

# 능력중심교육 원칙을 응용한 급식경영관리 교육 모형의 개발

## Development of the Prototype Curriculum of Foodservice Systems Management Education based on Competency-Based Education Principles

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### <Abstract>

본 연구는 한국 영양사를 위한 급식경영관리교육의 필요성을 파악하고, 4년제 식품영양학과에 적용할 수 있는 능력중심교육 원칙(competency-based education)을 응용한 급식경영관리 교육 모형 개발에 목적을 두고 있다. 본 연구는 각 분야의 급식경영전문가 설문조사→영양사 설문조사→4년제 대학 식품영양학과 교과과정 검토→급식경영관리 교육 모형 개발 등의 순으로 진행되었다. 급식경영전문가 설문조사를 통하여 한국영양사에게 필요한 47개 급식경영관리 수행능력을 결정하였으며, 이를 토대로 영양사 설문조사 (응답자수: 484, 회수율: 65%)에서는 위 수행능력의 중요도와 교육정도에 대한 영양사들의 인식을 알아보았다. 그 결과, 급식경영관리 수행능력이 현재와 미래의 영양사 업무수행에 있어 매우 중요하다고 인식하고 있는 반면, 교육은 불충분하다고 대답하였다. 교육 불충분의 이유로는 급식경영관리 분야의 과목 부족, 실무위주 교육의 부족 등을 지적하였다. 교과과정 검토 결과 61개 과목 중 8과목(13%)만이 급식경영관리와 관련된 과목으로 나타났다. 두 가지 설문조사 결과와 교과과정 검토 결과를 토대로 하여 본 연구에서는 능력중심교육 원칙을 응용한 급식경영관리 교육 모형을 개발하였다. 개발된 교육 모형은 급식경영관리 전문 교육가에 의해 실행 전 평가 및 검토를 거쳤으며, 내용구성, 적용성, 형식 분야의 평가 결과 모든 분야에서 5.0 만점의 평균 46점을 획득하여 한국 영양사의 효과적인 급식경영관리 교육과정 개발에 유용하게 쓰일 수 있을 것으로 기대된다.

**주제어(Key Words):** foodservice systems management competencies(급식경영관리수행능력), competency-based education(능력중심교육), prototype curriculum model(교육 모형)

## I. Introduction

The objective of foodservice has been to produce quality food and service at the desired rate and at minimum cost (Spears, 1995). To Achieve this goal, the foodservice industry has emphasized effective management methods and professional training of personnel to direct foodservice systems (Shanklin et. al, 1995; Snyder et. al, 1995). Managerial competencies have been a focus for dietitians to study increasing diversity of career opportunities in foodservice industry (Boudreaux et. al, 1991). Foodservice systems management has had an impact on the role of dietitians, not only in the US, but also in Korea.

Dietetic educators in the US continued to respond to the changes that have increase the emphasis on management in the foodservice industry (Digh et. al, 1994; Yates et. al, 1987). Historically in the US, the focus of dietetics education at the undergraduate level was on preparing dietitians for institutional health care positions with emphasis on competencies related to nutrition services (Boudreaux et. al, 1991). Korean dietetics education programs also emphasized nutrition and food science areas (Baek, 1993; Yang, 1992). However, Korean dietitians continue to be held accountable for foodservice systems management(FSM) competencies, although many of the competencies were not addressed in the curriculums. Recently many Korean dietetic professionals indicated the need of foodservice education for Korean dietitians (Yang, 1991; Yang, 1992; Yang, 1996).

Dietetic educators are continually challenged to find methods that help achieve maximum learning by students (Gregoire, 1992). While there have

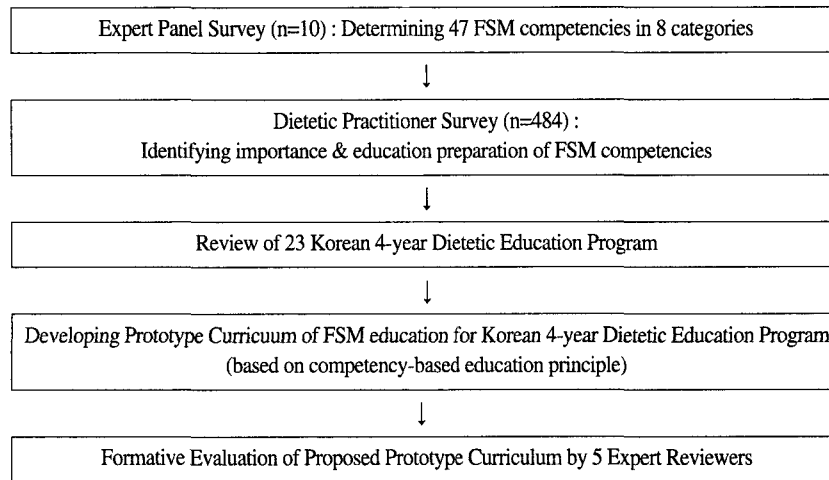
been many studies on curriculum development models in other education fields (Clymer, 1996; Seidman, 1998; Tompkins et. al, 1996), there is a lack literature in its application in Korean FSM education. Therefore, it is needed to determine the educational strategies that will result in preparation of high quality dietitians. One of the approaches for FSM education is competency-based education (CBE). A main feature of CBE defined student learning outcomes as measurable behavior rather than as discipline content (Chambers et. al, 1996). The development of CBE model for dietetic education was undertaken by several research groups in US (Gilmore et. al, 1997; Loyd et. al, 1977; Shanklin et. al, 1980). However, there is little in the literature on specific education model for FSM education for Korean universities. Therefore, the purposes of this research were to identify of Korean dietitians' need for FSM education and to generate a prototype curriculum model for FSM education that could be applicable for Korean four-year universities.

## II. Method

The research method was developed in three major phases:(1) expert panel survey, (2) dietetic practitioner survey, and (3) development of prototype curriculum. The whole process of research method show in <Figure 1>.

### 1. Expert Panel Survey

The survey instrument used in the expert panel survey was sent to ten Korean dietetic professionals who had more than five-year



<Figure 1> Process of Research Methodology

experience and a leadership position in their organization. The expert panel was asked to evaluate each of the 54 FSM competencies and answer “yes” or “no” the competency necessary for the current and future practice of Korean dietitians. The list of 54 competencies in the expert panel survey was developed by reviewing the literature relating FSM of dietitians in a variety of dietetic practice areas and at different levels of practice in the US (American Dietetic Association, 1983; American Dietetic Association, 1997; Foodservice Systems Management Education council, 1977; Holmes, 1982; Kane et. al, 1990; Loyd et. al, 1977; Seal et. al, 1983; Snyder et. al, 1985; Yates et. al, 1987). Competencies having a 70% or greater consensus after review by the expert panel were retained as necessary competencies for Korean dietitians, and used for the Korean dietetic practitioner survey questionnaires and for curriculum development. The expert panel survey was field tested by three dietetic professionals (Two dietetic educators, and one dietitian).

Descriptive analysis included frequency and percentage to describe the data. The data were manually tabulated by the researcher.

## 2. Dietetic Practitioner Survey

A dietetic practitioner survey was conducted to obtain baseline data about their perception of importance and education of FSM. A randomly selected 750 dietetic practitioner was obtained from the Directory of Korean Dietetic Association Members. Of the 750 survey mailed, 498(66%) were returned. Of the 498 returned, 14 were not usable. Thus, 484(65%) were usable survey available for analysis. The dietetic practitioner questionnaire addressed the following quantitative data regarding FSM competencies;

(1) perceived importance and (2) perceived adequacy of educational preparation. The other information sought in the survey were demographic information about the respondents including types of dietetic practice area, job title,

number of years of work experience, and the highest level of education. The survey was conducted in September-October 1999. Four separate mailing were sent in an effort to achieve the greatest possible return of survey. Descriptive statistics were used, such as means, standard deviations, frequency distributions and percentages. The association between variables was analyzed using chi-square test statistics. All tests were done using the computerized statistical package, SPSS 7.0.

### 3. Development of Prototype Curriculum

**Dietetic education program review.** Twenty-three existing dietetic programs were reviewed to provide a rational of developing the prototype curriculum. Catalogues from 23 dietetic education program were reviewed to determine course offerings. The course offerings were sorted according to similarities in the titles and course descriptions. The review compared the portion of FSM courses with nutrition and food science areas in the four-year dietetics education programs.

**Prototype curriculum development.** The prototype curriculum of FSM education was created by researcher, which was based on results of expert panel survey and dietetic practitioner survey. FSM competencies identified through the expert panel survey were compiled to make a guideline for developing the prototype curriculum. Qualitative data of FSM competencies from open-ended questions in the dietetic practitioner surveys were used to determine learning activities, assessment of students learning, course design, lesson plan and education evaluation in the prototype curriculum. The prototype curriculum

was developed by applying competency-based education principles (Brown et. al, 1997; Diamond, 1998; Kemp et. al, 1998; Newby et. al, 1996; Tessmer, 1993; Wyatt et. al, 1999).

**Prototype curriculum evaluation.** A formative expert review was conducted to evaluate the proposed prototype curriculum. Five expert reviewers were asked to review the content, applicability and format of the prototype curriculum. Formative expert reviewers consisted of four Korean dietetic educators (Board of Directors, Korean Dietetic Association; Board of Directors, Korean Society of Food Science; Committee, Korean Dietitian License Examination; Committee, Korean Culinary Science Association), and one American dietetic educator (Committee, American School Foodservice Association) with knowledge and/or experience in FSM education.

## III. Result and Discussion

### 1. Expert panel survey

Demographic information was obtained from the ten expert panelists. The dietetic/ foodservice practice areas represented by the expert included: four in business and industry (B&I), three in healthcare, and three in schools. The mean years of work experience was about 14 years. Expert panel evaluated the 54 competencies which were developed by reviewing the literature relating FSM competencies of dietitians in the US. Fifty-three competencies met the criteria for retention after review. The retained 53 competencies were then reviewed to eliminate obvious duplicates or to combine into single statement by the expert panel.

Eight competencies were combined or excluded to reduce redundancy of the competency listing and the final 47 FSM competencies in eight categories were identified.

## 2. Dietetic practitioner survey

**General Information & Overall FSM competence.** The research sought the demographic information related to the job positions and individuals. The information about years of dietetic practice area, years of dietetic experience, and educational characteristics are shown in <Table 1>. The major dietetic practice area of respondents was schools (43%). Other dietetic practice areas included correctional, government agencies, and job training institutes. The majority of the dietetic practitioners reported they had equal

or more than three years but less than six years experience in their careers (35%). The most commonly held respondents' degree was the bachelor's degree (52%). Dietetic practitioners were also asked to indicate the perception of their present level of overall FSM competence as excellent, good, fair, or poor <Table 1>. Perceived FSM competence level of excellent was claimed by only 1 % of the respondents and 76% perceived their competence to be fair or poor. These findings indicate that a large number of Korean dietitians were not fully prepared to perform FSM activities, and may also lack confidence in their competence on which to build FSM techniques necessary for advance practice in foodservice industry.

The relationship between dietetic practitioners' perceived overall competence to two variables including years of dietetic experience and education level were examined. The result showed the positive relationship between overall competence and work experience ( $\chi^2= 45.91, df=6, p=.00$ ). As years of dietetic experience increased, Dietetic practitioners perceived the overall FSM competence to be stronger. This finding is supported from previous research indicating that work experience was important method for acquiring required skills and knowledge (Linnekohl et. al, 1983; Robinson, 1965; Seal et. al, 1983). In the research by Robinson(1965), and by Linnenkohl and Roach(1983), it was emphasized that work experience was an essential factor for the development of competency. Seal et. al(1983) found that the work experience was identified as a major method in developing FSM competencies by dietetic practitioners' and educators' surveys. Therefore, Korean dietitians would be expected to have stronger FSM competence with more years of

<Table 1> General information of dietetic practitioners (n=484)

Characteristics		Number	%
Type of dietetic practice area	School	207	42.8
	B&I	168	34.7
	Health care	82	17.0
	Others	17	3.5
	College or university	10	2.6
Years of work experience	< 1	31	6.4
	1 ~ <3	107	22.1
	3 ~ <6	168	34.7
	6 ~ <9	90	18.6
	≥9	88	18.2
Education level	Junior college graduated	188	38.8
	Bachelor's degree	250	51.7
	Master's work	17	3.5
	Master's degree	24	5.0
	Doctoral work	4	0.8
	Doctoral degree	1	0.2
Overall foodservice management competence	Excellent	3	0.2
	Good	114	23.6
	Fair	248	51.2
	Poor	119	24.9

&lt;Table 2&gt; Dietetic practitioners' perception of importance &amp; educational preparation of 47 foodservice systems management competencies

	Importance <sup>a</sup>	Educational preparation <sup>b</sup>
<b><i>I. Organizational management</i></b>		
1. Develop and maintain organizational and departmental goals, policies, and procedures	3.01	1.93
2. Develop organizational chart	3.00	1.97
3. Develop work methods, job descriptions, and standards of performance for employees	3.31	1.90
4. Collect and apply current information on foodservice systems management	3.38	1.96
<b><i>II. Human resources management</i></b>		
5. Determine employee needs and assign employees for areas of responsibility to effectively meet the objectives of foodservice	3.15	2.02
6. Evaluate employee performance and direct changes in employees utilization according to established standards	3.08	1.95
7. Identify employee market and select employees to meet staffing and scheduling needs	2.95	1.85
8. Document and maintain employee records for recommendation for employees raises promotions and transfer	2.93	1.90
9. Identify labor laws and organizational personnel policies	2.86	1.81
<b><i>III. Financial management</i></b>		
10. Develop financial objectives for area of responsibility congruent with organizational and departmental goals, policies, and economic constraints	3.10	2.06
11. Prepare budget for area of responsibility and allocate financial resources in accordance with approved budget	3.31	2.18
12. Maintain and apply the basic knowledge and skills of accounting and bookkeeping	2.95	1.76
13. Identify and analyze factors that affect food, labor, and operating costs	3.24	2.23
14. Identify sources of revenue and develop revenue-generating programs	2.64	1.99
15. Maintain appropriate cost control by effective and efficient management resources	3.07	2.06
16. Direct pricing of menu item in accordance with pricing strategies	3.15	2.12
17. Assess financial status for area of responsibility and prepare revenue and financial analyses reports	2.83	1.96
<b><i>IV. Production and distribution management</i></b>		
18. Establish objectives for procurement, production and distribution in compliance with various regulations	2.93	2.22
19. Analyze meal forecast demand using professional judgment and/or mathematical methods	3.07	2.19
20. Possess and apply knowledge about purchasing procedures which ensure control of quality and quantity of food	3.40	2.32
21. Utilize basic knowledge of food safety and sanitation in the storage, preservation, and preparation of food	3.60	2.46
22. Plan menu which conforms to budget and/or cost requirements, equipment, time, and employee availability	3.60	2.46
23. Develop and implement the use of standardized recipes to provide quality and financial control	3.40	2.23
24. Develop and monitor control mechanism for production procedures through coordination of personnel and equipment	3.25	2.18
25. Evaluate food products based on established criteria for customer, acceptance, cost, quality, and quantity	3.37	2.39
26. Manage quality improvement program for area of responsibilities	3.03	1.92
<b><i>V. Facility management</i></b>		
27. Develop policies and procedures for the maintenance and use of foodservice facility and equipment (i.e. develop justifications and specification for equipment)	2.95	1.89
28. Direct the use of facility and equipment based on criteria for safety, sanitation and security	3.31	2.06
29. Assess and analyze layout and design of facility for efficiency and effectiveness	3.10	1.86
30. Plan and propose changes in layout and design of facility based on assessment	3.00	1.77
31. Possess and apply knowledge of energy management techniques	2.77	1.88
32. Possess and apply knowledge of effective waste management with consideration of anti-pollution	3.35	2.03
<b><i>VI. Marketing management</i></b>		
33. Possess and apply knowledge of marketing principles and strategies	2.64	1.86
34. Develop and implement marketing strategies to stimulate food sales (develop new product, services and/or promotional materials)	3.23	2.02

<Table 2> continue

	Importance <sup>a</sup>	Educational preparation <sup>b</sup>
35. Conduct consumer survey to obtain feedback information that could be incorporated into menus	3.51	2.24
36. Incorporate merchandizing techniques that increase selection of high-profit menu items	2.60	1.89
<b>VII. Leadership and supervision</b>		
37. Apply principles of management theory to effectively supervise employees	3.06	2.00
38. Develop leadership and supervisory skills for the achievement of objectives for the foodservice systems management	3.19	1.96
39. Identify problems and make necessary changes to optimize department objectives	3.07	2.02
40. Possess and apply motivational techniques to increase employee productivity and job satisfaction	3.15	1.99
41. Plan and perform orientation and in-service training programs for employees	3.04	1.90
<b>VIII. Technical and communication skills</b>		
42. Possess and demonstrate effective oral and/or written communication skill	3.03	2.12
43. Establish communication channels with individuals whose work has an impact on foodservice systems	3.03	2.24
44. Develop inter-department communication for effective foodservice systems management	3.12	2.18
45. Possess knowledge and skills about stress management	3.39	2.06
46. Possess and apply computer knowledge to foodservice systems management	3.34	1.88
47. Use computer as a professional tool (e.g. word processing, internet)	3.38	2.13

<sup>a)</sup> Score descriptor: 4.00-very important to 1.00-not at all important.

<sup>b)</sup> Score descriptor: 4.00-very adequate to 1.00-no education.

dietetic experiences. The relationship between respondents' perceived overall competence and education level was also found to be statistically significant ( $\chi^2= 8.12, df=3, p=.04$ ). The data supports a previous study about job performance of dietitians by Park (Park, 1994). In the study, job performance of dietitians who had a Bachelor's degree was better than dietitians who graduated from junior colleges. Considering different length of dietetics education programs, it was expected that the higher of the dietitians' education level, the stronger the perceived overall FSM competence.

Perception of importance and educational preparation. Dietetic practitioners were asked to rate how important they thought each competency was in preparing for their job and future position. Results of the perceived importance scores of 47 competencies are shown in <Table 2>. Forty-five of the competencies had perceived importance mean

scores of 3.49 to 2.50 on a four-point scale, indicating "important." The remaining two competencies related to safety and sanitation, and menu planning had perceived importance mean scores of both 3.60 indicating "very important." Respondents were also asked to rate the perceived adequacy of education of the 47 competencies received from their college <Table 2>. All of the 47 competencies had perceived educational preparation mean scores between 2.49 and 1.50 on a four-point scale, indicating inadequate education. Considering the results of the perceived importance mean scores in which all competencies were rated as important or very important, it is observed that educational preparation for FSM competencies was inadequate for dietetic student to prepare for the future needs and employment. These results support findings of a study by Lee(Lee, 1990) about tasks of Korean dietitians, in

which 86% of respondents did not feel prepared for the FSM responsibility as foodservice professionals when they completed higher education. According to the comments from open-ended questions in the survey, many dietitians demonstrated their opinions about reason of inadequate education. Those included the lack of FSM course and class based on lecture. Many respondents in this research stated they had difficulties in applying FSM knowledge and skills learned from school to real situation. Several researchers pointed out inadequate practical training of Korean dietetic education programs (Seo, 1995; Yang, 1991; \_\_\_\_\_, 1995). In the research about dietitians' practice, Jeon(Jeon, 1984) also found that FSM education from colleges was inadequate for dietitians to be able to their dietetic practice. Therefore, it is considered that Korean dietetic education programs should consider providing a variety of learning environments and activities including lab activities, simulations, and other practical methods for dietetic students to develop FSM competencies needed to succeed at higher level in the future foodservice practice areas.

### 3. Development of Prototype Curriculum

As a research outcome, a prototype curriculum of FSM education for four-year universities was developed based on results of expert panel survey and dietitian survey. Forty-seven of the competencies identified in the expert panel survey were compiled to make a guideline for developing the prototype curriculum of FSM education.

**Dietetic education program review.** In order to provide a rationale for developing the prototype

curriculum, 23 Korean dietetics education programs in four-year universities were reviewed. Sixty-one courses were identified and categorized into five areas:(1) pre-requisite, (2) nutrition, (3) food science, (4) foodservice systems management, and (5) others. Of the 61 courses, only eight courses(13%) were identified as related for foodservice management <Table 3>. 'Food sanitation and hygiene' course was provided by 100%. 'Quantity food production and practice' and 'foodservice systems management' courses were provided 19(83%) and 13(57%) schools respectively. The remaining five courses were provided by 10 or less schools. These results suggest that Korean dietetics education programs may not provide sufficient education for students to prepare FSM competencies which are essential for future practice. Many Korean dietetic educators addressed lack of integration and connection among courses in higher education, and need for systemically modified dietetics education program with integration of courses and consideration of social needs (Yang, 1992; Cha, 1997). Therefore, the review of 23 dietetic education programs gave good reason for developing a prototype

<Table 3> Eight courses relating foodservice management identified in 23 Korean four-year dietetics education programs (n=23)

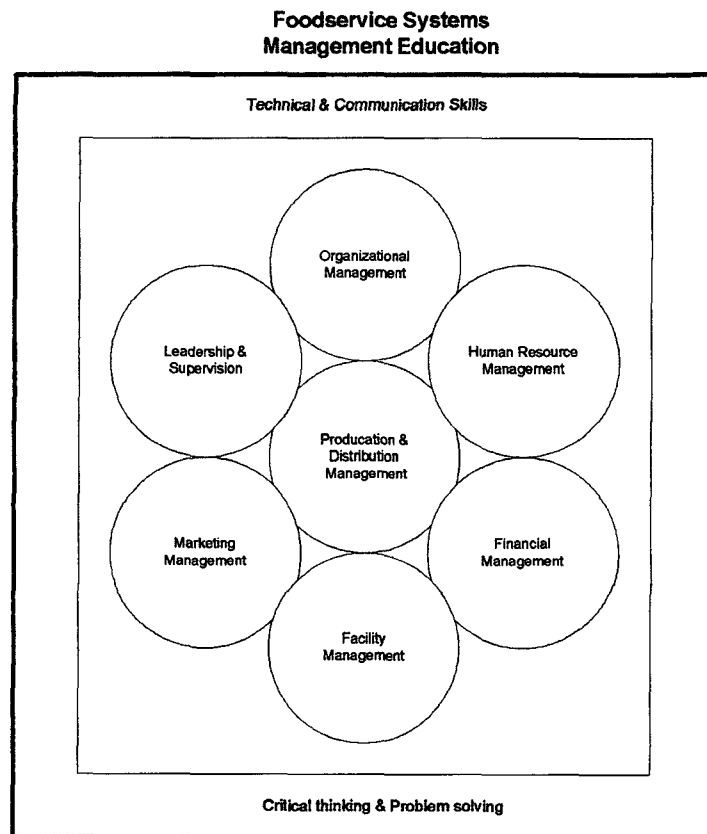
Course provided	School providing course		Mean credits
	Number	%	
Food sanitation and hygiene law	23	100.0	4
Quantity food production and practice	19	85.6	3
Meal management	16	70.0	3
Foodservice systems management	13	56.5	3
Food purchasing	10	43.5	3
Personnel management	7	30.4	3
Dietetic practice (practicum)	3	13.0	1
Marketing	2	8.7	3



curriculum of FSM education.

**Development of prototype curriculum.** As a research outcome, the prototype curriculum for FSM education was developed as a package of document by researcher. The prototype curriculum was designed to achieve learning outcomes. The document includes five section: I. Introduction, II. overview of dietetics education program profile, III. foodservice systems management education recommendations, IV. resources, and V. selected references. The overview of the dietetics education program profile section

describes the current situation of FSM education in Korean dietetics program. This section includes; (1) identification of the programs, (2) mission and goals, (3) stakeholders, (4) situation analysis of FSM education, and (5) benefits and problems of FSM education. The Education recommendation section proposed the new prototype curriculum for Korean four-year dietetics programs based on 47 competencies for dietetic/foodservice professionals. This section consisted of 11 sections including (1) expected outcomes, (2) foodservice management competencies, (3) education model,

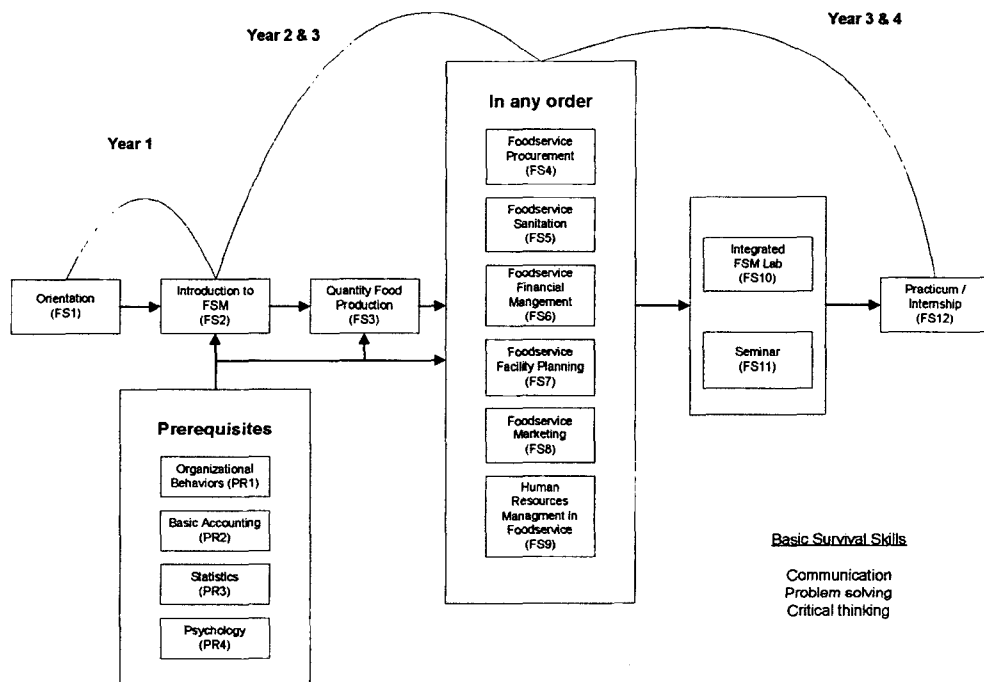


<Figure 2> Conceptual Model for Foodservice Management Education

(4) assumptions for implementation, (5) course-competency matrix, (6) learning activity resources, (7) application technology, (8) assessment of student learning, (9) course design, (10) lesson planning, and (11) education evaluation.

The program model for FSM education was developed based on the conceptual model which was emphasized integration of eight FSM categories with other skills. The conceptual model of the FSM education was created to encompass the essential eight FSM education categories to be taught <Figure 2>. <Figure 3> shows the program model for FSM education for 4-year continuum. This new model illustrates a systematic approach to accomplish FSM education. The prototype curriculum covers all of the existing courses related

to the FSM area, which were identified from the dietetics program in 23 universities. Also, new courses were identified and developed to achieve 47 competencies by researcher <Figure 3>. For easy understanding and effective use of the prototype curriculum, the course-competency matrix for FSM education was also created. The course-competency matrix shows at which level the competency will be introduced, used, further developed and assessed in each course <Figure 4>. This form might be helpful in developing tentative content and in narrowing down to the specific competency development level for which the course will actually offer academic experiences. In this prototype curriculum, four levels were developed for continuous competency



<Figure 3> Program Model for Foodservice Systems Management Education

development throughout the curriculum: (1) *introduced*: course provides overview of knowledge and skills for a specific competency development, (2) *used*: course provides basic principles, concepts, facts, or other information as awareness to a competency, (3) *further developed*: course providing in-depth knowledge and skill training as applying competency to the specific case or situation, and (4) *comprehensive*: course focuses on integrating and evaluating use of competencies in application to the dietetic/foodservice profession.

The purposes of assessment are to measure learners' achievement of objectives and to evaluate

effectiveness of education (Smith & Ragan, 1993). Moreover, a evaluation of a course or program is more than a one-time activity for assessing the effectiveness and for the future correction (Kemp et. al, 1998). For this prototype curriculum, several learner-centered assessment approaches were suggested. A portfolio development guide was created as one of the evaluation methods. Wyatt and Looper (1999) reported that a portfolio is an assessment tool for presenting a student's developmental growth works, best works, or comprehensive works. Therefore portfolio will be used as a student assessment tool for prototype

FSM competencies	Course Identification <sup>a)</sup>															
	PR1	PR2	PR3	PR4	FS1	FS2	FS3	FS4	FS5	FS6	FS7	FS8	FS9	FS10	FS11	FS12
<i>Organizational management</i>																
1. Develop and maintain organizational and departmental goals, policies, and procedures	A <sup>b)</sup>					A/B	B					C	C	C/D		D
2. Develop organizational chart	A					A/B							C	C/D		D
3. Develop work methods, job descriptions, and standards of performance for employees	A					A/B		B					C	C/D		D
4. Collect and apply current information on foodservice systems management	A		A	A	A	A/B							C	C/D		D
<i>Human resources management</i>																
5. Determine employee needs and assign employees for areas of responsibility to effectively meet the objectives of foodservice				A	A	A	B						B/C	C/D		D
6. Evaluate employee performance and direct changes in employees utilization according to established standards			A		A								B/C	C/D		D
7. Identify employee market and select employees to meet staffing and scheduling needs						A							B/C			C
8. Document and maintain employee records for recommendation for employees raises promotions and transfer						A							B/C			C
9. Identify labor laws and organizational personnel policies						A							B	C		D

<sup>a)</sup>See <Figure 2> for the course title

<sup>b)</sup> Competency level: A-Introduced, B-Used, C-Further developed, D-Comprehensive

<Figure 4> Example of Course-Competency Matrix

I. Portfolio Assessment Matrix		Year: 1    2    3    4 (circle one)			
<i>Check your competency level of the Portfolio Assessment Matrix.</i> The portfolio is designed to measure level of FSM competencies in each integrated class or course. The level of FSM competencies can be evaluated using this portfolio assessment matrix (copy and use this form for annual evaluation).					
Competency Level: 1-Novice    2-Apprentice    3-Competent    4-Expert					
FSM Competencies		Competency Level			
<i>Organizational management</i>					
1. Develop and maintain organizational and departmental goals, policies, and procedures	1	2	3	4	
2. Develop organizational chart	1	2	3	4	
3. Develop work methods, job descriptions, and standards of performance for employees	1	2	3	4	
4. Collect and apply current information on foodservice systems management	1	2	3	4	
<i>Human Resources Management</i>					
5. Determine employee needs and assign employees for areas of responsibility to effectively meet the objectives of foodservice	1	2	3	4	
6. Evaluate employee performance and direct changes in employees utilization according to established standards	1	2	3	4	
7. Identify employee market and select employees to meet staffing and scheduling needs	1	2	3	4	
8. Document and maintain employee records for recommendation for employees raises promotions and transfer	1	2	3	4	
9. Identify labor laws and organizational personnel policies	1	2	3	4	



II. FSM competency Inventory Worksheet			
<i>Make your FSM Competencies Inventory.</i> When each competency reaches the expected level (competent or expert), fill out the inventory worksheet. Evidence of competency achievement column is for student to list evidence or documentation of their competencies. Supported course(s) column is for student to list course(s) which support to develop each competency.			
Competency Level: C - Competent    E - Expert			
FSM competencies	Competency Level	Supported courses	Evidence of Competency Achievement
<i>Organizational management</i>			
1. Develop and maintain organizational and departmental goals, policies, and procedures			
2. Develop organizational chart			
3. Develop work methods, job descriptions, and standards of performance for employees			
4. Collect and apply current information on foodservice systems management			
<i>Human Resources Management</i>			
5. Determine employee needs and assign employees for areas of responsibility to effectively meet the objectives of foodservice			
6. Evaluate employee performance and direct changes in employees utilization according to established standards			
7. Identify employee market and select employees to meet staffing and scheduling needs			
8. Document and maintain employee records for recommendation for employees raises promotions and transfer			
9. Identify labor laws and organizational personnel policies			

<Figure 5> Example of Portfolio Development Guide for Student

curriculum and show how the student developed from novice toward expert in terms of developing FSM competencies. For this prototype curriculum, portfolio development guideline including “student portfolio assessment matrix” and “FSM competency inventory” were planned in order to evaluate entire program effectiveness <Figure 5>. The portfolio assessment matrix will be used for measuring students’ level of each FSM competency at the end of each academic year and the FSM competency inventory will be utilized as the evidence of students’ FSM competency achievement. As using these two evaluation tools, students will be able to develop their own portfolio documentation to demonstrate the achievement of FSM competencies and other related skills during school and this documentation will offer students individual references for the future FSM practice.

**Prototype curriculum evaluation.** The proposed

prototype curriculum was revised and evaluated by five formative expert reviewers. Quantitative and qualitative data were obtained from the expert reviewers. They was asked to evaluate content, applicability, and format of the prototype curriculum and the results present in <Table 4>. The total mean score on content was 4.6 on five-point Likert scale, indicating between excellent and good. The mean scores of applicability and format were 4.1 and 5.0 indicating satisfactory and excellent respectively. Two Korean dietetic educators suggested that the prototype curriculum could be more applicable through adjustment of disproportionate emphasis on nutrition and food science. Overall, the prototype curriculum was considered a useful source for development and modification of FSM curriculum in dietetics education programs.

<Table 4> Evaluation of prototype curriculum of foodservice systems management education for four-year universities by 5 expert reviewers

Evaluation Item	Mean Score <sup>a</sup>
<b><i>I. Content</i></b>	<b>4.6</b>
1. Is the content accurate?	4.8
2. Is the content complete?	4.4
3. Do the graphics/models contribute to understanding the prototype curriculum?	4.2
4. Has the content unnecessary information?	5.0
<b><i>II. Applicability</i></b>	<b>4.1</b>
5. Is this prototype curriculum practical?	4.0
6. Does this prototype curriculum seem appropriate and manageable to the faculty?	4.0
7. Is this prototype curriculum relevant?	4.0
8. If conducted, will the prototype curriculum help students improving foodservice management competencies better?	4.4
<b><i>III. Format</i></b>	<b>5.0</b>
9. Is the prototype curriculum easy to understand?	5.0
10. Are the directions clear?	5.0
11. Is the organization of the prototype curriculum logical?	5.0

<sup>a)</sup> Score descriptor: 5.0-excellent to 1.0-very poor

## IV. Conclusion and Recommendation

In summary, Korean dietetic practitioners perceived that FSM competencies were important to perform the current and future practice. On the other hand, it was found that dietetic practitioners perceived educational preparation as inadequate. The research also found the years of dietetic experience and education level influenced dietetic practitioners' perception of FSM. As an outcome of the research, the prototype curriculum of FSM education was created from data collected in this research. The prototype curriculum included curriculum contents, implementation and evaluation plans. It was considered as a useful source for development and evaluation of FSM curriculum in Korean dietetic education. To implement the prototype curriculum, several assumptions below should be considered. The prototype curriculum:

- (1) provides structure for promoting students' mastery of entry-level FSM competencies,
- (2) provides students a convenient vehicle for the integration of theory and career education,
- (3) emphasizes what a students should be able to do as a consequence of education,
- (4) provides students the basis for continued learning and professional development throughout life,
- (5) program model is flexible and adaptable to different universities,
- (6) educators will be prepared for instruction through graduate education, continuing education, or other experiences,
- (7) dietetic educational institutions and foodservice industry will cooperate for improving the

quality of the Korean dietitians.

The findings of this research could be applicable to practical and educational settings. Forty-seven of the FSM competencies recognized important for dietitians can be used by practitioners to identify deficits in FSM competencies and to guide the selection of appropriate experience and/or continuing education for a future career move. For educators, information resulting from the research can be used to develop more effective educational programs which prepare students for increased FSM competencies required by the foodservice industry. This research also produced baseline data that provides the foundation upon which future research can build to expand the development of FSM competencies of dietitians.

Findings of the research led to several recommendations for further research including:

1. to evaluate dietitians' FSM competencies based on degree of performance,
2. to find out what professional development techniques and educational resources can be used by dietitians to develop FSM competencies in their positions,
3. to determine the outcome (cost effectiveness, food and service quality) of using the FSM competencies,
4. to develop benchmark Korean FSM education programs with the US programs which have been monitored for success.

Developing and implementing a new curriculum may not be the only thing necessary to enhance the management related practice skills of dietitians. Employers may need to know that dietitians are capable of performing broader skills. Korean dietitians need to promote their skills in management if they want others to believe that

dietitians are capable of practicing them.

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