



Integration of the WFME Standards and AUN-QA Criteria for Student Assessment in Undergraduate Medical Education

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Quality assurance (QA) is a broad-based activity, which encompasses both quality management and quality control, and requires all the policies, standards, systems and processes in place to maintain and improve medical education quality. QA can be managed through an institutional monitoring that should include the evaluation of teaching and learning approaches, and the assessment. Accreditation standards by international agencies such as the World Federation for Medical Education (WFME) are to be followed for an external quality assurance. In addition, the ASEAN University Network-Quality Assurance (AUN-QA) is the assessment criteria for promoting QA in higher educational programs in ASEAN countries. Both WFME and AUN-QA require that teaching and learning approaches and assessment methods be aligned to the program learning outcomes. The purpose of this review is to compare the WFME standards and the AUN-QA criteria on teaching and learning approaches and methods of assessment to encourage the integration of these two QA systems for undergraduate medical education.

Keywords: WFME, AUN-QA, Quality assurance, Assessment, Medical education, Quality learning

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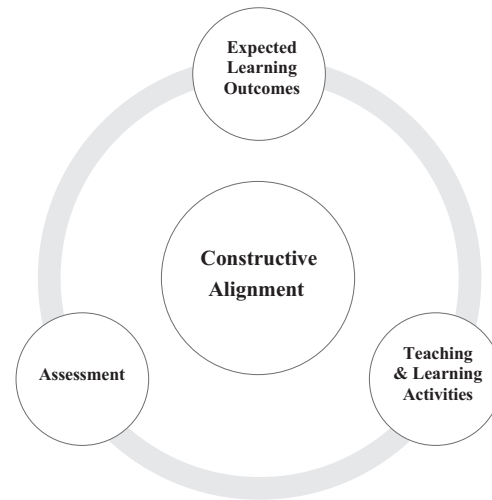
Introduction

Quality assurance (QA) in medical education is vital to ensure that the expectation of stakeholders including graduates, employers of the medical graduates, the society and the profession is met and hence enhance their satisfaction level.¹ Two major international standards for quality assurance in education are the World Federation for Medical Education (WFME) for medical programs, and the ASEAN University Network-Quality Assurance (AUN-QA) for general higher education programs. Assessment of student is one of the most crucial parts of medical education. The outcomes of assessment have a profound effect on medical students' future professions. It is essential that assessment methods must be aligned with teaching and learning approaches to ensure that expected learning outcomes would be achieved (Figure 1).² This constructive alignment forms the basis for outcome-based curriculum.³ This review aims to compare the WFME standards and the AUN-QA criteria on teaching and learning approaches and assessment methods in order to encourage integration of these 2 QA systems for undergraduate medical education.

Overview of Criteria

Over the past 2 decades, the WFME has worked, in cooperation with the World Health Organization (WHO), to develop a set of guidelines that are largely standardized, inclusive, and that medical schools can adapt/adopt to meet their needs.⁴ The WFME published the latest version of "Basic Medical Education: WFME Global Standards for Quality Improvement" in 2015. Standards are intended to guide the development and evaluation of medical education programs, facilitate the diagnosis of strengths and weaknesses related to the medical education program, and stimulate the improvement of quality. However, not all standards can apply in any setting, and a medical school may well obtain a satisfactory overall evaluation without necessarily meeting all standards and sub-standards. Standards are aimed not only at setting minimum global requirements but also at encouraging quality development beyond the specified levels.

Figure 1. Model of Constructive Alignment



On the other hand, the ASEAN University Network (AUN) is a network of universities in ASEAN countries, established to promote collaboration in higher education within the ASEAN region. AUN-QA are the quality assurance assessment criteria established in 1995.⁵ The current Guide to AUN-QA Assessment at Programme Level is version 3.0 published in 2015.⁶ The assessment emphasizes on quality of educational activities with regard to the following dimensions: quality of input, quality of process, and quality of output. Thus, the primary focus of AUN-QA assessment at the program level is for the purpose of improving the effectiveness of the quality assurance system, and system and process-oriented. Student achievement of outcomes related to what students "know and can do" is not a priority. The AUN-QA model for program level is shown in Figure 2.

The WFME set of standards is defined by 9 areas with a total of 35 sub-areas, being mindful of the complex interaction and interconnections between them.⁴ The standards consists of "basic standard" as expressed by a "must" and "standard for quality development" as expressed by a "should". For the AUN-QA for program level, it encompasses the 11 criteria.⁶ Each AUN-QA criterion has its requirements, which are translated into sub-criterion as a checklist. Diagnostic questions and suggested sources of evidence are provided to help practitioners to discover their QA practices. Table 1 shows the comparison of the WFME areas and AUN-QA criteria.

Figure 2. AUN-QA Model for Programme Level (3rd Version)⁶

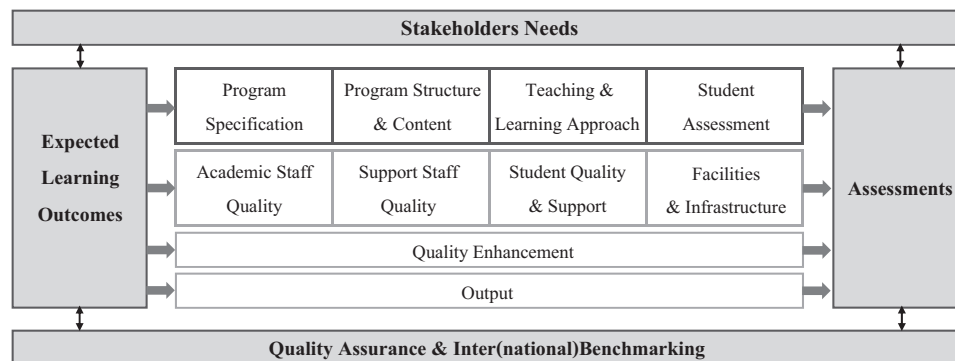


Table 1. Comparison of the WFME Areas and AUN-QA Criteria

WFME Area		AUN-QA Criterion	
1	Mission and outcomes	1	Expected learning outcomes
2	Educational program	2	Program specification
		3	Program structure and content
		4	Teaching and learning approach
3	Assessment of students	5	Student assessment
5	Academic staff/faculty	6	Academic staff quality
8	Governance and administration	7	Support staff quality
4	Students	8	Student quality and support
6	Educational resources	9	Facilities and infrastructure
7	Program evaluation	10	Quality enhancement
9	Continuous renewal	11	Output

Comparison of Teaching and Learning Approaches and Student Assessment

Although neither the WFME nor the AUN-QA do directly spell out the term ‘outcome-based education’ in their principles or criteria, both require that assessment of student learning focuses on the educational outcomes of the program (so-called ‘program expected learning outcomes, program ELOs or PLOs). In addition, both WFME and AUN-QA require that teaching and learning approaches and assessment methods be aligned to the program ELOs. This “constructive alignment” is clearly explicit in the criteria 5 of the AUN-QA. Table 2 shows the comparison between the areas 2 and 3 of the WFME and the criteria 4 and 5 of the AUN-QA. The area 3 of the WFME details

assessment methods and relation between assessment and learning. For the AUN-QA, the criterion 4 involves teaching and learning approaches, which are mentioned in the area 2 (educational program) of the WFME, and the criterion 5 involves student assessment.

According to learning, the WFME briefly states in the basic standards of the area 3 as “*promote student learning*”, and explains in the annotations regarding the meaning of “*Encouragement of integrated learning*” that it includes consideration of using integrated assessment, while ensuring reasonable tests of knowledge of individual disciplines or subject areas.

Although learning methods are not included in the area 3, the WFME emphasize them in the area 2, Educational Programme.⁴ In its annotation, the WFME



describes instructional/learning methods as “to encompass lectures, small-group teaching, problem-based or case-based learning, peer assisted learning, practicals, laboratory exercises, bed-side teaching, clinical demonstrations, clinical skills laboratory training, field exercises in the community and web-based instruction.”

While the WFME requires encompassing of several methods of teaching and learning in the curriculum, the AUN-QA emphasizes on “*quality learning*”, as shown in the requirements 2, 3, and 4 of the criterion 4. Quality learning leads to the acquisition of the following student competencies.⁶

- The ability to discover knowledge for oneself.
- The ability to retain knowledge long term.
- The ability to perceive relations between old knowledge and new.
- The ability to create new knowledge.
- The ability to apply one’s knowledge to solve problems.
- The ability to communicate one’s knowledge to others.
- An eagerness to know more.

In the context of medical education, high-quality learning can be defined by current concepts of a deep approach to learning and studying, in combination with metacognitive skills such as self-assessment and reflection on learning.⁷ Modern undergraduate education is aimed at providing an environment that promotes high-quality learning but this is not as easy to achieve. The AUN-QA suggests conditions necessary for quality learning, as follows:

- Quality learning occurs when learners are ready (ie, in cognitive and emotional terms), to meet the demands of the learning task.
- Quality learning occurs when learners have a reason for learning.
- Quality learning occurs when learners explicitly relate previous knowledge to new.
- Quality learning occurs when learners are active in the learning process.
- Quality learning occurs when the learning environment offers adequate support for learners.

Some of the above conditions have been supported by a previous study showing that self-directed, problem-based and vocationally relevant activities appeared to promote

high-quality learning of medical students.⁷ Understanding and integrating of these environments for creating quality learning in medical education might help promote development of student competencies, as mentioned above.

The AUN-QA believes that quality learning fosters “*quality learners*”, and describes quality learners as:

- Quality learners have the ability to analyze and synthesize the material they gather.
- Quality learners understand various learning strategies and can choose the most appropriate for the task at hand.
- Quality learners emphasize construction of meanings rather than memorizing facts for greater retention.
- Quality learners are always trying to bring information from various resources together.
- Quality learners discover what others have learnt and documented, perceiving the relations between that knowledge and their own experiences and previous learning to develop new insights.
- Quality learners form and substantiate independent thought and action in a coherent and articulated fashion.
- Quality learners are lifelong learners.

Quality learners are also defined as ones who are intrinsically motivated to learn and grow, with or without external rewards, and they exhibit learning behaviors that lead to success, and use the opportunities in their learning environments to meet their learning objectives.⁸ These characteristics of quality learners as well as that defined in the AUN-QA imply that quality learners are “*lifelong learners*”.

Life-long learning is emphasized in both the WFME and AUN-QA. In the WFME, life-long learning is clearly stated in the basic standards of the area 1, Mission and Outcomes,⁴ and described as “the professional responsibility to keep up to date in knowledge and skills through appraisal, audit, reflection or recognized continuing professional development (CPD)/continuing medical education (CME) activities.” In the AUN-QA, life-long learning includes commitment to critical inquiry, information-processing skills, a willingness to experiment with new ideas and practices, etc.⁶ There is no single method of teaching and learning, which is valid for all situations;



however, a recent study showed that problem-based learning, flipped classroom, guided reading, projects and experiential learning activities are perceived to be effective for promoting lifelong learning.⁹ Thus, consideration must be given to the teaching and learning approach behind the medical curriculum.

Assessment of student is one of the most important elements of medical education. The outcomes of such assessment have a profound effect on medical students' future careers as medical doctors. The area 3 of the WFME and the criterion 5 of the AUN-QA cover similar scopes of student assessment.

Table 2. Comparison Between the WFME Standards and the AUN-QA Criteria on Teaching and Learning Approaches and Student Assessment

WFME		AUN-QA	
3) Assessment of Students: 3.1) Assessment Methods	3) Assessment of Students: 3.2) Relation Between Assessment and Learning	Criterion 4: Teaching and Learning Approaches	Criterion 5: Student Assessment
<p><u>Basic standards:</u> The medical school must</p> <ul style="list-style-type: none"> - define, state and publish the principles, methods and practices used for assessment of its students, including the criteria for setting pass marks, grade boundaries and number of allowed retakes. - ensure that assessments cover knowledge, skills and attitudes. - use a wide range of assessment methods and formats according to their "assessment utility". - ensure that methods and results of assessments avoid conflicts of interest. - ensure that assessments are open to scrutiny by external expertise. - use a system of appeal of assessment results. 	<p><u>Basic standards:</u> The medical school must</p> <ul style="list-style-type: none"> - use assessment principles, methods and practices that <ul style="list-style-type: none"> • are clearly compatible with intended educational outcomes and instructional methods. • ensure that the intended educational outcomes are met by the students. • promote student learning. • provide an appropriate balance of formative and summative assessment to guide both learning and decisions about academic progress. 	<ol style="list-style-type: none"> 1) The teaching and learning approach is often dictated by the educational philosophy of the university. 2) Quality learning is understood as involving the active construction of meaning by the student. 3) Quality learning is also largely dependent on the approach that the learner takes when learning. 	<ol style="list-style-type: none"> 1) Assessment covers: <ul style="list-style-type: none"> - New student admission - Continuous assessment during the course of study - Final/exit test before graduation 2) In fostering constructive alignment, a variety of assessment methods should be adopted and be congruent with the expected learning outcomes. 3) A range of assessment methods is used in a planned manner to serve diagnostic, formative, and summative purposes. 4) The student assessments including timelines, methods, regulations, weight distribution, and rubrics. 5) Standards applied in assessment schemes are explicit and consistent.



Table 2. Comparison Between the WFME Standards and the AUN-QA Criteria on Teaching and Learning Approaches and Student Assessment (Continued)

WFME		AUN-QA	
3) Assessment of Students: 3.1) Assessment Methods	3) Assessment of Students: 3.2) Relation Between Assessment and Learning	Criterion 4: Teaching and Learning Approaches	Criterion 5: Student Assessment
			6) Procedures and methods are applied to ensure that student assessment is valid, reliable and fairly administered.
			7) The reliability and validity of assessment methods should be documented and regularly evaluated and new assessment methods are developed and tested.
			8) Students have ready access to reasonable appeal procedures
<u>Quality development standards:</u> The medical school should	<u>Quality development standards:</u> The medical school should		
- evaluate and document the reliability and validity of assessment methods.	- adjust the number and nature of examinations of curricular elements to encourage both acquisition of the knowledge base and integrated learning.		
- incorporate new assessment methods where appropriate.	- ensure timely, specific, constructive and fair feedback to students on basis of assessment results.		
- encourage the use of external examiners.			

Assessment of Student Research

At present, medical research is commonly included in several undergraduate medical curricula in Thailand. The WFME is clearly stated in the area 1, Mission and Outcomes, that the medical school should ensure that

the mission encompasses medical research attainment, and defines medical research as “scientific research in basic biomedical, clinical, behavioral and social sciences.”⁴ The WFME also states that the medical school should specify intended outcomes of student engagement in medical research. In the area 2, Educational Program,



the WFME emphasizes that the medical school must teach the principles of scientific method, including analytical and critical thinking; medical research methods; and evidence based medicine. Besides, the WFME recommends that this teaching would be a compulsory part of the curriculum. Medical research is highlighted in the area 6.4, Medical Research and Scholarships, of the WFME. Although medical research is mentioned throughout the WFME standards, assessment of student research is not yet clearly explicit.

In the AUN-QA, the criterion 5 mentioned assessment of student research by stating, “A special form of student assessment is the final project (dissertation, thesis or project). This requires students to demonstrate their knowledge and skills and their ability to manipulate the knowledge in a new situation”.⁶ Furthermore, the AUN-QA encourage the educational program to: formulate criteria to assess the final project; have details of the preparation for

producing the final project involve (in terms of content, methods, and skills); identify any bottlenecks that exist for producing final project; and indicate how students are being coached.

Applying any of the AUN-QA practices or other mechanisms to assess student medical research will enhance scientific training and ensure student achievement.

Conclusions

Quality assurance in medical education is essential to ensure that stakeholder needs are met, and that expected learning outcomes are achieved. The author provided comparative details on teaching, learning and assessment for the integration of the WFME and the AUN-QA to develop quality-assurance framework at the undergraduate level of medical education.

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บูรณาการของมาตรฐาน WFME และเกณฑ์ AUN-QA สำหรับการประเมินนักศึกษา ในการศึกษาแพทย์ระดับปริญญาตรี

เพิ่มพันธุ์ ชรรมสโรช

สถาบันการแพทย์จักรีนฤเบดินทร์ คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล สมุทรปราการ ประเทศไทย

การประกันคุณภาพเป็นกิจกรรมที่ครอบคลุมทั้งการจัดการคุณภาพและการควบคุมคุณภาพ และต้องการนโยบาย มาตรฐาน ระบบและกระบวนการทั้งหมด เพื่อคงไว้ซึ่งคุณภาพและปรับปรุงคุณภาพการศึกษาทางการแพทย์ การประกันคุณภาพสามารถจัดการผ่านการติดตามตรวจสอบผ่านทางสถาบัน ซึ่งควรรวมถึงการวัดผลสัมฤทธิ์ของวิธีการสอนและการเรียนรู้และการประเมินผล สำหรับการประกันคุณภาพภายนอก มีมาตรฐานการรับรองโดยหน่วยงานระหว่างประเทศ เช่น สหพันธ์แพทยศาสตรศึกษาโลก (World Federation for Medical Education, WFME) ที่ต้องปฏิบัติตาม นอกจากนี้ยังมีการประกันคุณภาพเครือข่ายมหาวิทยาลัยอาเซียน (ASEAN University Network-Quality Assurance, AUN-QA) ซึ่งเป็นเกณฑ์การประเมินเพื่อส่งเสริมการประกันคุณภาพในระดับอุดมศึกษาของประเทศในอาเซียน ทั้ง WFME และ AUN-QA เน้นให้แนวทางการสอนและการเรียนรู้และวิธีการประเมินสอดคล้องกับผลลัพธ์การเรียนรู้ของหลักสูตร บทความนี้มีวัตถุประสงค์เพื่อเปรียบเทียบมาตรฐาน WFME และเกณฑ์ AUN-QA ที่เกี่ยวกับวิธีการสอนและการเรียนรู้และวิธีการประเมิน เพื่อส่งเสริมการบูรณาการระบบประกันคุณภาพทั้งสองสำหรับแพทยศาสตรศึกษาระดับปริญญาตรี

คำสำคัญ: สหพันธ์แพทยศาสตรศึกษาโลก เครือข่ายมหาวิทยาลัยอาเซียน การประกันคุณภาพ การประเมินผล แพทยศาสตรศึกษา การเรียนรู้ที่มีคุณภาพ

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