American Association
of Colleges of Nursing
The Voice of Academic Nursing

VISION

for Sharing Data and Information Across Nursing Education, Practice, and Regulation

Includes Criteria for the Development and Modification of Technologies

The Essentials: Core Competencies for Professional Nursing Education, which was approved by member schools affiliated with the American Association of Colleges of Nursing in April 2021, calls for new approaches to preparing nurses using competency-based education (CBE). This transformation provides a unique opportunity for schools of nursing to re-envision how best to educate nurses for contemporary practice. The _Essentials_ sets a new standard for excellence and builds a bridge to the future of academic nursing. AACN is committed to providing support and guidance to bring about this transformation, which requires future thinking to create a preferred future for the discipline.

The _Essentials_ Technology Working Group, comprised of experts from nursing, medicine, and other fields, was charged with developing recommendations regarding: use of technology within academic nursing; existing or needed technology/digital tools to support the implementation of the _Essentials_; tools that support the needs of AACN member schools, accreditors, and students; and appropriate standards for technology, tools, and products to allow communication and sharing across the nursing community.

The Technology Working Group began its work by asking: What are the vision and goals for technology use in academic nursing? Addressing this question was critical to addressing the group's charge. The vision, goals, and recommendations are delineated below.

The overarching vision calls for an interoperable, integrated, information system - supported by technology, people, and processes – that facilitates the sharing of data and information among schools of nursing, healthcare settings, and regulatory bodies. This system must support the needs and promote the best use of resources for schools of nursing, faculty, students, practicing nurses, employers, and regulators, including licensing, accrediting, and certifying bodies.

The goals include:

1. Support the implementation of the AACN _Essentials_ by schools, practice partners, and accreditors.

2. Support the development, revision, and implementation of nursing curricula, including the ability of schools to map curricula, track competencies and learning outcomes across the curriculum, and generate reports for accreditation, licensing, and certification boards.

3. Support the generation of aggregate reports by AACN and other appropriate stakeholders regarding nursing education, curricula, and learning outcomes.

4. Create an electronic learner record for students that allows tracking of competency development (including knowledge, skills, and attitudes) and assessment in their current education program, future education programs, and lifelong learning experiences. The learner record then becomes a trackable and editable document throughout the individual's professional career.

5. Promote sharing and collaborative development of learning resources and courses among schools of nursing and other health professional programs.

Example Scenarios that Illustrate the New Vision

Scenario 1: With the appropriate technologies and tools, schools could map their current curriculum with the *Essentials* competencies and sub-competencies across all courses. The faculty along with their practice partners could then use these tools to identify gaps where content, additional learning experiences, and assessments are needed. Assessment methods (when, how, and where conducted) would be included in this tool and identified across the curriculum with the competencies addressed. This same tool could be used by the school to easily generate a comprehensive report on the curriculum for accreditors and licensing bodies showing where each of the *Essentials* competencies are addressed. Updates to the curriculum (courses, objectives, learning experiences, assessments) could be made regularly to facilitate quality improvement reviews by the faculty and generate up-to-date reports.

Scenario 2: Schools/programs would have one resource for inputting and tracking how, where, and by whom competencies are demonstrated and assessed for individual students. Faculty in all courses would be able to input information for students in their courses. In addition, they would see where a student is along the continuum of competency development from one course to the next, including where the student may need additional opportunities to gain and demonstrate competency attainment. Clinical faculty or preceptors could also input information for individual students. Importantly, students could have access to their own record during the program and after graduation. This record would allow students to show employers or future education programs what competencies they have attained and how they were measured. The student, now a lifelong learner, would be able to update the record by adding new competency development and experiences.

Scenario 3: In this time of increasing healthcare complexity, faculty shortages, and contracting resources, nursing programs would be able to share learning resources (e.g., simulations, learning modules, videos, presentations, assessments) as well as full courses. Consider the case of Dr. Smith, a faculty member at Y University and an expert in the ethics of the expanding use of AI in healthcare, a subject area of great interest to other schools of nursing. With interoperable learning platforms and resources, Dr. Smith would be able to upload assessment and curricular resources so Z University and other schools would be able to access the content and adapt it to their local needs, while maintaining attribution to Dr. Smith. This model would decrease duplication of resources and effort while increasing accessibility to high quality, current content.

Examples of Products to Support the Implementation of the *Essentials*

- Technology-based tools to map curriculum/courses. Using the AACN *Essentials*, this tool would allow programs to identify where competencies were addressed in both didactic and/or practice learning experiences along with the type of experience. It also would identify where assessments occurred, including the type of assessment tool or method used. The tool would allow schools to document and use the information internally as well as generate comprehensive or selective aggregate reports for accreditors and state licensing bodies. Such technology also would allow schools to upload curricular information into a database maintained by AACN to generate aggregate reports on nursing curricula and competency development.

- Technology-based tools to record and track competency attainment and progression across the education program. The tool would allow the input of information on student learning experiences and competency assessment by faculty, preceptors, or others engaged in the learning and assessment process. The tool would allow programs to track individual student outcomes, cohort outcomes, and aggregate program outcomes. The student should have access to view their data during the program and retain ownership of data after graduation. This information should be sharable with other systems to allow continued tracking of competencies as the student progresses through the program, other degree programs, and into professional practice.

Criteria for the Development and Modification of Technologies

The criteria below for the development and modification of technologies are considered basic and important for the successful implementation of the *Essentials*, implementation of CBE, and attainment of the goals for an interoperable, integrated information system delineated above. These criteria are intended for consideration by schools when evaluating technologies, particularly to support the implementation of the *Essentials* and by vendors considering developing products.

- Products must have the ability to integrate data models and export/import data with other systems necessary for the delivery of nursing education, including possible future systems required by curriculum or regulatory agencies.
- Products must have the ability to be integrated with other systems through use of data standards, APIs, or other enabling technologies.
- Products must be developed using MedBiquitous, IMS, IEEE or other relevant education data standards or demonstrate compatibility with them.
- The product is open source or readily accessible.
- The vendor should have a plan for faculty training and ongoing support for the implementation and use of the product.
- Vendor should have a plan to maintain and sustain the currency of the product.
- Cost is a factor; products must be reasonably priced to allow all schools to have access to them, not only for initial use, but for sustained, long-term use.
- The competency tracking tool should adhere to the principles of Self Sovereign Identity and have the capability for students to retain ownership of their own data after graduation.
- Competency tracking tools should allow access for faculty, preceptors, and students with context-based views for easy input and access to the right information at the right time for the right purpose.
- Vendor should clarify insurance, policies, and procedures regarding indemnifications for university.
- Ensure that vendor policies and processes regarding individual/student privacy and intellectual property are in accordance with local, international regulations as applicable, for example Family Educational Rights and Privacy Act (FERPA) and General Data Protection Regulation (GDPR.)

AACN *Essentials* Technology Working Group

David Bowersox, MBA
Vice Dean, Finance and Administration
Duke University

Mary Joy Garcia Dia, DNP
Director, Nursing Informatics
New York Presbyterian Hospital

Tao Le, MD
Professor of Medicine
University of Louisville

Janelle Sokolowich, PhD
Academic Vice President and Dean
Western Governors University

Melissa Stec, DNP
Professor
Emory University

Dan Weberg, PhD
Assistant Professor of Clinical Practice
The Ohio State University

Alison Whelan, MD
Chief Academic Officer
Association of American Medical Colleges

Marisa Wilson, DNSc
Associate Professor and Chairperson
University of Alabama at Birmingham

AACN Staff Liaisons

Joan Stanley, PhD
Staff Lead
Chief Academic Officer

George A. Zangaro, PhD
Chief Policy and Scientific Officer

Katie Fioravanti, PhD
Foundation Director

Bridget Bingle
Nursing Education Coordinator