



CONSTRUCTING A DENTAL HYGIENE EDUCATION: A SURVEY OF EDUCATIONAL METHODS



Marcia H. Lorentzen, RDH, MEd, Ed.D.

Introduction

Call for Change

The Institute of Medicine (IOM) reported on the need for both dental and allied dental educational programs to make changes in preparation for future health-care delivery. In 1995 active learning strategies were recommended to replace traditional lecture method, increasing students' ability to think critically, problem solve, and transfer scientific knowledge and thinking into clinical decision making.¹

Problem

Educational methods implemented in dental hygiene education impact student learning. Changes in educational methods may be necessary to address the needs of today's dental hygiene students and the society for whom they will provide care.

Purpose

The purpose of this study was to examine the educational methods used by dental hygiene faculty, explore educators' reasoning for implementing chosen methods, and determine if the methods implemented supported the construction of learning. Dental hygiene educators engaged in discussing and utilizing strategies that develop students' abilities in problem-solving, critical thinking and self-directed learning, should lead students to academic and clinical success, and competence for entry into the dental hygiene profession.

List of Critical Thinking Skills and Definitions

Cognitive Skill	Definition
Interpretation	categorize, comprehend, and express meaning or significance
Analysis	examine ideas, identify intended and actual relationships
Evaluation	assess credibility or strength in claim or judgment
Inference	make reasonable conclusions and deduce consequences
Explanation	present in coherent manner results of one's reasoning
Self-regulation	monitor, evaluate, and correct one's own cognitive activities

Adapted from Facione, (1990b, p. 15)

Research Questions

1. What educational methodologies do dental hygiene educators use?
2. What do dental hygiene educators report to be their purpose for using specific instructional methods and grouping arrangements?
3. What is the relationship between the frequency of employing interactive teaching methods and years of teaching experience?

H₀ There is no significant difference between the frequency of employing interactive teaching methods and years of teaching experience.

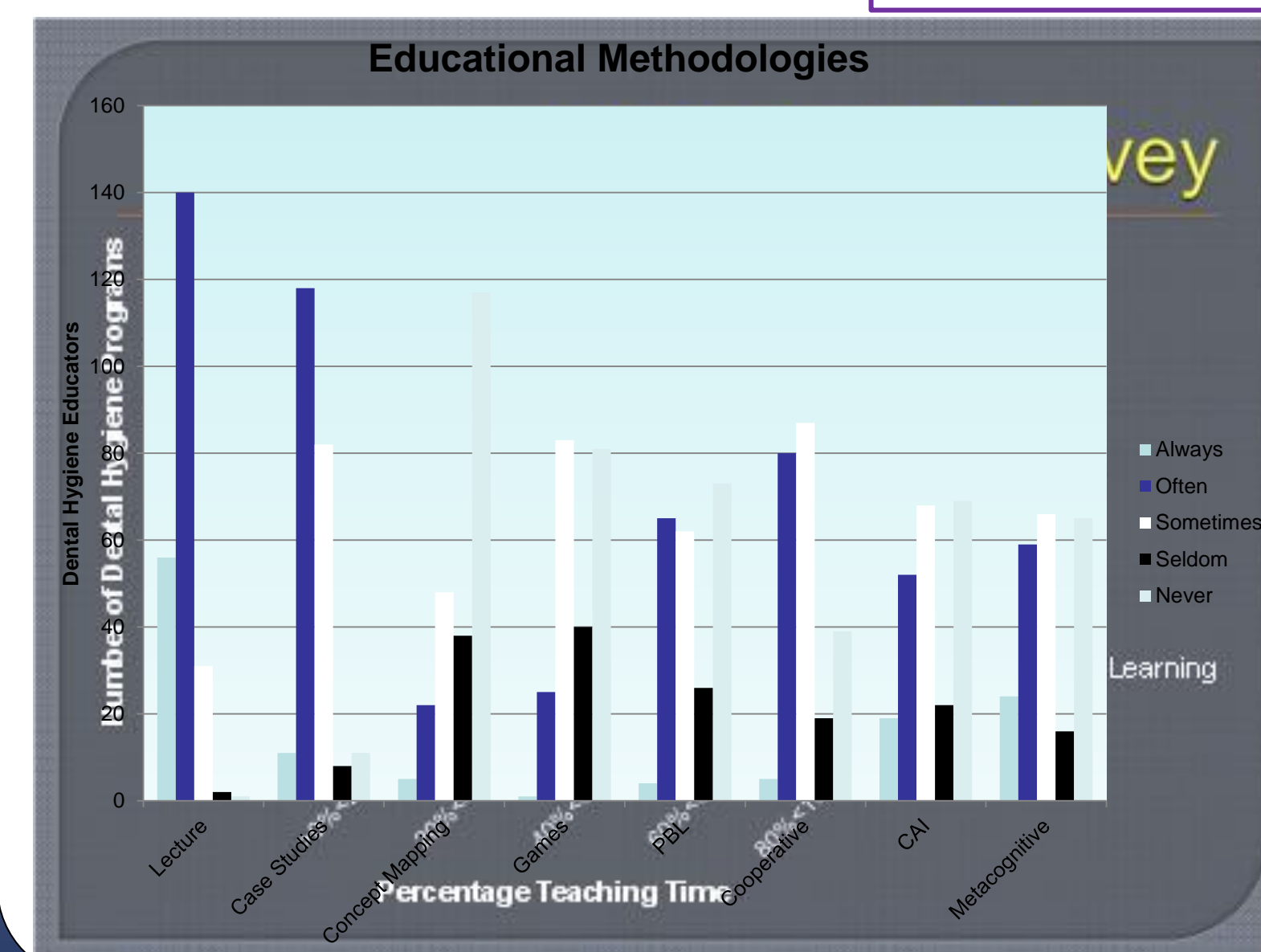
Methods

A snowball purposive sample of 308 accredited dental hygiene programs was utilized. The educational methods survey was modified with permission from research conducted in nursing programs.³ The new electronic survey was field-tested with a convenience sample of dental hygiene educators prompting modifications addressing reading ease, fluidity of content, and response selection format. All survey responses remained confidential.

Descriptive statistics and Spearman's rho were used to analyze quantitative data; qualitative data was organized and analyzed thematically. IRB approval was obtained from the University of Bridgeport.

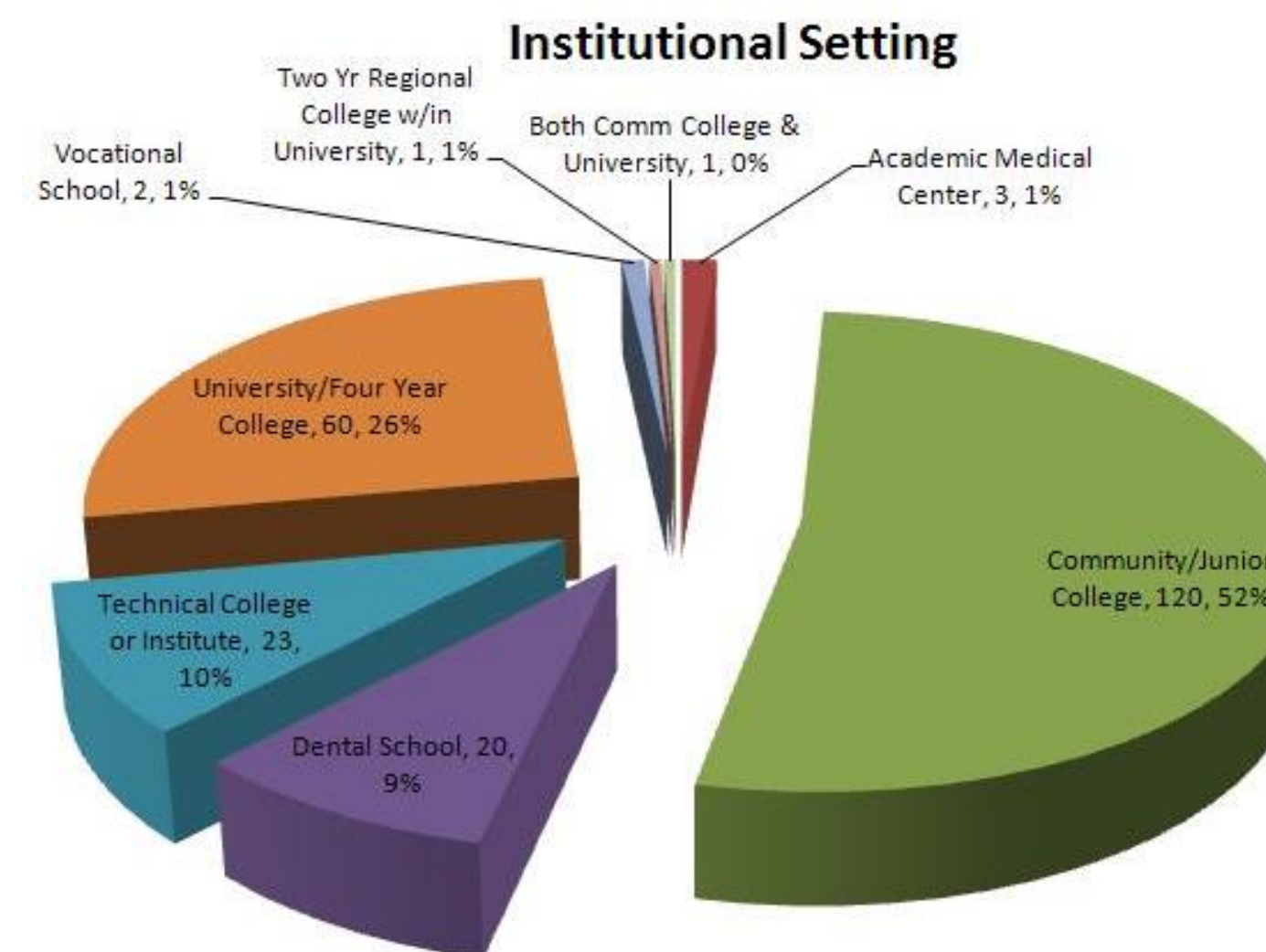
Educational Methods responses::

Always	1
Often	2
Sometimes	3
Seldom	4
Never	5



Results

Two hundred thirty educators participated in the research.



Research Question 1

Lecture was most frequently used by all educators, always or often used for teaching (85.1%); 13.4% sometimes used lecture; seldom and never used lecture (.8%, .4%).

Case studies were second most frequently used; often or sometimes used (86.9%); seldom used (3.4%); 4.7% equally always and never used case studies.

Cooperative learning was often or sometimes used by 72.5%. 16.9% never used cooperative learning; 2.1% always and 8.2% seldom used cooperative learning.

Metacognitive strategies, the fourth most frequently used instructional methodology, were equally often, sometimes, and never used (25.6%, 28.6%, 28.2%); always used (10.4%); seldom used (6.9%).

Problem-based learning was often and sometimes used by educators (28.2%, 26.9%). The methodology was always used by 1.7%, but equally seldom and never used (31.7% each).

Games were never used by 35.2%; seldom and sometimes used (17.3%, 36%); often used (10.8%); always used (.4%).

Computer-assisted instruction was never used by 30%; always used by 8.2%; often and sometimes used, 22.6% and 29.5% respectively; seldom used by 9.5%.

Graphic organizers or concept mapping were the least used instructional method. More than half (50.8%) never used the strategy. It was seldom and sometimes used (16.5%, 20.8%) and always and often used by 2.1% and 9.5% respectively.

Results

Research Question 2:

Lecture (mean 1.5 to 1.71): to teach new material, for student discussion, and to involve students by asking them questions (99.1%-100%, n=226-228)

Case studies (mean 1.98 to 2.71): to reinforce material, engage students class discussion, and to share ideas about solutions in small groups (each 94.7%, n= 218).

Cooperative learning (mean 2.52 to 2.96): for student discussion, to reinforce materials presented, introduce new materials, and review for tests (99.4%, n= 188).

Metacognitive strategies (mean 2.33 to 2.69): for students to demonstrate, practice, or explore their learning, and to assess student understanding (98.8%, n= 166).

PBL (mean 2.51 to 3.34): for students to seek resources to solve problems, to reinforce and introduce new materials, to assess student learning (100%, n=157).

Games, CAI, and Graphic Organizers (mean 2.3 to 3.83): used for student practice, reinforce material taught, and to assess student learning engage students with the materials,

Research Question 3

There was significance between lecture and years teaching (p=.034), and nearing significance between metacognitive strategies and years teaching (p=.051).

Qualitative

Challenges to using constructive learning methods were lack of commitment, support, and training. Strategies for implementing constructive learning methods included stimulation, technology, and institutional support.

Conclusions

Faculty chose active-learning educational methods to help students construct their education.

With leader encouragement, faculty development, and institutional support faculty may choose to implement and maintain student-centered learning methods.

Bibliography

1. Field, M. J. (Ed.). (1995). Dental education at the crossroads: Challenges and change. Washington, DC: National Academy Press. Retrieved from http://www.nap.edu/openbook.php?record_id=4925
2. Facione, P. A. (1990b). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction. Research findings and recommendations.* American Philosophical Association, Newark, DE, full report 112 pages.
3. Powers, B. R. (2007). *The use of interactive instructional strategies on academic performance in nurse education programs* (Doctoral dissertation). Retrieved from Proquest LLC. (3252758)