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ABSTRACT

Open discussion and a Likert-type scale (Characteristics of Effective Teaching) were used with 38 graduate students enrolled in an advanced methods class in secondary school subjects, to determine their perceptions of the characteristics of effective teaching and whether teaching is an art or a science. A survey completed at the beginning of the semester by 35 students revealed that 20 percent perceived teaching to be an art, 23 percent viewed teaching as a science, and 57 percent felt that teaching was a combination, with a slight emphasis toward a science. Responses of 30 students at the conclusion of the semester revealed that 13 percent perceived teaching to be an art, 7 percent viewed teaching as a science, and the remaining 80 percent felt that teaching was a combination of both, with a slight emphasis toward an art. There were no significant differences in students' perceptions in the beginning and end of the semester regarding the characteristics of effective teaching. There were also no significant differences in responses to a statement concerning the effectiveness of microteaching to improve instruction. The Likert-type scale used in the study is appended. (JDD)

A CHANGE IN PERCEPTIONS OF GRADUATE STUDENTS WITH REGARD TO TEACHING AS AN ART OR A SCIENCE

A Paper

Presented to
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New Orleans, Louisiana
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by

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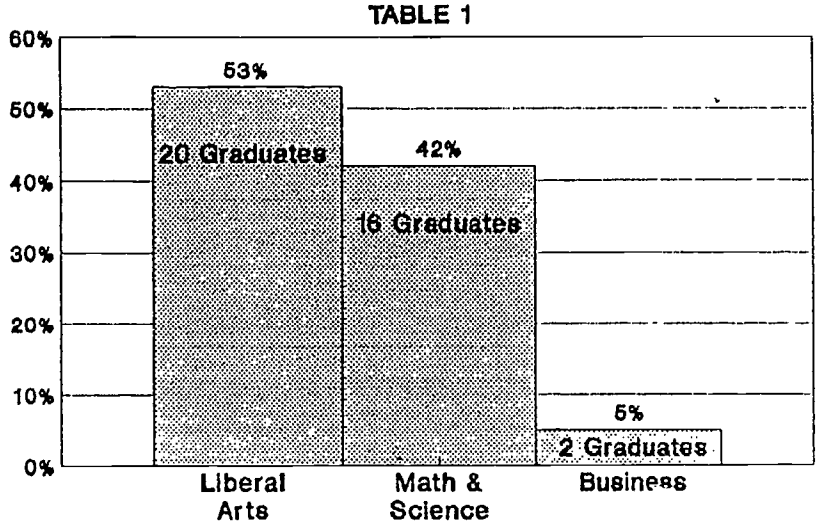
Among professional educators, there has remained a prevalent question: "Is teaching more of an art; or a science?" As an "art", teaching relies primarily on intuition; which is reinforced by wisdom, logic, psychology, and a strong command of communicative skills (Orlich, et. al., 1990). Teaching as a science is viewed as planned methodology concerned with "who" am I to teach, "what" do I want them to be able to do, and "how" am I to reach these goals and objectives (Freiberg and Driscoll, 1992). This paper replicates the findings of other relevant studies in that "teaching" is perceived to be an even combination of artistry and scientific methodology.

Research supports the premise that beginning teachers tend to teach in a manner in which they have been taught; education methods courses notwithstanding (Shulman, 1987). In that most instructors at the university level possess degrees other than in education, and utilize a "direct teaching" or "lecture" mode of instruction; an acceptable conclusion would be that most undergraduates in arts and sciences have been taught by a "direct teaching" method, and will begin teaching secondary students using this same method. Effective teaching requires a variety of instructional methods to better meet individual needs of the students (Rubin, 1981).

During the 1992 Academic Fall Semester, 38 graduate students were enrolled in an advanced methods class in secondary school subjects. Fifty-three percent (20) had completed degrees in areas of liberal arts, 42 percent (16) had major areas of concentration in math or science, and five percent (2) had earned degrees in professional areas of business. (Table 1)

Graduate Students
Undergraduate Academic Concentration

TABLE 1

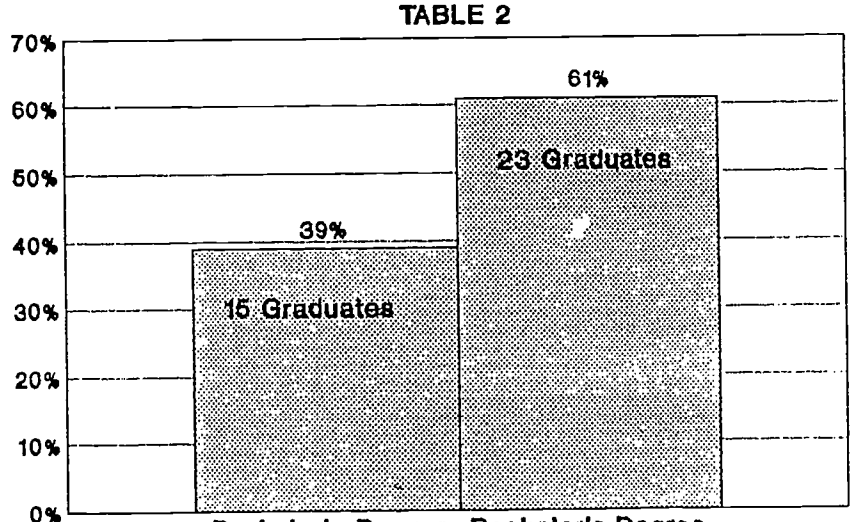


38 Graduate Students

Thirty-nine percent (15) had bachelor's degrees in education; 61 percent (23) possessed undergraduate degrees other than in education. Of the 61 percent (23), not having undergraduate degrees in education, all but four had less than three years of teaching experience. (Table 2)

Graduate Students
Baccalaureate Degrees

TABLE 2



38 Graduate Students

Statement of the Problem

(1) Of paramount importance to effectiveness, in conducting an advanced methods class, is insight regarding how graduate students of different academic backgrounds perceive "teaching". In addition, (2) graduate students, not previously having undergraduate methods courses, must be provided prerequisite knowledge and skills in order to reach advanced objectives.

Methodology

Open discussion and a Likert-type scale were used at the beginning and end of the 1992 academic Fall semester to gain insight regarding the extinct to which each graduate student perceived "teaching" as an art or science. Degrees on the recording scale were designated as follows:

ART	Art/Art/Science	ART/SCIENCE	Science/Science/Art	SCIENCE
( )	( )	( )	( )	( )

A questionnaire was constructed containing twelve statements relating to characteristics of effective teaching identified in an earlier study (Gee, 1992). Also included at the end of the instrument was a statement concerning "effectiveness" of micro-teaching to improve instruction. Degrees of agreement were designated as follows:

strongly agree	moderately agree	neutral	moderately disagree	strongly disagree
1	2	3	4	5

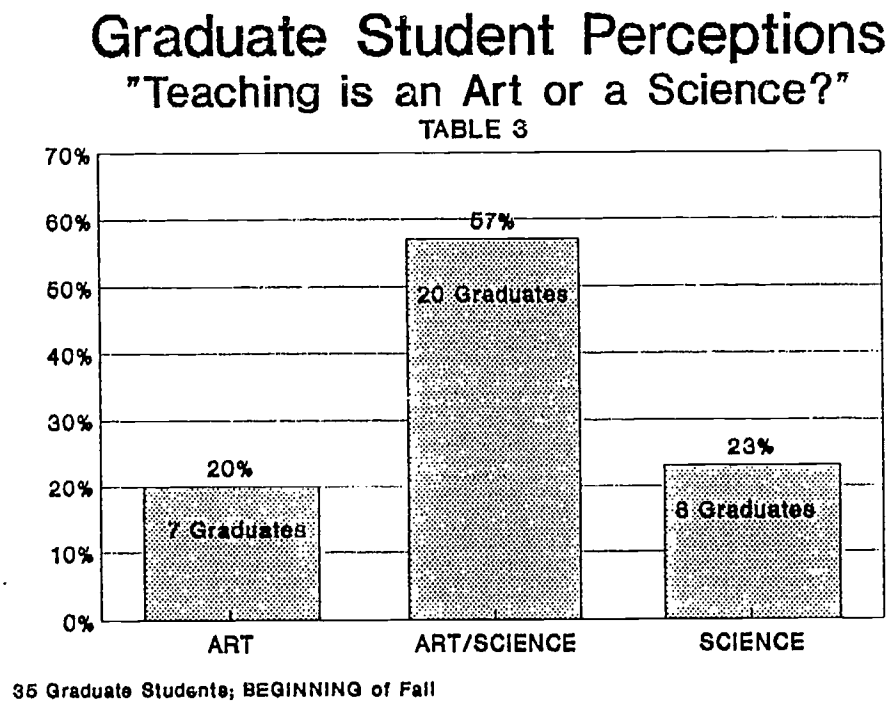
Significance of the Study

The concept of using "micro-teaching" as an effective means to improve instructional techniques of graduate students enrolled in an advanced heterogeneous methods class was reinforced.

Responses to the 12 statements relating to characteristics of "effective teaching" revealed a high level of agreement regarding validity. "Teaching" was perceived to be a combination of art and science by 80% (24) of the graduate students at the end of the semester.

Results of the Study

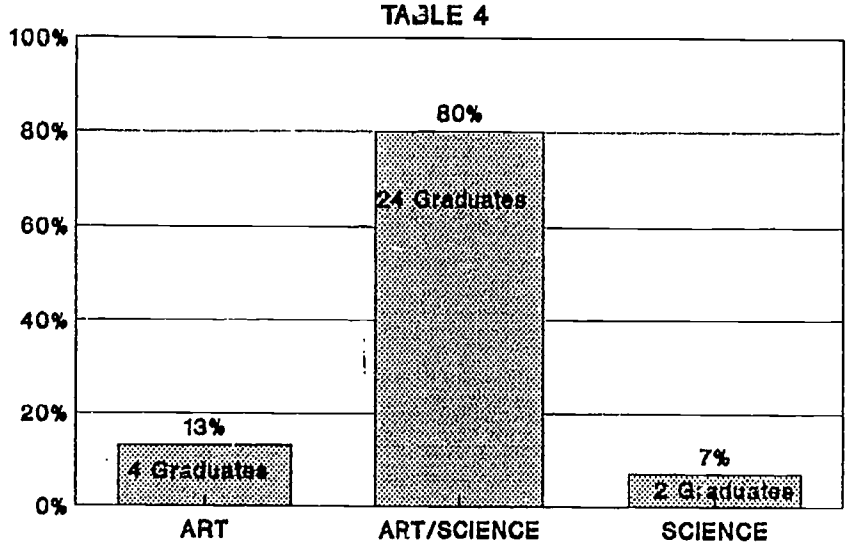
Responses of 35 graduate students, recorded at the beginning of the Fall semester, revealed that 20% (7) of the class perceived "teaching" to be an art, 23% (8) viewed "teaching" as a science, while the remaining 57% (20) felt that "teaching" is a combination of both with a slight emphasis toward a science. (Table 3)



Responses of 30 graduates at the conclusion of the semester revealed that 13% (4) of the class perceived "teaching" to be an art, 7% (2) viewed "teaching" as a science, while the remaining 80% (24) felt that "teaching is an even combination of both with a slight emphasis toward an art. (Table 4)

Graduate Student Perceptions
"Teaching is an Art or a Science?"

TABLE 4



30 Graduate Students; CONCLUSION of Fall

A chi-square was computed, and variance was found to be significant at the .95 level; but chi-square is not stable when computed using any experimental frequency less than 5. An additional advanced graduate methods class was surveyed during the 1993 Fall Semester to establish a larger frequency of response and ensure stability.

There appeared to be no significant difference in perceptions of the graduate students in the beginning and the end of the 1992 Fall semester regarding the twelve statements relating to characteristics of effective teaching. The responses to each statement moved from a lowest 1.8 point of agreement to a high of 1.4 point of agreement, with two statements receiving points of total agreement. The statement relevant to using micro-teaching as a means toward improving instruction also remained stable at a 1.65 point of agreement.

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APPENDIX

CHARACTERISTICS OF EFFECTIVE TEACHING

Circle the number that best describes your opinion:

1	2	3	4	5
strongly agree	moderately agree	neutral	moderately disagree	strongly disagree

1. Different learning abilities are unique to each age group of learners.
   1 2 3 4 5

2. Preparation and organization of materials are essentials in effective lesson planning.
   1 2 3 4 5

3. Any well-designed lesson plan provides opportunity for intelligent modification.
   1 2 3 4 5

4. Formation of attitudes, values, and appreciations occurs simultaneously with students' acquisition of knowledge.
   1 2 3 4 5

5. Appropriate sequencing of activities in continuity is crucial to the presentation of a lesson.
   1 2 3 4 5

6. A positive attitude displayed by the teacher improves discipline and facilitates learning.
   1 2 3 4 5

7. The use of "interactive mechanisms" is pertinent to learning when encouraging divergent thinking and teaching by inquiry.
   1 2 3 4 5

8. The ability of a teacher to recognize student non-verbal cues is an asset in the utilization of "formative evaluation".
   1 2 3 4 5

9. Eye contact and voice control are effective means of getting and maintaining attention.
   1 2 3 4 5

10. "Direct teaching" strategies are greatly reinforced when combined with visual, and kinesthetic modes of instruction.
    1 2 3 4 5

11. Inappropriate behavior should be promptly corrected.
    1 2 3 4 5

12. Examination questions should be directly correlated with cognitive skills taught in class.
    1 2 3 4 5

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"Micro-teaching" provides a concise instrument through which teachers can practice teaching strategies, judge their effectiveness, and get immediate feedback.
1 2 3 4 5

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Mark the appropriate space along the continuum.

"Teaching is an Art or a Science?"

ART ( ) Art/Art/Science ( ) ART/SCIENCE ( ) Science/Science/Art ( ) SCIENCE ( )