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An Investigation of Competency-based Teaching Methods and Barriers for Technology Integration in Foodservice Management Courses

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OUTLINE

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INTRODUCTION: FOODSERVICE COMPETENCIES

- A career as a foodservice dietitian is challenging due to its ever-expanding roles.[1]
- Commission on Dietetic Registration (CDR) of the Academy of Nutrition and Dietetics (AND) outlines various knowledge/competencies in foodservice management:[2]
  - Management theories
  - Budget & financial data
  - Regulatory system & billing
  - Human resource management
  - Safety principles related to food, personnel & consumers
  - Sustainability, waste reduction & environment protection

INTRODUCTION: CBE

- Competency-based education (CBE)
  - emphasizes on mapping competencies to courses, methods, and learning outcomes, in order to prepare professionals for the workforce.[3,4]
  - has emerged as a common approach in the dietetics education to produce competent graduates.

Teaching Methods:

- are a set of principles, procedures, and practices implemented by educators to achieve intended learning goals.[5,6]
- various teaching methods are used in dietetics education.[5-6]

INTRODUCTION: USE OF TECHNOLOGY IN THE CLASSROOM

- Technology has transformed many aspects of education.
- How technology is used in the classroom?[7]
  i. For instructional preparation
  ii. As a delivery method
  iii. As a leaning tool for students
- Barriers for technology integration:[8]
  i. External factors (e.g., lack of resources & time, environment, training)
  ii. Internal factors (e.g., teachers' beliefs, attitudes and knowledge)

RESEARCH GAPS & OBJECTIVES

Research Gaps

1) Research that investigates teaching approaches in foodservice management courses for competency development is limited.
2) Research related to the use of technology in foodservice management was published close to two decades ago (Shah et al., 1999).

Research Objectives

- Investigated methods used by educators to teach foodservice management courses in the Dietetic program
- Explored the use of instructional technology (IT) in the foodservice management courses, including the types of technology used, skills of IT integration, and educators' perceived barriers of IT use

METHODS

Ethical Consideration
- Approval from Institutional Review Board

Instrument Development
- Demographics & job profiles
- Teaching method(s) for each competency
- Technology use and perceived skills
- Barriers for technology integration

Data Collection & Analyses
- Invitation email, followed by 2 reminders
- Descriptive & inferential Statistics

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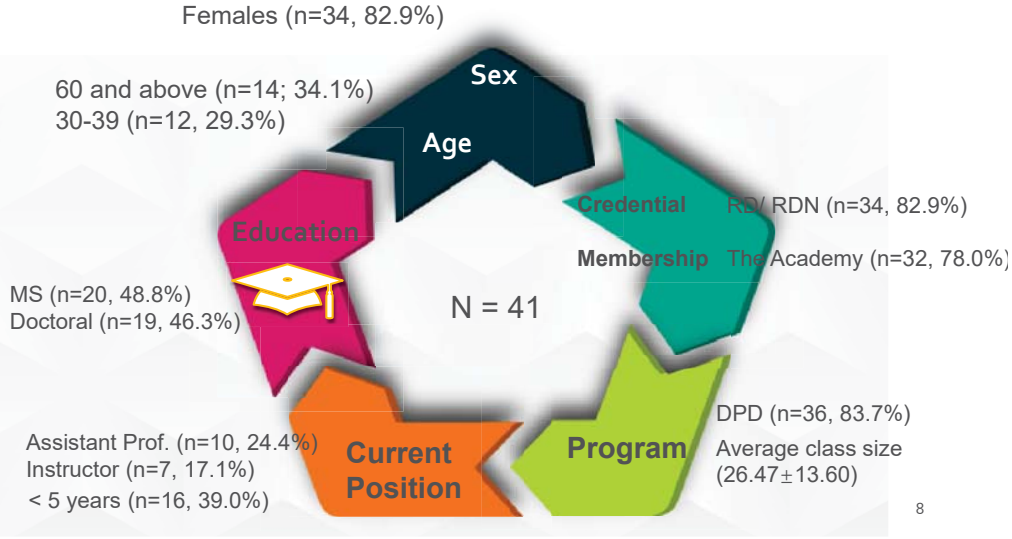
Sampling
- Faculty members teaching foodservice management courses in the dietetics programs of a higher education institution in the U.S. (n=252)
- Database compiled from ACEND® website and FSEMC member list (n=33)

Expert Review & Pilot Test
- 4 experts review the instrument for content validity
- Pilot tested by 16 instructors

RESULTS & DISCUSSION: DEMOGRAPHICS & JOB PROFILES



RESULTS & DISCUSSION: TEACHING METHODS

Teaching methods	Lecture	Service Learning	Role playing	Case-based learning	Group discussion	Instructional Technology	I did not teach this competency
Competency				n (%)			
Management theories.	38 (92.7)	4 (9.8)	7 (17.1)	18 (43.9)	19 (46.3)	2 (4.9)	4 (9.8)
Budget and financial data.	41 (100.0)	5 (12.2)	3 (7.3)	22 (53.7)	19 (46.3)	7 (17.1)	0 (0)
Regulatory system & billing.	13 (31.7)	1 (2.4)	3 (7.3)	4 (9.8)	2 (4.9)	1 (2.4)	27 (65.9)
Human resource management.	39 (95.1)	4 (9.8)	14 (34.1)	26 (63.4)	23 (56.1)	6 (14.6)	3 (7.3)
Safety principles related to food, personnel and consumers.	39 (95.1)	15 (36.6)	12 (29.3)	21 (51.2)	21 (51.2)	7 (17.1)	1 (2.4)
Sustainability, waste reduction and environment protection.	39 (95.1)	9 (22.0)	5 (12.2)	14 (66.7)	18 (85.7)	8 (19.5)	1 (2.4)

Similar teaching approaches were used in other courses in the dietetic programs.[9-11]

RESULTS & DISCUSSION: OTHER TEACHING METHODS

Budget & Financial data: *"I use a Healthcare **Worksheet** to practice billing with appropriate diagnosis code and CPT codes. I also created a financial calculations worksheet with 25 problems that allow the practice of foodservice calculations such as ratios, meals per employee hour, etc."*

Human resource management: *"I have **guest speakers** present their area of expertise such as NSPLs, HR recruitment & management, and ADA."*

Management theories: *"Students write a **reflective paper** of past experience with managers using the management theories and develop their own management theory.*

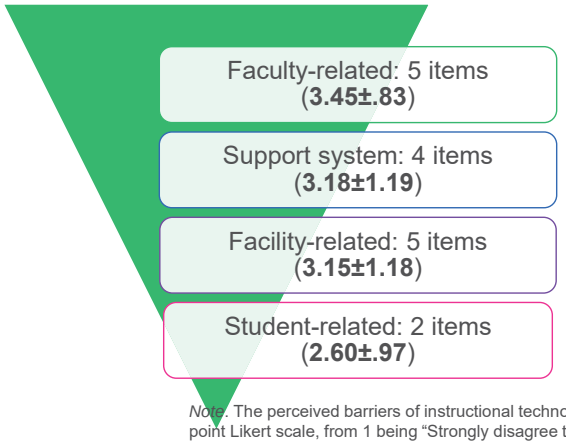
RESULTS & DISCUSSION: TYPES OF TECHNOLOGY & PERCEIVED SKILLS OF INTEGRATION

Types of Technology	Frequency of use	Perceived Skills
Presentation software (e.g., PowerPoint, videos)	4.55±.63	4.00±.73
Student assessment tools (e.g., Kahoot!, Quizzes)	2.98±1.34	2.95±1.25
Online		
Simul		
Clicke		
Group		
Lectu		
Social Media (e.g., Twitter hashtags, Facebook)	1.33 ±..61	1.67±..84
Digital field trips	1.26 ± .69	2.10±1.31

- Close to two-thirds of the 1920 faculty members used social media in their classrooms and students were asked to read or review social media posts for class assignments.[12]
- The differences in results maybe because social media is not a viable learning platform for every discipline; its use is dependent on the instructors.[13,14]

Notes: The perceived skill in technology integration was measured using a 5-point Likert scale, ranging from Novice (1) to Expert (5). The frequency of using technology was also measured using a 5-point Likert scale, ranging from Never (1) to Always (5).

RESULTS & DISCUSSION: BARRIERS



Note. The perceived barriers of instructional technology integration were measured using a 5-point Likert scale, from 1 being "Strongly disagree that it is a barrier" to 5 being "Strongly agree that it is a barrier".

Results were consistent with previous literature.[15-17]

CONCLUSIONS & IMPLICATIONS

Conclusion	Implications
Lecture is the most common method to deliver a substantial amount of information.	Foodservice faculty are encouraged to diversify their teaching methods.
Simulation programs in foodservice management are still limited.	Faculty members and vendors can collaborate to explore the possibilities of developing competency-based foodservice management simulations.
Faculty members' perceived skills of technology integration was not high.	• Faculty members are encouraged to join professional development workshops/ conferences.

LIMITATIONS & RECOMMENDATIONS

- Low response rate of 14.4%.
  - Use multiple recruiting methods in the future studies
- Only one open-ended questions
  - Add more probing-type questions
- Data was collected before COVID-19; technology use might have been different now

Regardless of these limitations, this study provides a glimpse into teaching methods and technology integration in the foodservice management courses in the dietetics programs and opens avenues for future studies that can advance foodservice education.

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Q & A

THANK YOU