

**A COMPARISON OF LECTURE-CASE STUDY AND LECTURE-COMPUTER
SIMULATION TEACHING METHODOLOGIES IN TEACHING
MINORITY STUDENTS BASIC MARKETING**

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Ideally, university students enrolled in curricula for professional careers need instruction that offers knowledge and practical experience for future employment. In teaching basic marketing it is desirable that all instruction should be complemented by practical applications that reinforce classroom activities.

Typically, two methods of instruction, lecture and case study, have been used predominantly among marketing educators in teaching basic marketing. The traditional lecture method often involves little more than one-way communication, i.e., there may be a question-answer period but the main emphasis is upon a teacher who stands in front of the class and lectures. The case study method attempts to provide an environment which may reinforce the principles of marketing. This is accomplished by allowing the student in the classroom to solve hypothetical marketing problems. But these may not be totally authentic because of the instructor's lack of skill in selecting suitable cases or the case discussion can become superficial to the participants. In recent years, however, the computer has been used to simulate real-life situations in business and economics. These computer simulations offer numerous extensions of practical applications and experience for students.

STATEMENT OF THE PROBLEM

A study at Xavier University of Louisiana, a predominately Black university, was undertaken to develop a new computer simulation game called BROADEC and to ascertain how a lecture-computer simulation game, as a teaching method, compared to the more traditional lecture-case study instructional method. Also, this study determined: the teaching method preferred by the student; student interest; student motivation; and the student's personal feeling on attained learning.

The foregoing statements generated the following hypotheses for this study:

Students in the lecture-computer simulation group will score significantly higher grades than students in the lecture-case study group.

The lecture-computer simulation teaching methodology will be preferred over the lecture-case study instructional method.

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Student interest will be higher in the lecture-computer simulation class than in the lecture-case study class.

Students will feel they are motivated to a higher extent in the lecture-computer simulation class than in the lecture-case study class.

Students will feel they attained more knowledge in the lecture-computer simulation class than in the lecture- case study class.

BROADEC: A COMPUTER SIMULATION GAME

BROADEC is a computer simulation game designed for application in marketing, broadcast economics, or management courses where the participants make managerial decisions based on the parameters of the game. Game participants are divided into three groups called organizations. An organization is defined as a broadcasting station competing against two other stations in one broadcast operation. A broadcast operation is defined as a specific geographical market in which three organizations compete. The geographical market described is an area encompassing fourteen counties with a large metropolitan area of 720,000 households inclusive with 700,000 households having television sets. The New Orleans, Louisiana, market is similar to the market described in BROADEC. The organizations for this game are considered local network-affiliated television stations which begin the computer simulation game with an initial capitalization of \$200,000 derived from the sale of capital stock.

Each organization completes an input sheet that involves decision making concerning the programming mix. The cost of a one-minute commercial for the morning, afternoon, and evening -time periods; the number of salesmen; and research data are variables of the programming mix. The decision objective is for each organization to choose the highest rated programming and to sell its time at a competitive rate. The decision-makers are provided research data in the following areas: quarterly sales index, yearly sales index, the cost of advertisements for all the organizations, the number of advertisements sold in each time slot by all the organizations, and the ratings. Upon completion of all sections, the input sheet is given to the instructor who transfers the information to I.B.M. cards for computer analysis.

Each organization in the BROADEC computer simulation game receives an output sheet from the FORTRAN compiled computer that contains seven items of information. The research data requested by the organization are the first on the output sheet followed by the profit and loss statement. The profit and loss statement is defined for this game as an accounting statement which shows the dollar earnings or losses for each organization at the end of a quarter. The wild card, which is defined as an out-of-the-ordinary situation in which the instructor imposes a certain event on the entire broadcast operation or on one organization, appears next followed

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by the balance sheet. The balance sheet of each organization depicts its financial position as of the last day of the quarter. The cost of advertising for the organization, the number of advertisements sold by the organization, the organizations' ranking, and the instructor's sheet are the last items to be placed on the output sheet. With the development of BROADEC, the design of the study was formulated.

METHODOLOGY

The basic research design of this study was experimental. One variable, the teaching methodology, was manipulated. The manipulation occurred by using two sections of a three-semester-hour course in basic marketing. Twenty-eight to thirty-one students were enrolled in each section. This course was taught at Xavier University of Louisiana during the 1974-75 academic year. Students were divided into two treatment groups: (1) the lecture-case study section and (2) the lecture-computer simulation section. The participants in each section were exposed to the four functions of marketing: product, place, price, and promotion. The subject matter was the same in each section but the teaching methodology was different.

The students in each section were given two identical, objective, multiple choice examinations: the mid-term test and the final examination. All examinations were hand tabulated by three coders.

The effects of the teaching methodologies employed in the lecture- case study and the lecture-computer simulation sections were measured by the analysis of variance statistical method. The .05 level was used to test for significance. A questionnaire was given to each student to ascertain the teaching method preferred by the student; student interest; student motivation; and the student's personal feeling on attained learning.

RESULTS AND DISCUSSION

The results of the study indicated that four of the five hypotheses were accepted. No significant difference occurred when the grades of -the lecture-case study section were compared to the lecture-computer simulation section. Table 1 reveals the mid-term test probability of .9593, as compared to the final examination probability of .2428. The mean grades were basically the same for the mid-term test, however, the students in the lecture-computer simulation class had a higher mean grade than the students in the lecture-case study class.

Table 2 presents the median score of each test for the lecture- case study section and the lecture-computer simulation section. A survey of the medians reveals that the lecture-computer simulation class had the higher medians when compared to the other section. A comparison of the medians to the means indicated that the results are fairly similar.

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TABLE 1

THE ANALYSIS OF VARIANCE, STATISTICAL COMPARISON OF THE LECTURE-CASE STUDY TEACHING METHODOLOGY AND THE LECTURE-COMPUTER SIMULATION TEACHING METHODOLOGY FOR BOTH THE MID-TERM TEST AND THE FINAL EXAMINATION

Test	Mean Grades		Probability
	Lecture-Case Study	Lecture-Computer Simulation	
Mid-Term	51.5625	51.4411	.9593
Final	68.4838	72.5172	.2428

TABLE 2

THE MEDIANS FOR EACH TEST IN THE LECTURE-CASE STUDY CLASS AND THE LECTURE-COMPUTER SIMULATION CLASS

Class	Mid-Term Test	Final Examination
Lecture-Case Study	50	71
Lecture-Computer Simulation	51	75

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The standard deviations of the two sections reveal that the lecture-computer simulation section deviated the least (see Table 3).

Using a one to five ranking system, in which one represented good and five represented bad, the students were asked to fill out a questionnaire to determine: the teaching method preferred by the student; student interest; student motivation; and the student's personal feeling on attained learning.

The student evaluation of the teaching methodology used in each class as shown in Table 4 reveals that the student preferred the lecture-computer simulation class over the lecture-case study class. Thus, the second hypothesis was accepted.

Table 5 shows -that the third hypothesis was accepted, i.e., student interest was higher in the lecture-computer simulation class than in the lecture-case study class. Students felt that they were motivated to a higher extent in the lecture-computer simulation class than in the lecture-case study class (see Table 6). Table 7 reveals that the fifth hypothesis was supported. Thus, students felt they attained more knowledge in the lecture-computer simulation class than in the lecture-case study class.

The majority of the students participating in the study were female, under twenty. The subjects were Black, single, and classified as undergraduates. The grade point average of the two classes was 2.5 on a 4.0 scale. These data, sex, age, race, marital status, student classification, and grade point average, were obtained at the initial class meeting by asking each student to complete a questionnaire.

A review of the means revealed that the scores recorded were not very high. This was expected since the tests were made purposely difficult for students at this stage in their curriculum in order that the tests would measure, to the fullest extent practical, the knowledge acquired in this specific course rather than test their cumulative knowledge in the area.

Students in the lecture-computer simulation section appeared to show more interest than those in the lecture-case study section. There was considerably greater incidence of informal, out-of-class interaction between the instructor and the organizations, or representatives of each organization, in the lecture-computer simulation section. The members of the lecture-case study section showed less overt interest because only a few persons participated and few students read the cases. In an attempt to alleviate these two problems, the instructor initiated, during the second week of class, the practice of randomly selecting students to comment about a particular case. Class participation was thus stimulated.

Other studies in business have revealed that no statistical difference occurred when comparing grades between the lecture-case study and the lecture-computer simulation teaching methodologies. Thus, this study showed -that Black students react in a similar manner when

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TABLE 3

THE STANDARD DEVIATIONS FOR EACH TEST IN THE LECTURE-CASE STUDY CLASS AND THE LECTURE-COMPUTER SIMULATION CLASS

Class	Mid-Term Test	Final Examination
Lecture-Case Study	10.26	15.13
Lecture-Computer Simulation	9.82	10.95

TABLE 4

THE STUDENTS' EVALUATION OF THE TEACHING METHODOLOGY USED IN EACH CLASS

Rank	Lecture-Case Study Class		Lecture-Computer Simulation Class	
	Number	Percentage	Number	Percentage
Good				
1	2	6.4%	12	42.8%
2	7	22.6%	8	28.6%
3	15	48.4%	5	17.9%
4	6	19.4%	1	3.6%
5	1	3.2%	2	7.1%
Bad				
Total	31	100.0%	28	100.0%

TABLE 5

THE STUDENTS' INTEREST EVALUATION IN EACH CLASS

Rank	Lecture-Case Study Class		Lecture-Computer Simulation Class	
	Number	Percentage	Number	Percentage
Good				
1	5	16.1%	11	39.2%
2	14	45.2%	9	32.1%
3	7	22.6%	5	17.9%
4	4	12.9%	2	7.2%
5	1	3.2%	1	3.6%
Bad				
Total	31	100.0%	28	100.0%

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TABLE 6

THE STUDENTS' MOTIVATION EVALUATION IN EACH CLASS

Rank	Lecture-Case Study Class		Lecture-Computer Simulation Class	
	Number	Percentage	Number	Percentage
Good				
1	4	12.9%	7	25.0%
2	13	41.9%	9	32.2%
3	10	32.3%	8	28.6%
4	3	9.7%	2	7.1%
5	1	3.2%	2	7.1%
Bad				
Total	31	100.0%	28	100.0%

TABLE 7

THE STUDENTS' PERSONAL FEELING ON ATTAINED LEARNING IN EACH CLASS

Rank	Lecture-Case Study Class		Lecture-Computer Simulation Class	
	Number	Percentage	Number	Percentage
Good				
1	4	12.9%	11	39.2%
2	6	19.3%	7	25.0%
3	17	54.8%	6	21.5%
4	2	6.5%	3	10.8%
5	2	6.5%	1	3.5%
Bad				
Total	31	100.0%	28	100.0%

examination grades are compared.

It is believed hypotheses two, three, four and five were accepted since the lecture-case study section by its very nature allows many theories to be introduced and the student must decide for himself which theory is applicable to the given situation. Whereas, the student in the lecture-computer simulation class can test a particular theory and receive through the output sheet a definite answer to ascertain if the theory works.

The findings of this study indicated that the differences among teaching methodologies are not very substantial with respect to grades earned by students in the two groups. However, the students definitely preferred the lecture-computer simulation teaching methodology. Student interest was much higher in the lecture-computer simulation class than in the lecture-case study class. Students felt that they were motivated to a higher extent in the lecture-computer simulation class. The students' personal feeling on attained learning revealed that learning was believed higher in the lecture-computer simulation class. Thus, four of the five hypotheses were accepted.

CONCLUSION

The findings of this study indicate that the differences among the teaching methodologies are not very substantial with respect to grades earned by students in the two groups. This information leads one to conclude, based on the limitations of the study, that in teaching basic marketing, the students learn equally well when using either the lecture-case study or lecture-computer simulation teaching methodologies. The foregoing conclusion would imply to the basic marketing instructor that learning retention is generally similar for the two teaching methodologies explored. There is a need for future studies to ascertain if learning retention is similar over an extended period of time.

When comparing the examination grades of the lecture-case study teaching methodology to the lecture-computer simulation teaching methodology, Black students react in a similar manner to their White counterparts, that is, no significant difference is attained.

The third conclusion is based upon the acceptance of hypotheses two, three, four, and five, i.e., the lecture-computer simulation class was the preferred class with regard to teaching methodology; the students exhibited higher interest in this class; the students indicated they were motivated to a higher extent in this class; and the students personally felt that they attained more learning in this class. When the participants were given lectures in the lecture-computer simulation class, BROADEC acted as a reinforcing agent to the lectures, thus, the acceptance of these four hypotheses. Moreover, BROADEC allowed for more immediate feedback, thus, closure was achieved swiftly and overtly. BROADEC permits experiential learning which enables the student to be an active rather than a passive learner. Certainly, replication and expansion of this study are desirable to ascertain if these conclusions have generality.