inborn in some people.

29 (37) "Timing Out" is a form of social isolation for improper behavior.

30 (72)* Psychology should be taught only to college students since it would be difficult for less capable people to grasp the material.

31 (46)* Ways can be found to study all kinds of behavior.

32 (118) A teacher's expectations of a student cannot alter the student's performance since performance is only determined by ability.

33 (66)* All people at one time or another show signs of neurotic behavior.

34 (62) Autism, childhood schizophrenia, is caused by birth trauma.

35 (106) The majority of American college students reject the traditional American values.

36 (113) Blacks in our country have a poorer health expectancy and shorter life span than whites.

37 (55) Skinner's experiments with pigeons and mice have contributed to theories of learning.

38 (93) A psychologist has the same educational background as a psychiatrist.

39 (56) Peers are more important in childhood than in adolescence.

40 (103) There is a simple cause-effect relationship to explain all behavior.

41 (17) Homeostasis is the internal balance of the body.

42 (74)* All mentally ill people should be isolated from the rest of the community because they are potentially dangerous.

43 (110) Identification is the same as imitation.

44 (20) An understanding of behavior can be reduced to a simple cause and effect sequence.

45 (107) Women's sense of smell seems to be more acute than men's.

46 (84) A child needs to be egocentric before he is sociocentric.

47 (104) Young people are more idealistic than older people.

48 (114) Women have a maternal instinct.

49 (27) Psychology is the study of mental telepathy, extrasensory perception, and astrology.

50 (75)* It is almost impossible to use scientific methods to study psychological matters.

51 (1) Small groups have more social behavior than large groups.

52 (95) People who are criminals are also called sociopaths or psychopaths.

53 (26)* Psychology has clearly distinguished between normal and abnormal behavior.

54 (63) Psychology has proven that aggression is a natural instinct, even in man.

55 (76) Self-description changes over time.

56 (33) Rebellious students select causes that are closely related to their own personal lives.

57 (81)* Human behavior is based on a complexity of determinants and therefore is not readily predictable.

58 (48) Interpersonal relations can be reduced to a formula or a technique.

59 (71) Personality is described psychologically in terms of good and bad.

60 (24)* There are many psychological statements which have been proven beyond a doubt.

61 (111) Children learn their native language in the same way they may learn other languages later on in life.

62 (14) The kind of upbringing will have an effect on whether a person is a low or high achiever.

63 (116) Man influences his environment as well as the environment influencing him.

64 (98) Creative people, in general, are independent and non-conforming.

65 (117)* Psychologists do not need to understand the physiology of the body since it has little effect on behavior.

66 (90) Alcohol is psychologically as well as physiologically addictive.

67 (97) It is possible to pay full attention to two things at the same time.

68 (35) The idea that the more independent man becomes, the more isolated and alone he becomes, is an accepted theory among many psychologists.

69 (38) Unlike other sciences, the ideas in psychology are all new and rooted in the twentieth century.

70 (69)* There are no conflicting views among psychologists.

71 (4) People do not love automatically; love is learned.

72 (44) Play is unnecessary for children and they would learn more if play were restricted.

73 (60) The idea of contract marriages for short periods of time has been a part of some societies.

74 (57) It is natural to try to organize sensory cues into some kind of a pattern.

75 (43) Pavlov's classical conditioning experiments demonstrate that human and animal subjects alike have control over what they will learn and don't learn.

76 (88) Identity is of little concern to the individual during transition periods such as disasters and conflicts.

77 (8) In solving problems, people sometimes have difficulty, because of fixedness.

78 (109)* Psychologists know more about individual behavior problems than people in any other discipline.

79 (16) Apes can be taught to use sign language.

80 (94)* There is too much theory and not enough practical application in the field of psychology.

81 (121) Teaching machines are meant to replace teachers.

82 (123) Just as many women as men are colorblind.

83 (64) People can develop an increased tolerance for such drugs as marijuana.

84 (122) It is possible that people could be trained to self-control their heartbeat and lower their blood pressure.

85 (30) There are experiments in which direct stimulation of the brain controls behavior.

86 (92) Freudian theory proposes that mental illness is rooted in childhood.

87 (15) An infant's sensory abilities are extremely rudimentary.

88 (50) Synanon is a mental institution.

89 (59) Our memory of an event is an exact replica of the actual event.

90 (108) Stages of development can be delineated by chronological ages.

91 (21) Marriage based on romantic love alone is enough to make it a successful marriage.

92 (2) Neurosis is characterized by being out of contact with reality.

93 (61) Men and women vary in their attitudes toward many topics.

94 (87) Perception is the process of interpreting sensory information.

95 (39) There are few models of happy working women in America.

96 (80) Those in the most hopeless situations are least likely to revolt.

97 (42) People who overeat generally have a real physiological problem that causes them to overeat.

98 (9) All motives of human beings are learned.

99 (41)* Explanations of behavior in psychology are based on the opinions of psychologists.

100(125) A "philosophy of life" is usually reached in late adulthood.

101 (79) In today's society, the status of a working woman is still determined by her husband's achievements.

102 (89) Schizophrenia is a split in personality in which the person acts like two different persons.

103 (78) The competitive spirit fits in well with most religious values.

104 (10)* Psychologists can predict as well as describe behavior.

105 (28) Instincts are unlearned patterns of behavior that are the same for all members of a species.

106 (51) Our intelligence is inherited and cannot be changed.

107 (99) Poor nutrition can have a permanent effect on mental abilities.

108 (51) An adolescent in our society is not considered an adult until he assumes adult work and family roles.

109 (67) A group is any number of people in close proximity.

110 (86) Physical punishment, such as spanking, has the effect of only temporarily eliminating the undesirable behavior.

111 (6) Man has as many instincts as other animals.

112 (34) Phobias are realistic fears that most people have.

113 (23) Attitudes and values are synonymous.

114 (22)* Using the scientific method in psychology limits what can be applied in practice.

115 (7) A course in basic psychology teaches students how to use psychoanalysis in their own lives.

116 (40) Our personality is inborn, that is, it is present in total when we are born.

117 (29) Sex roles are not learned by children until they are in school.

118 (3) A fact is said to be learned only if there is a fairly long and lasting change in behavior.

119 (25) When looking at something, we tend to organize it "to make sense" out of it.

120 (52) Instead of an emphasis on competition, it is possible that education in the future will emphasize self-evaluation.

121 (19) We perceive exactly what is really there in our visual field.

122 (85) An understanding of psychology is a prerequisite for being a good parent.

123 (73) Geniuses have a problem solving method that average people cannot apply.

124(124) A teaching machine is a method of programmed instruction.

125 (68) If we could get rid of all our anxieties, we could function at our best.

APPENDIX B

STUDENT I.Q.'S, PRETEST AND POSTTEST SCORES

METHOD A: SECTION B

Student	I. Q.	Pretest Score	Posttest Score
1	116	33	23
2	112	47	33
3	118	45	28
4	102	39	17
5	96	46	24
6	108	34	19
7	104	38	28
8	111	41	30
9	122	26	27
10	102	42	30
11	119	37	18
12	90	45	48
13	106	37	30
14	108	44	36
15	101	42	28
16	102	52	24
17	122	34	29
18	96	36	15
19	100	40	23
20	102	43	31
21	114	39	21
22	98	49	45
23	104	32	26

METHOD A: SECTION C

24	112	32	18
25	103	31	17
26	92	51	40
27	107	26	19
28	92	51	40
29	96	28	16
30	92	43	29
31	110	43	30
32	102	45	20
33	111	26	20
34	92	50	33
35	98	48	25
36	99	48	28
37	102	31	29
38	120	41	21
39	105	41	31
40	106	44	29

METHOD B: SECTION A

Student	I. Q.	Pretest Score	Posttest Score
1	120	27	11
2	116	43	27
3	98	53	41
4	119	25	12
5	120	40	22
6	109	40	18
7	105	34	22
8	103	44	31
9	112	48	29
10	102	33	26
11	122	31	21
12	104	43	28
13	118	38	25
14	111	43	32
15	107	38	32
16	103	39	30
17	119	35	23
18	122	45	33
19	110	45	32
20	115	38	24
21	115	38	26
22	114	28	24
23	115	41	30
24	113	30	19
25	114	35	35

METHOD B: SECTION F

26	98	46	29
27	86	44	48
28	100	38	15
29	111	49	31
30	102	54	35
31	99	38	25
32	107	40	22
33	113	33	13
34	134	27	15
35	114	28	14
36	102	28	27
37	102	40	27
38	97	40	37
39	105	36	16
40	106	39	31
41	87	43	40

Student	I. Q.	Pretest Score	Posttest Score
42	125	39	26
43	83	42	30
44	100	45	32
45	110	40	24
46	97	39	33
47	102	45	25
48	86	42	24
49	93	39	30
50	100	42	39
51	107	50	30
52	92	44	32
53	102	46	25
54	116	35	26
55	104	54	36
56	98	47	29
57	108	37	14
58	109	35	19
59	102	43	42
60	97	40	31
61	106	33	20
62	102	33	27
63	95	38	19
64	92	56	41
65	99	37	23
66	88	36	25
67	113	36	18

APPENDIX C

FOLLOW-UP STUDY AND TABULATIONS

FOLLOW-UP QUESTIONNAIRE

1. In general, how would you rate the course?
   a. excellent ___
   b. good ___ Comments:_____
   c. fair ___
   d. poor ___

2. How would you rate the films?
   a. excellent ___
   b. good ___ Comments:_____
   c. fair ___
   d. poor ___

3. How would you rate the class lectures?
   a. excellent ___
   b. good ___ Comments:_____
   c. fair ___
   d. poor ___

4. How would you rate the reports, i.e., cards?
   a. excellent ___
   b. good ___ Comments:_____
   c. fair ___
   d. poor ___

5. Which would you like to have more of in a course like basic psychology? (You may check more than one.)
   a. more films ___
   b. more lectures ___
   c. more discussions ___
   d. more projects ___
   e. other_____

6. What did you like most about the course?

7. What did you like least about the course?

8. What would you suggest to improve the course?

9. Other comments that may not have been covered in the above._____

10. Those who were in the sections of basic psychology with the discussion groups: Indicate your feelings about this method._____
_____

TABULATIONS

Question 1.

	Responses			
Method	a	b	c	d
A	6	13	1	-
B	4	22	5	-

Question 2.

	Responses			
Method	a	b	c	d
A	5	11	4	-
B	6	21	4	-

Question 3.

	Responses			
Method	a	b	c	d
A	7	11	2	-
B	2	17	10	2

Question 4.

	Responses			
Method	a	b	c	d
A	5	10	4	1
B	5	15	7	4

Question 5.

Method	Responses a	b	c	d	e
A	7	-	15	4	-
B	14	10	10* 9**	5	-

* with whole class rather than small groups
** continue with small groups

Question 10.

Students in Method B only.

Positive Responses	
Satisfied with small groups	
"constructive"	5
"shared feelings"	3

Negative Responses	
Dissatisfied with small groups	
"little done"	10
"unorganized"	7
"too many"	2
"little participation"	4

VITA

BEVERLY ANN SLICHTA

Candidate for the Degree of

Master of Science

Thesis: THE EFFECTS OF TWO METHODS OF TEACHING BASIC PSYCHOLOGY IN A JUNIOR COLLEGE

Major Field: Psychology

Biographical:

Personal Data: Born in Dunkirk, New York, June 4, 1945, the daughter of Robert L. and Mary Jane Michalak. Married, August 27, 1966, to Dennis W. Slichta.

Education: Graduated from Cardinal Mindszenty High School, Dunkirk, New York, in June, 1962; received Bachelor of Arts degree in sociology from D'Youville College, Buffalo, New York, in June, 1966; attended the State University of New York at Fredonia in spring, 1973; attended Oklahoma State University and completed requirements for the Master of Science degree in May, 1974.

Professional Experience: Psychology teaching assistant at Oklahoma State University, 1966-1967; part time instructor of psychology at Nazareth College of Rochester, New York, 1967-1969; part time instructor of psychology at D'Youville College of Buffalo, New York, 1970-1972; full time instructor of psychology at Trocaire College of Buffalo, New York, 1972 to the present.