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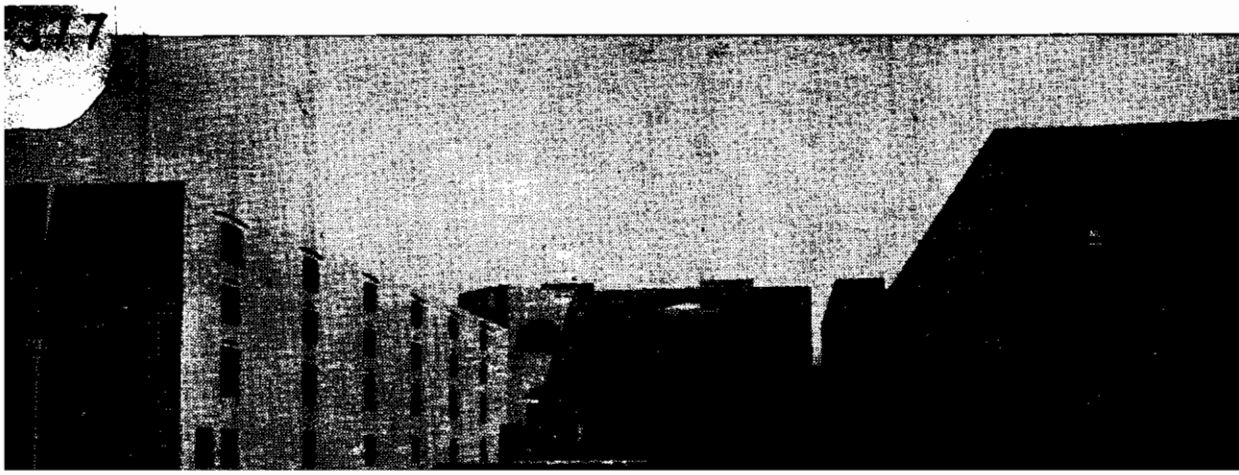

A CROSS-CULTURAL STUDY OF TEACHING EFFECTIVENESS OF THE CASE METHOD VERSUS THE LECTURE METHOD OF TEACHING IN LECTURE-ORIENTED ENVIRONMENTS: SOME PRELIMINARY FINDINGS

By

Elmar A. Stuhler
&
Sasi Misra

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FOOTNOTE

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. Professor of Organizational Behaviour, Indian Institute of Management, Ahmedabad. Currently, Fellow, Alexander von Humboldt Foundation, Bonn.

A CROSS-CULTURAL STUDY OF TEACHING EFFECTIVENESS OF THE CASE METHOD VERSUS THE LECTURE METHOD OF TEACHING IN LECTURE-ORIENTED ENVIRONMENTS: SOME PRELIMINARY FINDINGS [1]

Elmar A. Stuhler [2] and Sasi Misra [3]
Technical University of Munich,
Federal Republic of Germany

INTRODUCTION

Transmission of knowledge in a manner which the recipients are able to assimilate and to some extent identify with is one of the main determinants of the effectiveness of any educational and/or training programme. Yet another major purpose of training programmes is to stimulate development of skills which would equip the learners to meet the needs and demands of their occupations. However, there appear to be both substantive and qualitative differences between the knowledge transmitted by the teacher and the knowledge and skills acquired by the students. This is a matter of common experience. Although factors such as the ability of the teacher, the abilities and prior educational background of the student are important in the teaching/learning process, equally important is the particular teaching method practised for imparting educational training deemed conducive to real life problem-solving.

Imparting knowledge and skills primarily through lectures is widely prevalent and popular (more among teachers than students) in the centres of higher learning throughout the world. This is particularly so in social sciences. For several years now, some teachers, students and professionals in the field have expressed dissatisfaction with the time-honoured lecture method. This has probably led to supplementing lectures in the classroom with a variety of other educational technologies. Audio-visual aids, role playing and computer-assisted teaching are some examples of innovations in teaching. However, barring a few exceptions,

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most universities have not substituted any other method of instruction for the lecture method. The Harvard Business School appears to be the first to substitute the Case Method for the lecture method in its Master of Business Administration and Management Development programmes.

The phenomenal success of the management programmes at Harvard, as shown in industry confidence, has been partly attributed to the Case Method of teaching/learning. While there are many detractors of the Case Method, several other American, European and Asian schools of management have satisfactorily adopted it for management training. However, scant empirical evidence is available to support the many positive results of training which are attributed to the Case Method.

The purpose of this paper is to present some preliminary results of an ongoing study in two West German universities and the University of the Phlippines which examines the comparative effectiveness of case versus lecture method. In four different universities, three West German universitites and the University of the Philippines, teaching effectiveness is being evaluated in two main areas: cognitive and affective. In addition, it is of interest to measure the differences between the actual process of conducting case discussions and lecturing at various sites.

It is necessary to clarify two important points in respect to this study. Firstly, the study was conducted in environments where the lecture method is used almost exclusively and both teachers and students have long-standing experience with it. Secondly, the Case Method was used for certain groups of students in the sense of substitution and not supplementation. For instance, if a course in business administration was to use the Case Method, the entire course material and each of the topics within the course was dealt with through cases accompanied by relevant technical notes. In contrast, the same course taught through the lecture method covered the syllabus but did not use a single case study.

OBJECTIVE

The main objective of the study is to determine the comparative effectiveness of the case course versus lecture course for the development of the specific knowledge, skills and relevant attitudes conducive to the application of those skills and knowledge to decision-making in problem-solving situations.

HYPOTHESIS

The main hypotheses may be stated as follows:

1. With respect to cognitive mastery of the course material, the Case Method of teaching, in comparison with the Lecture Method, will yield better student performance in terms of assimilation and recall of course materials.
2. When confronted with problem-solving situations, the students undergoing training through the Case Method, compared with those undergoing training through the Lecture Method, will demonstrate greater problem awareness, undertake systematic problem analyses and prepare viable plans of action.
3. Students in the case course will have more favourable attitudes toward their study subject than students in the lecture course.
4. Students in the case course will show an interaction structure more favourable in terms of Flanders Categories than those in the lecture classes.

METHOD

Design

The basic features of the research design were as follows:

1. The total number of students attending a particular course at each of the three universities mentioned above were divided into two groups. One group attended the Case Method class and the other, the Lecture Method class.

2. As far as possible, efforts were made to attain maximal similarity of composition in the two groups with respect to prerequisites (entry knowledge) for the course. This was achieved by administering an 'entry knowledge' test to individuals in each group.

3. In the middle and at the end of each course, students in each group were individually tested with respect to knowledge gained in the subject matter areas of the particular course. This was one major dependent variable.

4. In addition, the students' attitudes toward the course subject matter and their learning efficiency were measured (Specht, 198

5. In order to compare the actual process of teaching through both methods at the three different sites, Flanders Interaction Analysis (1970) was used. This was done to enable us to compare the process whereby the case and lecture method of teaching were actually conducted in different universities and across cultures.

Sample

The subjects taught in the courses, their length, number of students and their maturity is shown in table 1.

Table 1 about here

Measuring Instruments

A variety of measuring instruments were employed in order to assess the relative effectiveness of the case versus the lecture method of teaching. Subject-specific tests were used to evaluate each student's knowledge in respective courses. In order to assess analytical and verbal communication skills, tests based on the principles described by Schott (1975) were administered. To determine the cognitive achievements of stu-

...nts in the case course more objectively, students at the Technical University of Munich were subjected to another method of evaluation recently developed by Franck (1980). Briefly, Franck contends that a relatively standard solution can be developed for various cases describing problem situations. Conceptually viewing a case as a 'semantic network' of expressions, each case analysis carried out by a student could be recorded on a 'transformation matrix'. Subsequently, this could be compared with the standard solution to determine the student's achievement. The validity, reliability and objectivity of Franck's system has been firmly established.

With respect to the affective and motivational dimensions of teaching effectiveness, three qualitatively different tests were administered. These were: a subject-specific attitude test, the TAT (cf. Heckhausen, 1963) and a test of causal attribution.

Teaching behaviour was analysed through the ten Flanders Interaction Analysis Categories (FIAC). This was done to enable us to examine the patterns of teacher/student interaction which actually occured in the two different classroom cultures (West Germany vs. the Philippines, and between courses conducted through the two teaching methods at different universities).

SOME PRELIMINARY RESULTS

University of the Philippines

The results obtained are based on the criteria shown in this scoring matrix (Fig. 1). Because of space limitations, results are described qualitatively. The results generally suggest that the case and lecture methods of teaching are roughly equivalent in terms of their effectiveness in the marketing management courses (Saldaña, Rodriguez, and Ibe, 1980).

Figure 1 about here

Although differences were observed between the case and lecture

classes (a) in the first semester, the Case Method class had more favourable attitudes at the end of the course than the lecture class, and (b) the Case Method classes were characterized by more student participation (discussion) and more student-initiated classroom interactions than the lecture classes. These differences were not reflected in significantly better performance in the case classes as compared to the lecture classes.

These results are reassuring in the sense that both methods showed significant learning gains. There are some aspects of the experiment which may be looked into more closely for the purposes of relating it to the experiment at the TUM and in suggesting improvements in future research designs.

The TUM data are being processed. However, some results which are now available can be highlighted. Table 2 presents correlational data pertaining to the four major variables such as: previous knowledge in agricultural economics, verbal behaviour achievement, case study test and tests of knowledge.

Table 2 about here

From the coefficients it can be said that previous knowledge in agricultural economics is not related to the case study test scores. This could be explained in view of the fact that the knowledge test was subject-specific while case analysis entailed more skills than knowledge per se. The variable C_0 is more predictive of verbal behaviour achievement than of case study test scores. The low predictability of variable C_0 for case test ability is further confirmed by the low correlation between the case study test scores and test of knowledge scores (r = .225). The two lowest correlation coefficients both have to do with the relationship between case study scores and knowledge test scores. These appear to indicate that case study entails skills beyond knowledge, i.e., application, analysis, synthesis and evaluation (Bloom, 1973).

The case course concept is designed to enhance cognitive achieve-

ments, as well as motivation (self-confidence, interest in the discipline and the willingness to exert effort in mastering it, a independent judgment). The subject-specific attitude test developed by Merten (1976) for mathematics was applied to the cours in our experiment.

It may also be seen that following an initial drop in overall motivation and the other three variables during the first semester, there is a rise in all of them in the second semester in the TUM.

Figure 2 about here

It should be pointed out that there are significant differences in the lecture methods used at the University of the Philippines and the TUM. While in the TUM even the lectures are group-centred, participative events exist almost exclusively on a one-way communications basis. This is a major aspect in regard to the preconditions set out for the experiment in the two systems. The differences in the interaction analysis in the case courses at various universities are shown in table 3. Interaction in the different courses was rather variable. Nevertheless there are some similar patterns: for example, according to Derner (1980) the emotional categories of 1 and 7 are near zero. Hence it may be inferred that there were no problems in the emotional dimension between teachers and students, because both worked together to solve case problems in the groups.

Lecturing and fact-giving (category 5) by the teacher was, on the average, only 30 percent, but it was the category with the highest frequency. The efforts of the teacher to solicit the students' opinions and interpretations was obviously very effective. This is shown in the constantly higher tallies in category 9 (student-talk, initiation) than in category 8 (student-talk, response).

Table 3 about here

It seems, however, that the teachers need some further training to accept and use the students' ideas more than was found in the interaction matrices. Only in the Philippine experiment was category 3 used with a frequency of about 10 percent, an amount we may expect in Case Method groups. Discussing these findings with the teachers might help them to organize the teaching process and the interaction in a better way (see table 3).

CONCLUDING REMARKS

It is not possible to make any definitive statements regarding the outcome of the study. However, some speculations are in order.

The cases used in the three German universities as contrasted with the cases used in the University of the Philippines are lengthier and had incorporated a good deal of uncertainties into the decision-making situations. The cases used in the University of the Philippines, in retrospect, appear to be more like "exercises" rather than "cases".

With respect to the results thus far obtained in the German universities, one of the questions that remain open is whether the effectiveness of the Case Method can be ascertained over the short period of one year. The long-term effects of case courses can perhaps be better examined through longitudinal studies, wherein the synergetic effects of the Case Method of education/ training would demonstrate clearly positive results.

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Table 1: Sample

	Subject	Course duration	Number of students	Maturity of students
Technical Univ. of Munich (TUM)	Agricultural economics	one year	35	third year [1]
University of Regensburg	Marketing	one semester	20	fourth year [1]
University of Augsburg	Business administration	one semester	140	first year [1]
University of the Philippines	Marketing	one year	90	third year [1]

1) four year course

Table 2: Inter-Correlation Matrix of Four Study Variables for the Case-Course at the Technical University of Munich

VARIABLE	C_o	C_9	C_{10}	C_{11}
C_o Previous knowledge in agricultural economics	-	.412	.198	.461
C_9 Verbal behaviour achievement	-	-	.411	.500
C_{10} Case study tests	-	-	-	.225
C_{11} Tests of knowledge	-	-	-	-

Table 3: Means and Standard Deviations of the Ten FIAC in Various Universities

CATEGORY	TECHNICAL UNIVERSITY MUNICH (10) *		UNIVERSITY OF AUGSBURG (3)		UNIVERSITY OF REGENSBURG (6)		UNIVER THE PH PINES
	M	SD	M	SD	M	SD	M
1. Teacher accepts feeling	0,1	0,1	0,0	0,0	0,0	0,0	0,0
2. Teacher encourages	4,7	2,6	5,5	0,3	1,3	0,4	1,6
3. Teacher uses ideas of pupils	2,7	1,0	2,8	0,3	1,4	0,4	10,0
4. Teacher asks questions	12,9	2,3	9,9	0,3	7,9	2,7	19,6
5. Teacher lecturing	36,7	8,7	26,3	1,0	29,1	6,7	27,9
6. Teacher giving directions, commands, etc.	0,3	0,1	0,8	0,1	0,3	0,3	0,1
7. Teaching criticising or justifying authority	0,0	0,0	0,4	0,1	0,8	0,4	0,0
8. Pupil-talk response	6,0	1,4	8,7	0,2	5,9	3,8	16,2
9. Pupil-talk initiation	25,3	11,2	18,6	0,6	44,2	10,7	17,3
10. Silence or confusion	11,3	5,0	27,3	0,9	9,4	2,4	7,3

* Figures in parentheses indicate number of observations

Figure 1: Instruction Matrix

LEVELS OF LEARNING AND SKILLS / LEARNING AREAS	I. KNOWLEDGE a) Terminology b) Categories c) Criteria d) Methodology e) Generalisations f) Structures	TOTAL	II. COMPREHENSION Interpretation	TOTAL	III. ANALYSIS a) Analysis of Elements b) Analysis of Relationships c) Problem Analysis	TOTAL	IV. SYNTHESIS/EVALUATION a) Setting up Alternatives b) Definition of Relevant Criteria c) Analysis of Alternatives d) Decision and Preparation of Plan	TOTAL	COMMUNICATION
1. THE MARKETING MANAGEMENT FUNCTION	x x x x								
2. THE MACRO-ENVIRONMENT	x x		x		x x x				
3. APPRAISING MARKET OPPORTUNITIES	x x				x x x				
4. MARKETING INFORMATION SYSTEM	x x x				x x x		x x x x		
5. MARKETING RESEARCH	x				x x x		x x x x		
6. STRATEGIC MARKETING	x x								
7. PRODUCT DECISIONS					x x x		x x x x		
8. DISTRIBUTION DECISIONS					x x x		x x x x		
9. PRICING DECISIONS					x x x		x x x x		
10. PROMOTION DECISIONS					x x x		x x x x		
11. PHYSICAL DISTRIBUTION DECISION					x x x		x x x x		
12. MARKETING PROGRAMME ADMINISTRATION	x x x x				x x x		x x x x		
13. INTERNATIONAL MARKETING									
LEARNING LEVELS									
TOTAL SCORES									

Figure 2: Average values of discipline-specific attitudes