

## Computer Simulation and Learning Theory, Volume 3, 1976

### An Experimental Examination of Group Size Effects: Implications for Experiential Learning<sup>1</sup> in the First Course in Management

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#### Introduction

The first course in management, commonly called the “Principles Course,” exists in nearly all schools with programs in business. As many of its teachers will attest, it is one of the most difficult courses to design and to teach effectively. It is difficult to “package” the complex and multidisciplinary body of knowledge of management into a one- semester course. Students are forced to learn the concepts, terminology, and perspectives of managerial action simultaneously. Furthermore, some of the analytical perspectives introduced in the first course, such as systems thinking, are often new and therefore alien to the beginning student.

The first course in management is usually a required core course, which can lead to 1) “monster” classes, 2) a high percentage of non-management majors, and 3) pervasive problems of student motivation and interest. Furthermore, the first course in management is usually a “service course” to the rest of the Campus, and many first-course students lack even minimal exposure to organizational and business topics.

As a result of these problems, the first course might be frustrating for both students and faculty. However, we feel that while the first course is a challenging one, it can also be a highly rewarding endeavor.

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The remainder of the paper will present our teaching methodology and some experimental results related to group size in experiential labs which supplement “monster” section lectures.

### Experiential Learning

We are engaged in a continuing process of examining and developing experiential learning methodologies in the College of Business Administration at Texas Tech University. Much of our work has focused upon the first course in management.

There are many approaches to experiential learning, but it can be defined most simply as “learning by doing”. The following specific definition attempts to describe experiential learning as an ongoing process.

Experiential learning exists when a personally responsible participant(s) cognitively, affectively, and behaviorally processes knowledge, skills, and/or attitudes in a learning situation characterized by a high level of active involvement.<sup>2</sup>

This positive definition introduces the prescriptive role of the learning individual--one of autonomy and self-direction. In some usages, the term experiential learning is often associated with the better utilization of the full human potential to learn. It is this “full potential to learn” which has led us into the use of experiential techniques in the first course in management.

### Our Lecture and Lab Approach

The design and teaching methodology we use for the basic course in management is a function of resource allocation problems. Fulltime

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<sup>2</sup> “Experiential Learning: Conceptualization and Definition,” from Simulations, Games, and Experiential Learning Techniques: On the Road to a New Frontier, edited by James Kenderdine and Bernard Keys, published by the University of Oklahoma Press, 1974.

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faculty are used to staff very large course sections. Because of room-size and communication/coordination problems, sections with approximately 200 persons have worked better than alternative larger size designs.

Our approach consists of a combination of rather traditional lecture sections supplemented by experiential laboratory education. Students in large lecture sections are assigned to laboratories ranging from 15 to 30 people. Lecture sections meet twice per week, while laboratory sections meet once. The lab classes are designed around a series of structured experiential exercises which emphasize affective and behavioral skill development as well as reinforcing cognitive concepts from lecture.

The success of this approach is contingent upon the careful selection of teaching assistants (TA's) because they act as facilitators for the exercises to be conducted in labs. Successful TA's must possess a tolerance for functioning in uncertain environments. Although the structured experiential exercises are carefully planned and conducted, the students' behavioral and emotional responses to the exercises cannot be "programmed". Considerable adaptive behavior is required for the experiential facilitator, especially when interpreting and discussing exercises.

Since the facilitating skills of the instructor will be influential in determining the success of the exercise, we feel it necessary to work closely with the teaching assistants. At the beginning of the week, with all the TA's attending, Professor Hoover models both the conduct of the exercise and the subsequent discussion. After the lab class, we meet briefly with the TA's to discuss the behavior which Professor Hoover has just modeled. Our experience to date indicates that teaching assistants can develop considerable facility in conducting these experiential

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labs. Additionally, as TA's gain confidence in what these labs can do, they generally become much more committed and involved in the process. As a matter of fact, we are more confident in their capacity to handle the behavioral labs than in processing the cognitive materials (the traditional TA job).

Our confidence in the cognitive-experiential approach has increased substantially as a consequence of observing the learning reactions of the students. We feel that we have achieved substantial behavioral and affective results in the lab by giving the student a cognitive background for interpreting these experiences. For example, it is one thing to talk about interpersonal and organizational communication and quite another to run an exercise where the person directly experiences some of these problems. The level of insight and personal impact is tremendously different. Quite frequently our students will reflect insights gained from exercises in class discussion and questions, and vice versa in labs.

For this approach to be successful, the laboratories and lectures need to be coordinated. Again, the real key to success here is the teaching assistants. Their confidence, skill, and level of commitment is more readily apparent in the experiential facilitator role than in the traditional cognitive class role. The students are very sensitive to the skill and commitment of the teaching assistant. If the TA does not adapt rapidly to this teaching role, he or she (we have used three males and three females as TA's) can essentially negate this combination of teaching technology. We have been very fortunate in the last two years to have the opportunity to carefully select our TA's.

In the following section, preliminary results from our research with an experiential learning methodology in the basic management class

are discussed. Some preliminary results are presented in addition to our findings on--group size effects.

### Some Preliminary Results

We are conducting several experiments in experiential learning, with our primary goal being to test the relative efficacy of the experiential format. These data support many of our “prejudices” about the experiential approach, and we are hopeful that our full research report will verify and reinforce the conclusions we present in this paper.

In an earlier study to test experiential labs against cognitive labs we found 1) there was no significant difference in exam scores for cognitive and experiential labs and 2) small (15) experiential labs scored significantly higher than large (>20) experiential labs. Therefore, the null hypothesis for the study described in this paper was:

There will be no significant differences between 1) course exam scores, 2) standardized exam scores, and 3) levels of student satisfaction for large (>20) and small (15) experiential labs in the first course in management.

The experimental procedure consisted of assigning 402 students in the first course to the two experimental conditions (lab size) in equal numbers of 200 per condition.

The results of our experiment did not verify the outcomes of our earlier study. Levels of student satisfaction were high for both experimental groups, with the smaller labs, predictably, scoring higher than the large labs.

However, our study did not demonstrate that the smaller lab environment was significantly more conducive to superior exam performance. As Figure 1 illustrates, the smaller labs did score higher, the direction predicted, but not at a high level of significance.

Figure 1  
 Analysis of Variance Results for Comparison of Course  
 Exam Scores for Large and Small Experiential  
 Labs in the First Course in Management

Lab Size*	Group Means	Mean Difference	Level of Significance
Large (>20)	74.63	2.04	p = .172 (NS)
Small (<15)	76.67		

\* Total N = 402

Similarly, the small labs did not score significantly higher on the standardized exam.

Figure 2  
 Comparison of Standardized Exam Scores  
 for Large and Small Experiential Labs  
 in the First Course in Management

Lab Size*	Group Means	Mean Difference	Level of Significance
Large (>20)	47.23	1.16	p = .439 (NS)
Small (<15)	48.39		

\* Total N = 402

Many factors influenced the results of this experiment, including teaching assistant effectiveness and time of day of the labs. Nevertheless, we feel our study has some profound implications for the practice and extension of experiential learning techniques.

### Implications

Many experiential learning theorists and practitioners bemoan the effects of large group size on the effectiveness of experiential learning climates. However, our study implies that even larger experiential labs (up to 35!), which might appear to be “unmanageable”, can produce significantly higher levels of student satisfaction, when compared to cognitive lab experiences.

Importantly, our results repeatedly indicate that experiential lab experiences produce these higher levels of student satisfaction (re: “involvement”) without sacrificing cognitive exam performance. The study reported in this paper did not find significant differences due to experiential lab size. But it does add support to our research which indicates that experiential labs in the first course in management, regardless of size, produce significantly higher levels of student satisfaction without sacrificing the cognitive element which is so important to whole-person learning.

### Conclusion

Our research has found that experiential labs in the first course do not inhibit cognitive exam performance when compared to cognitive labs. Preliminary results of early experiments indicated that smaller experiential labs did, in fact, produce exam performance significantly higher than cognitive labs. A larger study of this group size effect indicated that 1) exam performance was high (and not significantly different) for large and small experiential labs and 2) even large experiential labs can produce very high levels of student satisfaction without sacrificing cognitive exam performance.