

# Experiential Learning Enters the Eighties, Volume 7, 1980

## AN EVALUATION OF IN-CLASS STUDENT INVOLVEMENT

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### ABSTRACT

This paper is an empirical study to examine the Hypothesis that student involvement, even to a limited extent in traditional bound "lecture courses, will increase learning. The concept under consideration is measuring the value of student involvement. The purpose is to generate data based on our observations.

### INTRODUCTION

For some time now it has been the accepted belief that the participative process of learning is an extremely valuable method to increase the understanding and retention of conceptually oriented material. This process is commonly referred to as experiential learning. However, the extent to which participation must take place in order to be considered experiential is still open to question.

Experiential learning has been defined many ways. One is Hover and Whitehead's:

Experiential learning exists when a personally responsible participant cognitively, effectively, and behaviorally processes knowledge, skills, and/or attitudes in a learning situation characterized by a high level of active involvement.\*

Therefore, in the vernacular, experiential learning would be to learn by doing; so this is to say that if a person is obtaining knowledge from a participative exercise then he is experiencing experiential learning.

When one attempts to validate that an individual or group has acquired additional knowledge from strictly the participative process with hard data one begins to run into obstacles. As A.J. Faria and R. O. Nulsen point out, in the introduction to "Game Administration A Life Cycle Analysis;" "Most authors can not reach valid conclusions as to the relative merits of simulation.. . the results are highly inconclusive.

In order to attempt to overcome this experiential data void, it was decided that one might use a "before" and after" process in an attempt to measure learning.

The course of study used in the exploring of the hypothesis was basic economics (Macro), traditionally considered a "lecture" course, due, for the most part to the type and amount of material covered. One of the main reasons for picking this course other than its "lecture" image is that the author had plenty of "before" data from which to draw. The specific before and after approach that has been used was to compare the average test scores, made on more or less standardized exams, from economic classes which were primarily lecture courses to those classes which used student involvement as a part of the in-class learning process. We

will define our measure of learning as being the percent difference between the scores.

### THE APPROACH

It is felt that one of the keys to successful learning is feedback and what this study did was to utilize the advantages of experience as a teacher and allow the student to discover, while still in class, whether or not he or she had truly acquired and could therefore properly apply any new knowledge gained from material just covered.

In order to do this, the instructor prepared a series of multiple choice questions for each chapter that was to be covered during the course of study (approximately ten per chapter) The students were to, prior to class and using their text material if they so desired, individually pick the best or most complete answers for each of the questions. Once in class the students were divided into groups of approximately six per group (they kept the same groups throughout the course) and were instructed to discuss each question and arrive at a single best answer for the group. No text material was allowed to be used during the group discussion. After a set amount of time, usually 20-30 minutes depending on the material being discussed, each group submitted a group answer sheet, and then the questions were reviewed by the entire class, and the "correct" answers given. The instructor would then spend the remainder of the two hour class period lecturing on the subject matter and attempting to explain the problem areas exposed by the questions. In addition to the above questions they also used application problems covering the particular subject areas for the groups to solve, once again under a time limit. Here also, they worked on the problems individually outside of class.

All in all the students were encouraged to prepare ahead of time, present their ideas or thoughts to their group, and then receive in-class feedback on the correctness of their responses.

As specific breaks in the instruction, individual examinations were administered. All of the exams were of a general type, similar to those that had been given over the same instructional areas in the past; however, the final exams, which were comprehensive, were identical from course to course. This allowed for specific comparison of final learning between classes.

### THE QUESTION

In order to use a feedback approach a great deal of effort and the utilization of a large amount of class time is required. So the question arises as to whether or not the amount of learning involved is really worth all the time and effort. In other words, how much "knowledge" is student involvement worth, can it be measured?

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## THE RESULTS

As stated above, the means of comparison was a final exam composed of multiple choice questions distributed from easy to difficult so that theoretically, the students who learned the most would get the greatest number of questions correct and the students who learned the least, the fewest questions.

Since this test has been used, it has given the following results:

	% of Questions Correct - Class Average	Class Size Number of Students	
Spring 78	49.82	22	
Summer 78	47.50	16	
Fall 78	48.75	61	
Winter 78	50.65	36	
Spring 79	46.52	31	
Summer 79	61.59	29	In-class
Fall 79	58.25	40	student involvement started

The mean of the five exams prior to the summer of 79 was 48.648%; the standard deviation was 1.599.

In computing the 99% confidence interval for the mean of these five exams, the upper boundary would be 51.942% of the questions correct. Both the summer and Fall of 79 scores fall outside this Interval therefore indicating a significant change in the average test scores since the inclusion of student involvement.

If the test scores are used as a reflection of learning, the change from 48.648% to 59.92% (the average of Summer and Fall of 79) shows a 23.17% increase in learning:  $(59.92 - 48.65)/48.65 = 23.17$ .

## THE CONCLUSION

This version of student involvement seems to lead to approximately a 20% increase in student comprehension. As to the relevance of this method in a subject area other than economics, it is felt by this author that definite parallels can be drawn and that further research will lead to similar results.

## REFERENCES

- (1) Faria, A.J. and R. D. Nulsen, "Game Administration: A Life Cycle Analysis," Insights into Experiential Pedagogy, Bureau of Business and Economic Research, College of Business Administration, Arizona State University, Tempe, Arizona, 1979, p. 220.
- (2) Hoover, J. Duane and Carlton J. Whitehead, "An Experiential-Cognitive Methodology in the First Course in Management: Some Preliminary Results," Simulation Games and Experiential Learning in Action, Bureau of Business Research, The University of Texas at Austin, Austin, Texas, 1976, p. 25.