

Outcomes-based Curriculum Development and Student Evaluation in Nursing Education

Kim, Hesook Suzie

College of Nursing, University of Rhode Island, Kingston, Rhode Island, USA

Purpose: A curriculum development model is presented to examine the processes necessary to develop new programs or evaluate existing programs within the philosophy of outcomes-based education in nursing, especially in the context of accreditation. The philosophy of outcomes-based education is to produce individuals who can demonstrate the evidence of competencies in designated areas of education. For nursing education, this means competencies in performing the role of professional nursing as defined by the profession and social needs at the beginning level upon completing a nursing program. **Methods:** A curriculum development model has been developed analytically based on the literature and experiences. **Results:** A 10-step process framework incorporating the tenets of outcomes-based nursing education is illustrated. **Conclusion:** This curriculum development framework can be applied in developing new educational programs in nursing or to evaluate and revise existing programs in anticipation of the accreditation process that is moving with a full force in such countries as Korea.

Key words: Nursing education; Baccalaureate-standards; Accreditation-standards; Competency-based education; Curriculum

INTRODUCTION

The concept of outcomes-based education has been into curriculum development since the later part of the 20th century and into the first decade of the 21st century, and has come to be associated with competency-based education in more recent years. The key principle in this approach to education is the development of educational programs and application of learning processes with the beginning in identifying outcomes, that is, competencies expected as the results of an educational process. Frenk and associates state regarding the education of health professionals that "a competency-based approach is a disciplined approach to specify the health problems to be addressed, identify the requisite competencies required of graduates for health system performance, tailor the curriculum to achieve competencies, and assess achievements and shortfalls" (Frenk et al., 2010). Competency-based education further advocates for a time-independent approach to education in which the

achievement of competency is the goal independent of the length of time associated with educational programs. Curricular contents and learning processes are driven by outcomes/competencies specified for educational programs. In professional education this means identification of competencies needed by graduates to meet the needs of specific professional roles determined by professions and social needs. Curriculum development for outcomes-based education therefore starts with outcomes of education rather than with a predetermined set of contents to be included in an educational program. Outcomes/competencies are the bases for identifying and determining key educational contents and instructional processes. Outcomes-based education not only requires contents to be identified by outcomes but also instructional designs to be incorporated with competency-driven approaches.

In the traditional approach of curriculum development in 'nursing', the development of behavioral outcomes advocated by Bloom, Hastings, and Madaus (1971) as the first step in curriculum development was em-

* Paper presented at the Accreditation Conference in Seoul, Korea, June 2012.

Address reprint requests to : Kim, Hesook Suzie

College of Nursing, University of Rhode Island, Kingston, Rhode Island, 5421 Rodriguez Lane, Haymarket, VA 20169 USA

Tel: +1-571-261-5495 E-mail: hsuziekim@comcast.net

Received: November 4, 2012 Accepted: November 29, 2012

phasized. However, because behavioral outcomes identified for nursing curriculum, especially in courses in general were narrow in their scope to indicate professional competencies in nursing and were not necessarily tied to program outcomes, there has been a movement to broaden the concept of behavioral outcomes into a hierarchical structure of outcomes and competencies for educational programs. In addition because often behavioral outcomes were not the basis for selecting contents or instructional designs, there has been a shift in the approach to curriculum development to begin with *outcomes/competencies* as the driving force for curriculum development. This approach therefore breaks away from the long-held tradition of "having" the contents for education already established prior to curriculum design. A curriculum can be viewed as *tabula rasa* upon which a program is developed with the beginning with the determination of learning outcomes to be achieved as the results of education.

In this paper, a curriculum development model is presented to examine the processes necessary to develop new programs or evaluate existing programs within the philosophy of outcomes-based education. The philosophy of outcomes-based education is to produce individuals who can demonstrate the evidence of competencies in designated areas of education. For nursing education, this means competencies in performing the role of professional nursing as defined by the profession and social needs at the beginning level upon completing a nursing program. The

purpose of this paper is to show a systemic way for curriculum development based on the philosophy of outcomes-based education applying a process framework. A process framework incorporating the tenets of outcomes-based nursing education is presented so that nursing programs, especially those in Korea where the accreditation process is moving with a full force, may apply the process for development of new programs or evaluation/revision of existing programs.

A CURRICULUM DEVELOPMENT MODEL

As educational programs in nursing are accredited by national organizations, such as by Commission on Collegiate Nursing Education (CCNE) in the US and by the Korean Accreditation Board of Nursing Education (KABONE) in Korea, educational programs have to meet the accreditation standards for approval and recognition. The current accreditation philosophies and standards for nursing educational programs specified by CCNE in the US and KABONE in Korea advocate for outcomes-based educational programs in which the outcomes are in accordance with the standards and expectations of nursing profession (CCNE, 2009; KABONE, 2012). A framework has been developed to address the processes and issues in developing outcomes-based curriculum as shown in Figure 1.

Figure 1 shows the components for structuring the curriculum development

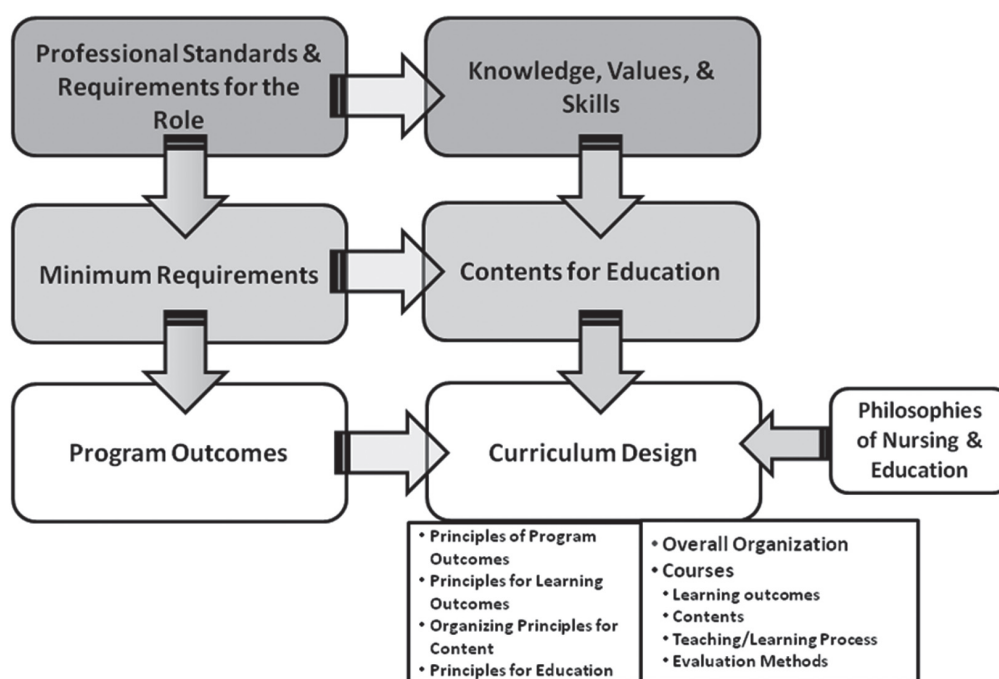


Figure 1. An outcomes-based curriculum development model.

opment process for an outcomes-based educational program. It is based on the principles of outcomes-based education and the learning model that emphasizes demonstration of competencies. The learning model adopted for this presentation is reflected by Jones, Voorhees, and Paulson (2002) for the Council of the National Postsecondary Education Cooperative. In this learning model, skills, abilities, and knowledge are acquired through integrated learning experiences, which culminate into competencies. Competencies then are to be demonstrated in the assessment of performance.

This framework (Figure 1) is constituted by three hierarchical levels with which a design of an educational program is made incorporating the principle that the purpose of an educational program in nursing is to produce graduates who show the evidence of competencies to perform the role of professional nursing. The first level encompasses the structure of professional standards and requirements for the role, which is then the basis for delineation of knowledge, values, and skills aligned with the structure at the general level. Delineation of professional standards and requirements for the role in nursing is accomplished by professional organizations such as by the American Nurses Association (ANA)'s *Scope & Standards of Nursing Practice* (ANA, 2010) or International Council on Nursing (ICN) *Scope of Practice* (ICN, 2004). For example, ICN *Scope of Nursing Practice* includes (a) providers of direct and indirect care both for health and illness in and across all environments, (b) designers, coordinators, and managers of care within a system of health care, and (c) functioning as a member of the profession advocating for the patient and the profession (ICN). While these statements are universally applicable and generic standards and requirements for a professional nursing role, they need to be further specified to fit into social contexts. As stated by the LANCET Commission on the education of health professionals (Frenk et al., 2010), healthcare professional roles are integral parts of the health system of a given society, and the required competencies for different healthcare professional roles are also intrinsically tied to the characteristics of the health system within which their role contributions are sought. This means that at the national level each country needs to have a set of standards and requirements for the practice of nursing, which reflect the contextual needs of the given country. In general however, country-specific statements in nursing need to reflect their alliance with the ICN *Scope of Nursing Practice* (ICN). Delineation of knowledge, values (attitudes), and skills for nursing based on the scope and standards of nursing practice and the requirements for professional nursing role are accomplished at the general level by the

profession including by its organizations, accrediting bodies, educators, and scholars. For example, the American Association of Colleges of Nursing (AACN) defines the roles for Baccalaureate generalist nurse as: (a) providers of evidence-based direct and indirect care both for health and illness, and in/across all environment, being patient advocates and educators, and practicing from a holistic, caring framework; (b) designers, coordinators, and managers of care within a system of healthcare, functioning as members of healthcare teams autonomously and interdependently within the healthcare team; and (c) members of the profession advocating for the patient and the profession, with a professional identity and accountability demonstrating an appropriate set of values and ethical framework for practice, and advocating for high quality care for all patients (AACN, 2008). AACN then delineates knowledge, values (attitudes), and skills specific to nine essentials of Baccalaureate nursing education (AACN). At this level the general aspects of knowledge, values, and skills are identified tied to the professional role requirements.

The second level of the framework (Figure 1) refers to the designation of minimum requirements as the competency requirements for a person to assume the role of nursing at the beginning level, that is, upon completing a nursing education program. Minimum requirements are expressed in terms of competencies that result from education of required contents. Minimum requirements for nursing are established legally by nursing licensing bodies (State Boards of Nursing in the US, and the Ministry of Health and Welfare in Korea), and are also set by accrediting organizations for nursing education. Additionally professional nursing organizations may establish minimum requirements through their position papers, and nursing researchers and scholars may elaborate on the nature of competencies to be achieved through education.

Minimum requirements for beginning practitioners are intrinsically tied to the conceptualization of professional competencies elaborated for professions. In the US, Institute of Medicine (IOM) in its report on the quality and safety of healthcare provision (IOM, 2000) launched a movement to identify specific nature of competencies for health professions. In the IOM (2003) report on health professions education, the following 5 core competencies were recommended for all health professionals to meet the needs of the 21st century health care: (a) competencies in providing patient-centered care, (b) competencies in working in interdisciplinary teams, (c) competencies in employing evidence-based practice, (d) competencies in applying quality improvements, and (e) competencies in utilizing informatics. In addition, IOM in the same report proposed 6 quality aims as outcomes

in healthcare systems that included safety, effectiveness, patient centeredness, timeliness, efficiency, and equity. In response to these proposals, health professions have been engaged in delineating profession-specific competencies in these core areas. While Greiner and Knebel (2003) discuss these core areas of competencies for various health professions, Finkelman and Kenner (2009) specifically elaborate on these five core competencies from the nursing context. In addition, with the funding by the Robert Wood Johnson Foundation, the project QSEN (Quality and Safety Education for Nurses) was launched in order to specify competencies in these core areas with "safety" as an additional core area, specifically to guide curriculum development for nursing education including basic education programs, transition to practice programs, and continuing education programs (Cronenwett et al., 2007). The QSEN project elaborated knowledge, skills, and attitudes associated with the six core areas of competencies with the following definitions for the core areas:

- Patient-centered care: Recognize the patient or designee as the source of control and full partner in providing compassionate and coordinated care based on respect for patient's preferences, values, and needs.
- Teamwork and collaboration: Function effectively within nursing and inter-professional teams, fostering open communication, mutual respect, and shared decision-making to achieve quality patient care.
- Evidence-based practice: Integrate best current evidence with clinical expertise and patient/family preferences and values for delivery of optimal health care.
- Quality improvement: Use data to monitor the outcomes of care processes and use improvement methods to design and test changes to continuously improve the quality and safety of health care systems.
- Safety: Minimize risk of harm to patients and providers through both system effectiveness and individual performance.
- Informatics: Use information and technology to communicate, manage knowledge, mitigate error, and support decision-making. (Cronenwett et al., 2007)

While the QSEN's core competency areas and definitions along with the identified knowledge, skills, and attitudes are critical bases for the incorporation of competencies into curriculum, these core areas particularly address the requirements for quality and safety of nursing care, rather than being comprehensive to encompass all aspects of

nursing practice. Advances such as this many need to be integrated into more comprehensively elaborated competencies such as those inferable from the *Essentials of Baccalaureate Education for Professional Nursing Practice* (AACN, 2008). Another approach to expanding the core areas identified by QSEN to be more comprehensive would be to translate all 6 quality aims of IOM into nursing competencies.

In addition, there have been other efforts to elaborate competencies in nursing. For example, Lenburg et al. (2009) proposed the COPA (The Competency Outcomes Performance Assessment) model with 8 essential core practice competency categories, which include (a) assessment and intervention skills, (b) communication, (c) critical thinking skills, (d) human caring/relationship skills, (e) teaching skills, (f) management skills, (g) leadership skills, and (h) knowledge integration skills. Hsu and Hsieh (2012) used a competency inventory that includes ethics and responsibility, general clinical skills, lifelong learning, clinical biomedical sciences, caring, and critical thinking & reasoning.

The work is still ongoing to come to a consensus regarding the competencies for nursing practice, which are the bases for determining minimum requirements. Since minimum requirements for nursing are the basis with which the necessary contents for educational programs in nursing are delineated in order to be used as the general guidelines for curriculum development, it is essential to have professional nursing competencies delineated for articulation of them in nursing curriculum. The delineation of contents for nursing education at this level based on the minimum competencies tends to be general. However, the work by QSEN (Cronenwett et al., 2007) shows the level of specification regarding knowledge, skills, and attitudes necessary for curriculum development.

It is at the third level (Figure 1) that curriculum development is processed incorporating the principles of outcomes-based education. Program outcomes as the structural component identify competency outcomes for nursing programs, and general program outcomes proposed by accrediting bodies or professional organizations elaborate on universally accepted outcomes in the professions. For example, CCNE specifies that baccalaureate nursing curriculum must incorporate the nine essentials of Baccalaureate Education for Professional Nursing Practice (AACN, 2008), while KABONE specifies in its criteria that nursing programs are required to articulate program outcomes that reflect the KABONE's 12 program outcomes as the blue prints for curriculum. As shown in Figure 2, the set of nine essentials by AACN and the set of 12 program outcomes by KABONE address the essential core areas of outcomes. Both sets of program outcomes specify core areas of

Core Area	Criteria by KABONE ¹	Criteria by CCNE (AACN) ²
Core Knowledge	1. 다양한 교양지식과 전공지식에 근거한 간호술을 통합적으로 실무에 적용한다.	1. Liberal Education for Baccalaureate Generalist Nursing Practice
Clinical Practice	2. 대상자의 간호상황에 따른 핵심기본간호술을 선택하여 실행한다.	9. Baccalaureate Generalist Nursing Practice
Collaboration Coordination	4. 건강문제 해결을 위한 전문분야간 협력관계를 설명한다.	6. Interprofessional Communication and Collaboration for Improving Patient Health Outcomes
	5. 보건의료팀 내 업무조정 역할의 중요성을 설명한다.	
Professionalism	7. 간호전문직 표준을 이해하고 확인한다.	8. Professionalism and Professional Values
	8. 간호실무의 법적, 윤리적 기준을 이해하고 간호실무에 통합한다.	
Leadership	9. 간호리더십의 원리를 비교 분석한다.	2. Basic Organizational and Systems Leadership for Quality Care and Patient Safety
	10. 간호팀 내 리더십을 발휘한다.	
Scholarship	11. 간호연구를 기획하고 직접 수행한다.	3. Scholarship for Evidence-based Practice
Health Policy	12. 국내의 보건의료정책 변화를 인지한다.	5. Healthcare Policy, Finance, and Regulatory Environments
Communication	3. 언어적, 비언어적 상호작용을 통한 치료적 의사소통술을 적용한다.	
Critical Thinking	6. 비판적 사고에 근거한 간호과정을 적용하고 임상적 추론을 실행한다.	
Information Management		4. Information Management and Application of Patient Care Technology
Population Health		7. Clinical Prevention and Population Health

¹KABONE (2012): Korean Accreditation Board of Nursing Education;²AACN (2008): The Essentials of Baccalaureate Education for Professional Nursing Practice.³The numbering systems of criteria in this figure are from the official KABONE and AACN documents.**Figure 2.** Comparison of the standards for curriculum development in nursing by KABONE & AACN.

competency in: (a) core knowledge including liberal education, (b) clinical practice, (c) collaboration and coordination, (d) professionalism, (e) leadership, (f) scholarship, and (g) health policy, while the areas of information management and population health are specified by AACN only, and the areas of communication and critical thinking are separately specified in the KABONE criteria only. On the other hand, as discussed in the preceding section, there are other models of competency outcomes for nursing education such as the QSEN model (Cronenwett et al., 2007) and the COPA model (Lenburg et al., 2009) which may be applied to develop program outcomes, which are aligned

to some extent with the nine essentials of AACN.

Regardless of which set a school adopts as the overall guides for program outcomes, specific program outcomes of an educational program are the foundation upon which curriculum is built. It is also guided by the philosophies of nursing and education held by an educational entity. Philosophical statements regarding nursing and education must be established by educational entities in order to provide the fundamental beliefs that undergird the implementation of educational programs in nursing. General commitments regarding nursing education are thus specified by such philosophical statements, identifying unique charac-

teristics of given educational entities' curriculum and approaches to education. Curriculum design for a program in nursing education under the tenets of outcomes-based education in nursing therefore begins by embracing the essential program outcomes for professional nursing education and integrating the key features identified in the program's philosophical statements of nursing and education. Although the program outcomes specified in this paper are for the baccalaureate level in terms of the competencies for beginning practitioners in nursing, there are program outcomes specific to different levels of education such as master's and doctoral levels. Furthermore, as stated by the LANCET Commission (Frenk et al., 2010), program outcomes for nursing education must be based on the needs of a specific society (i.e., country) and should be understood as being fluid and evolutionary. Therefore, a set of program outcomes specified at present would need to be revisited for possible revisions as the needs of the society change and the role of nursing evolves.

Curriculum development refers to both designing new programs and evaluating/revising existing programs. As shown in Figure 1, curriculum design based on program outcomes with the integration of philosophies of nursing and education is processed through the establishment of four principles, and developed into an organized learning system. At the foundation with the establishment of philosophical statements regarding nursing and education, there are four sets of principles that have to be specified in line with the philosophical statements. These are:

- Principles of program outcomes—In nursing education, the major principles of program outcomes are that graduates are competent to assume the role of professional nursing at the beginning level in various healthcare settings, and that graduates are prepared to advance to increasing competency.
- Principles for learning outcomes—From the tenets of outcomes-based education, the principles of learning outcomes are that educational programs culminate to the achievement of program outcomes, that they specify particular competencies to be achieved through learning, and that learning outcomes in programs need to be organized sequentially for different levels and are oriented to cumulative attainment.
- Organizing principles for content—Organizing principles for content refer to the ways learning outcomes and learning contents associated with them are organized in terms of levels, courses, and sections. As the professional nursing role involves practice in various clinical settings and healthcare situations, and because there are

various ways of grouping clinical contents in nursing, nursing-specific learning contents need to be grouped by specific organizing principles. Groupings of nursing contents have been made by clinical specialty (adult, pediatric, psychiatric, maternal-child health, public health nursing, etc.), by client characteristics (adult nursing, child health, gerontological nursing, women's health, etc.), by health/illness characteristics (health promotion, acute illness, chronic illness, terminal care, etc.) by the nature of illness (biophysiological, psychosocial, etc.), or by healthcare settings (acute care, long-term care, ambulatory care, community care, etc.). For each of these examples there are specific organizing principle applicable to differentiate contents into various sections for curriculum design.

- Principles of education—Specific principles of education stem from the philosophy of education adopted by an educational program. Principles of education provide the basis for the processes of teaching-learning that are integrated into the curriculum and its implementation.

Guided by the foundation incorporating the philosophies of nursing and education and four principles for a curriculum an educational program is developed with an overall matrix for levels and sequences in relation to learning outcomes, associated contents, and teaching-learning

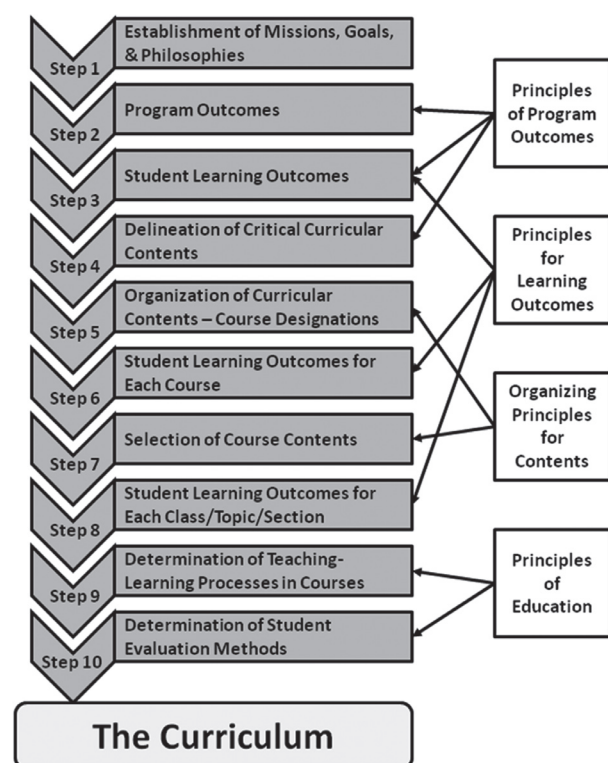


Figure 3. Process of curriculum development.

processes. Following the overall design of the curriculum, courses within the program in terms of learning outcomes, contents, teaching-learning processes, and evaluation methods need to be specified. Figure 3 shows the sequential nature of this process moving from the establishment of missions, goals, and philosophies to the determination of student evaluation methods in 10 steps. Figure 3 also shows how the four principles specified above integrate into a curriculum. This process of curriculum development with 10 specific steps can be applied in developing new programs or as a model for a systematic review of existing programs.

PROCESS OF CURRICULUM DEVELOPMENT

In the US, an educational program in nursing must meet the requirements of a parent institution, usually the university to which it belongs, of a state board of nursing that grants licensure for registered nurses within the state, and of accreditation bodies, both for general university education and specific to nursing education. Curriculum development in nursing education is most stringently reviewed and evaluated by the national accrediting body for nursing education (that is, CCNE), which applies a specific framework for validation. The specific standards used by CCNE regarding the curriculum development are the following (CCNE, 2009, pp. 13–16):

The curriculum is developed in accordance with the mission, goals, and expected aggregate student outcomes and reflects professional nursing standards and guidelines and the needs and expectations of the community of interest. Teaching-learning practices are congruent with expected individual student learning outcomes and expected aggregate student outcomes. The environment for teaching-learning fosters achievement of expected individual student learning outcomes.

- The curriculum is developed, implemented, and revised to reflect clear statements of expected individual student learning outcomes that are congruent with the program's mission, goals, and expected aggregate student outcomes.
- Expected individual student learning outcomes are consistent with the roles for which the program is preparing its graduates. Curricula are developed, implemented, and revised to reflect relevant professional nursing standards and guidelines, which are clearly evident within the curriculum, expected individual student learning outcomes, and expected aggregate student outcomes.
- The curriculum is logically structured to achieve expected individual

and aggregate student outcomes.

- Teaching-learning practices and environments support the achievement of expected individual student learning outcomes and aggregate student outcomes.
- The curriculum and teaching-learning practices consider the needs and expectations of the identified community of interest.
- Individual student performance is evaluated by the faculty and reflects achievement of expected individual student learning outcomes. Evaluation policies and procedures for individual student performance are defined and consistently applied.
- Curriculum and teaching-learning practices are evaluated at regularly scheduled intervals to foster ongoing improvement.

These standards for curriculum development are depicted in Figure 4 as the framework for validation for curriculum development. With this as the framework, an illustration of curriculum development following the 10 steps in the process of curriculum development presented in Figure 3 is presented as it would be done in the US. As the starting point in the curriculum development, the nursing curriculum at a college should be in alignment with the mission statements of its parent university, meets the curricular requirements of the parent university in terms of general education and credit allocation, satisfies the requirements of a State Board of Nursing, and addresses the requirements for accreditation by CCNE.

Step 1 involves establishments of mission, goals, and philosophies specific for a college. A college's mission statement reflects in general how the college identifies itself in relation to its educational role, in advancing knowledge and scholarship, and contributing to the betterment of society and its people. Often only some parts of a college's mission statements are specifically relevant to curriculum development. Along with a mission statement, a college also must develop philosophical statements regarding nursing and education to base the curriculum and the educative process. In a college's philosophical statements, there may be philosophies regarding the nature of humans, of knowledge, and of practice in addition to nursing and education. Such philosophical statements reveal a college's beliefs regarding humans, nursing and its practice, and how education is best accomplished. These philosophical statements are the foundation upon which the characteristics of curriculum are built.

Step 2 is for the development of program outcomes. Each college establishes its program outcomes that it aims to accomplish through its program. A college must be able to identify linkages between its program outcomes and its missions, goals, and philosophies. As the CCNE standards of baccalaureate education requires nursing curriculum to

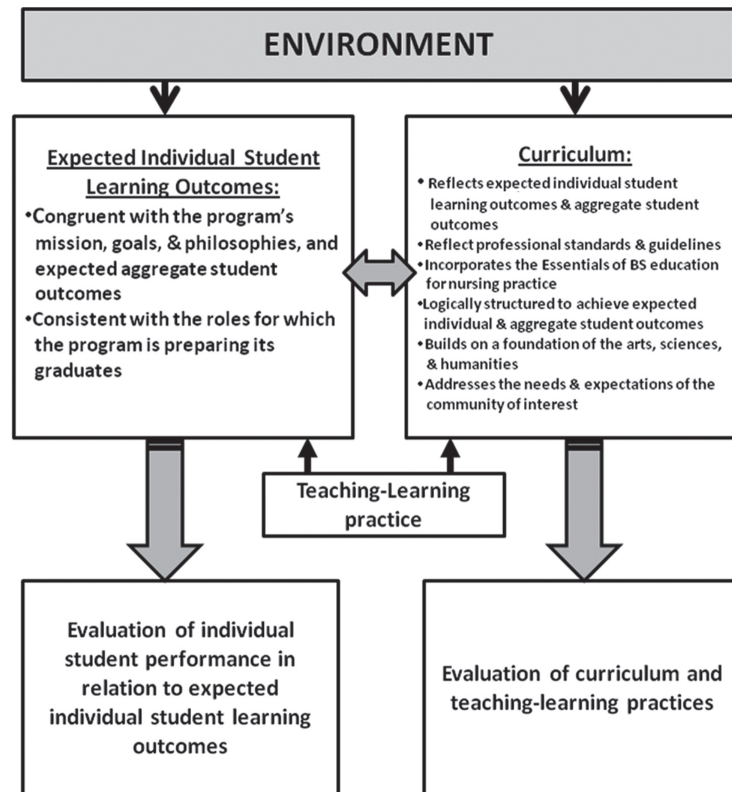


Figure 4. The frame of curriculum development representing the standards of Commission on Collegiate Nursing Education.

represent the AACN's Essentials of Baccalaureate Program in Nursing programs, it is also critical to show how a school's program outcomes are aligned with these Essentials.

Step 3 is to develop student learning outcomes for the curriculum. This step involves delineation of student learning outcomes for a college's program outcomes. This is the step in which program outcomes are spelled out in detail in terms of specific types of learning outcomes. Many colleges use knowledge, skills, and values as specific types of learning outcomes, and specify their program outcomes in terms of these three types of learning outcomes. There are other typologies of learning outcomes such as the one consisting of appreciation, knowledge, and implementation, and another consisting of knowing, doing, and valuing. A set of student learning outcomes in the curriculum is spelled out for a school's program outcomes applying an adopted typology of student learning outcomes. This thus becomes the base upon which each course in a program identifies its student learning outcomes.

Step 4 is the process of delineating critical curricular contents for curriculum. Critical curricular contents for a program are delineated in relation to a college's program outcomes and student learning outcomes. For nursing curriculum there are various types of contents, such as gen-

eral education contents, supportive contents, clinical contents, professional practice contents, and non-practice oriented contents. In general, general education and supportive contents for a college's program are identified through its deliberations regarding required and recommended non-nursing courses to support the liberal education base for the program. It is the delineation of critical clinical curriculum contents that requires a systematic approach. Clinical nursing contents are related to the role of professional nursing, which functions in a variety of health-care settings, for clients with different sorts of health-related issues and characteristics, and for diverse client-units such as individuals, families, groups, communities, and populations. Therefore, there is a need to adopt a system to organize critical clinical contents in order to delineate contents relevant to program outcomes and student learning outcomes. For example, it is possible to use a classification system to identify critical contents by specifying a typology of knowledge. Such a typology may be specified in four types of knowledge as:

Type I. Knowledge with a focus on healthcare

Health promotion, disease prevention & risk reduction

Acute illness care

Long-term care

Type II. Knowledge with a focus on the type of health problems/issues

Health maintenance
Physical diseases/illness
Childbearing/childrearing
Psychiatric/mental health
Rehabilitation

Type III. Knowledge with a focus on client type by lifespan and by unit

Children (C)
Adults (A)
Elderly (E)
Family (F)
Groups (G)
Community (Cm)
Population (P)

Type IV. Knowledge with a focus on settings of healthcare

Acute care institution (hospital) (Ac)
Community (home, group, population) (Cm)
Ambulatory institution (daycare, clinic, etc.) (Am)
Long-term care institution (nursing home, rehabilitation institution, long-term care institution) (Lt)

This four type classification system can be used to organize critical clinical contents for an overall nursing curriculum by a matrix construction as shown in Figure 5. Critical clinical contents delineated by this method along with professional practice contents and non practice oriented contents are then specified for a curriculum to be distributed into different courses.

In Step 5 for the organization of curricular contents, the matrix developed in Step 4 (shown in Figure 5) can be used as the base, and applying principles for organization into different courses. Organizing principles for separating critical contents into different courses are usually by: (a) movement from simple to complex, (b) retaining necessary clinical specialties, (c) movement from the general to specialized, and (d) integration. A curriculum can be designed then to consist of (a) courses for foundations of general nursing for basic knowledge and skills in nursing practice, and knowledge and skills applicable to all clinical situations, (b) courses for specialized clinical orientations, (c) courses for clinical practicum, and (d) courses for non-clinical contents such as regarding the profession, professional practice, the healthcare system, societal issues, and research. The most critical issue during the process of curriculum development in nursing, whether it is to revise an existing program

I	IV	Type II																																							
		Health Promotion								Disease/ Injury								Child-bearing Child-rearing								Psychiatric								Rehabilitation							
		Type III (Client Type)								Type III (Client Type)								Type III (Client Type)								Type III (Client Type)								Type III (Client Type)							
		C	A	E	F	G	Cm	P	C	A	E	F	G	Cm	P	C	A	E	F	G	Cm	P	C	A	E	F	G	Cm	P	C	A	E	F	G	Cm	P					
1	Ac																																								
	Cm																																								
	Am																																								
	Lt																																								
2	Ac																																								
	Cm																																								
	Am																																								
	Lt																																								
3	Ac																																								
	Cm																																								
	Am																																								
	Lt																																								

C=Children; A=Adults; E=Elderly; F=Family; G=Groups; Cm=Community; P=Population; Ac=Acute care institution (hospital); Cm=Community (home, group, population); Am=Ambulatory institution (daycare, clinic, etc.); Lt=Long-term care institution (nursing home, rehabilitation institution, long-term care institution).

Figure 5. A matrix (an example) for delineation of critical contents for nursing curriculum applying a system of content type.

or to develop a new program, is related to determining what would be the best way of achieving program outcomes in relation to specialized clinical contents. In general, nursing faculty members identify themselves with specific clinical specializations with expertise, orientations, and vested interests, and historically have been involved in teaching courses related to their clinical specializations within programs. The issue therefore is to come up with the best approach to organize critical clinical contents to meet program outcomes, which may mean dismantling existing and traditional course configurations. This is more problematic in colleges which have departments or sub-groups aligned with clinical specializations in their organizational structures. New course configurations transcending clinical specializations and departmental structures may require non-traditional ways of teaching assignments and teamwork. Configuration of courses applying a classification system then must rely faithfully on the accepted organizing principles for distribution of contents.

With the delineation and organization of courses, Step 6 follows to develop student learning outcomes for each course using program outcomes as the base. For this process, the faculty can be divided into small groups constituted by members who would be involved in teaching specific courses together to develop student learning outcomes in the respective courses. After delineating student learning outcomes for all courses, the faculty need to assemble these outcomes and compile for each program outcome to examine whether or not the student learning outcomes in the courses culminated into the referenced program outcome. If any of the program outcomes is viewed to be un-achievable by the enumerated student learning outcomes in the courses, then the faculty should re-work the student learning outcomes in the courses to fill such gaps. The basic understanding is that a cumulative combination of course-specific learning outcomes must be necessary to achieve program outcomes. Therefore, the relationships between course-specific learning outcomes and program outcomes must be clearly discernible.

Step 7 of the process involves delineating critical course contents for courses in the program. This process was guided by student learning outcomes developed in Step 6 and also by an overall content matrix such as shown in Figure 5 identified in Step 4. After a compilation of critical contents for each course in Step 7, course contents need to be sequentially organized into sub-sections such as classes or topics in Step 8. And, specific student learning outcomes to be achieved by sub-sections should be identified and elaborated on regarding their relevance to the course learning outcomes. Sequential division of course contents would be ac-

complished by organizing principles appropriate for each content area.

In Step 9, following the results of previous steps including the specification of learning outcomes for courses, the selection of course contents, and the delineation of learning outcomes for sequentially organized sub-sections of courses, particular teaching-learning processes need to be spelled out for each course applying the college's philosophy of education as the basic posture. Selection of particular teaching-learning processes should be guided by types of outcomes (competencies) to be achieved in courses. Faculty needs to identify teaching-learning processes specific to different types of learning outcomes. Faculty's creativity should be encouraged for selection of teaching-learning processes in courses.

Step 10 involves determination of student evaluation methods in courses. Prior to the specification of evaluation methods, it is necessary to assign weights to learning outcomes in courses in order to clarify the degree with which each learning outcome represents a course's contribution to program outcomes. With weights established for learning outcomes in courses, evaluation methods are determined for each learning outcome. Conventional methods such as tests, written assignments, oral presentations, demonstration and performance of scholarship and clinical skills, and participation are appropriate in general. For clinical practicum courses, evaluation methods for clinical competency need to be established, which may include faculty's practicum journals written for each student throughout a semester, student self-evaluation, and written clinical assignments such as nursing care plans, clinical projects, and case studies. For each course, an evaluation matrix should be developed, which links learning outcomes and evaluation methods with specification of weights for each outcome and each method of evaluation.

An educational program in nursing developed through this process represents a commitment to outcomes-oriented learning and to preparing competent beginning professional nursing practitioners. A systematic deliberation integrated into the process of curriculum development ensures a logical and comprehensive organization of learning outcomes, educational contents, and teaching-learning processes.

CONCLUSION

Accreditation for educational programs is to ensure that educational institutions provide quality education to students through their educational programs and that educational institutions achieve their stated missions, goals, and expected outcomes through their programs. Accreditation for professional nursing programs is to account for the qual-

ity of professional nursing education so that nursing programs prepare their students to become competent members of the profession and to fulfill the role of nursing in a competent manner as beginning practitioners upon graduation. As educational programs in nursing in Korea prepare to engage in this process of accreditation, it is necessary for schools to engage in self-evaluation of all aspects of their programs, but most critically of their curriculum. The framework for the process of curriculum development presented in this paper can be used as a guide in such self-evaluation processes for schools with established programs as well as in developing new programs.

One of the major issues in accreditation that needs to be emphasized in relation to self-evaluation and curriculum development is to view the accreditation standards as guidelines rather than as templates to be filled. Each school needs to be creative, unique, and innovative while adhering to the requirements set down by accreditation standards so that nursing programs are not the products of standardized molds that result in a lack of variations in characteristics but are programs with individually distinctive characteristics and missions which go beyond the requirements. The most critical requirement in the process of curriculum development, whether it is for a new program or for revision or evaluation, is the application of a process of consensus-building in which the whole faculty should participate in all stages of the process. It is also advisable to include inputs from students, graduates, and potential employers during the development.

As nursing curricula become fully articulated in the ideals of outcomes-oriented learning and competency-based education, there are two issues that need to be developed further. The first is related to the teaching/learning process in outcomes-oriented and competency-based education. Frenk et al. (2010) recommended that a serious effort is necessary to develop and adopt teaching/learning processes that emphasize different ways individuals attain competencies in health professional education. The conventional teaching/learning methods in nursing education are in general group-based methods and do not address different modes, speed, and sequences with which individuals attain competencies. There is a critical need to develop teaching methods that tailor to individual differences in learning in nursing. The second issue is related to evaluation of competencies. There has to be an intense effort to develop specific ways of assessing and evaluating students' attainment of learning outcomes and competencies. Many of the conventional methods of eval-

uation may not be appropriate in assessing competencies especially in relation to nursing care of patients. In nursing there is a need to integrate evaluation methods for competencies in specific knowledge, values, and skills, and at the same time for competencies in providing nursing care to clients. Outcomes-oriented and competency-based nursing education must integrate methods that can actually measure its success.

REFERENCES

- American Association of Colleges of Nursing. (2008). *The essentials of baccalaureate education for professional nursing practice*. Washington, DC: Author.
- American Nurses Association. (2010). *Nursing: Scope and standards of practice* (2nd ed.). Washington, DC: Author.
- Bloom, B. S., Hastings, J. T., & Madaus, G. G. (1971). *Handbook on formative and summative evaluation of student learning*. New York: McGraw-Hill.
- Commission on Collegiate Nursing Education. (2009). *Standards for accreditation of baccalaureate and graduate degree nursing programs*. Washington, DC: Author.
- Cronenwett, L., Sherwood, G., Barnsteiner, J., Disch, J., Johnson, J., Mitchell, P., et al. (2007). Quality and safety education for nurses. *Nursing Outlook*, 55, 122-131. <http://dx.doi.org/10.1016/j.outlook.2007.02.006>
- Finkelman, A., & Kenner, C. (2009). *Professional nursing concepts: Competencies for quality leadership*. Sudbury, MA: Jones and Bartlett Publishers.
- Frenk, J., Chen, L., Bhutta, Z., Cohen, J., Crisp, N., Evans, T., et al. (2010). Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *Lancet*, 376, 1923-1958. [http://dx.doi.org/10.1016/S0140-6736\(10\)61854-5](http://dx.doi.org/10.1016/S0140-6736(10)61854-5)
- Greiner, A. C., & Knebel, E. (2003). *Health professions education: A bridge to quality*. Washington, DC: National Academies Press.
- Hsu, L. L., & Hsieh, S. I. (2012). Development and psychometric evaluation of the competency inventory for nursing students: A learning outcome perspective. *Nurse Education Today*, <http://dx.doi.org/10.1016/j.nedt.2012.05.028>
- Institute of Medicine. (2000). *To err is human: Building a safer health system*. Washington, DC: Author.
- Institute of Medicine. (2003). *Health professions education: A bridge to quality*. Washington, DC: Author.
- International Council on Nursing. (2004). *Position statement: Scope of nursing practice*. Geneva, Switzerland: Author.
- Jones, E., Voorhees, R., & Paulson, K. (2002). *Defining and assessing learning: Exploring competency-based initiatives*. Washington, DC: Council of the National Postsecondary Education Cooperative.
- Korean Accreditation Board of Nursing Education. (2012). *The standards of accreditation for nursing education*. Seoul: Author.
- Lenburg, C. B., Klein, C., Abdur-Rahman, V. A., Spencer, T., & Boyer, S. (2009). THE COPA MODEL: A comprehensive framework designed to promote quality care and competence for patient safety. *Nursing Education Perspectives*, 30, 312-317.