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Educational Reform: A Journey Towards Accreditation

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Abstract

The paper aims to identify the current situation, in terms of curriculum structure and assessment methods, to prepare the College of Applied Medical Sciences at Taibah University to meet the requirements of the educational framework implemented by the National Commission for Accreditation and Assessment (NCAAA). It proposes the required steps for the college to achieve the accreditation based on a descriptive analysis of its current educational contents and assessment criteria. The study aims to serve as a guide for similar educational institutions in the region and a reflection on common practices that might hinder the accreditation process. The paper was based on an exploratory approach to evaluate the readiness of the College of Applied Medical Sciences at Taibah University for the educational framework implemented by the National Commission for Accreditation and Assessment. It provides a practical overview of the structural preparation of the curriculum and the administrational steps needed to accompany such change and then it discusses the reasons on why the reforms was needed and how the educational practices in a college should proceed to satisfy the qualification framework used in NCAAA accreditation in Saudi Arabia.

Keywords: Accreditation; Assessment; Educational reform

Introduction

Taibah University is one of the newest Universities in Saudi Arabia with an establishment age of only 10 years. Historically, the university was comprised of the Imam Muhammad Bin Saud College for Islamic Studies and a branch of King Abdulaziz University "in Jeddah" with a single functional faculty; the Faculty of Education. In 2003, a royal decree was issued to integrate the two campuses into one independent university sited in Madinah which is to be named "Taibah" University [1]. The university today has more than 19,000 students in more than 21 major disciplines.

The College of Applied Medical Sciences is one of the newer colleges, established in 2008, and is comprised of three departments: clinical laboratory sciences, clinical nutrition and diagnostic radiology. Each department offers a bachelor degree that composed of 136 hours divided between eight semesters. The scientific contents that were first used in the three departments were a mix of adopted curricula and in-house developed ones. The exact strategy used in the establishment and implementation of educational contents and intended learning outcomes were quite vague. It is widely acceptable, in the context of newly established schools, that the first patch of academic staff appointed in the beginning of the unit's new foundation are the ones responsible for its curricular development. This is not necessarily an unhealthy option, but to ignore the positive influence and collaboration of many other medical schools which were previously established in the regions was not a wise choice.

In 2009, the university started revamping its administrational practices and adopting new strategies to pave the way for national accreditation aimed at both government and private universities in Saudi Arabia [2]. In 2011, the government established a "National Qualifications Framework" for higher education. This framework was first introduced in Saudi universities as a voluntary program through the Commission of Educational development; a subsidiary body under the governance of the Ministry of Higher Education [3]. Many educational policy-makers were skeptical at first; the initiation of a new accreditation program after years of uncontrolled and unmonitored practice will surely have many drawbacks [4]. At the time of this policy implementation, the government had invested billions of dollars in the higher education sector. This was evident by the numbers of educational scholarships granted to Saudi students to pursue their postgraduate studies overseas. Moreover, the number of new educational institutions, both approved and established, in the same time frame was substantial.

Regardless of all the necessary steps required to approve a single modification to an educational unit, or the administrational difficulties associated with the introduction of new assessment method; the College of Applied Medical Sciences have maintained a positive attitude towards the importance of employing the framework, and how the current and future students would benefit from following these quality standards. This case study focuses in the journey endeavored by the college to prepare its educational programs for accreditation, and the administrational processes that were followed to overcome the common barriers faced by other institutions in the region.

Curricular Reform

The current curriculum used in the department of clinical laboratory sciences in 2011 was the same one that was assigned and approved by the college's council seven years earlier. Although the job description of "Medical Technologists" or "Biomedical Scientists" did not change dramatically over the past five years, the required knowledge-based and skill-based competency of medical scientists are increasingly being revised and altered to accommodate both technological and medical advancements. Needless to say, medical science is arguably one of the fastest changing disciplines today; where medical scientists transform myths into facts and others revolutionize facts into old stories. The static curriculum that was used in the clinical laboratory sciences department was composed of 40 scientific/medical/clinical units and other university compulsory units. Tables 1 and 2

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Level 1	Level 3	Level 5	Level 7
General Chemistry Medical Psychology Physiology 1 Anatomy General Physics General Mathematics	Biochemistry Pathology Enviro. Management Medical Laboratory Skills Histology	Medical Bacteriology OH&S Hematology 2 Clinical Biochemistry Medical Instruments	Medical Immunology First Aid Basics of Pharmacology Body Fluids Intro. to Biotechnology
Level 2	**Level 4**	**Level 6**	**Level 8**
Organic Chemistry Analytical Chemistry Physiology 2 Microbiology (General) hygiene & Sterilization	Supplem. Biochemistry Hematology 1 Medical Virology Medical Parasitology	Medical Genetics Molecular Biology Medical Mycology Statistics Blood Bank Health Care System	Quality Control Forensics & Toxicology Lab. Administration Functions of the Organs

The static curriculum for students in the department of clinical laboratory sciences at the college of applied medical sciences which was used from 2008 until 2013.

Table 1: The "old" clinical laboratory department curriculum.

Level 1	Level 3	Level 5	Level 7
Patient Safety & Medical Ethics Introduction to Biochemistry Histology & Cytology Human Anatomy Human Physiology Elective - Free (1)	Medical Genetics Medical Biochemistry (2) Medical Mycology Medical Bacteriology Hematology (2) Elective - Free (2)	Basics of Pharmacology Clinical Biochemistry (2) Medical Immunology Research Methodology Clinical Practice (2) Clinical Practice (3)	Compulsory hospital-based Internship
Level 2	**Level 4**	**Level 6**	**Level 8**
Histological Techniques Medical Biochemistry (1) Human Pathology Hematology (1) Medical Microbiology Elective - Special (1)	Clinical Biochemistry (1) Medical parasitology Medical Virology Molecular Biology Clinical Practice (1) Elective - Special (2)	Forensics & Toxicology Clinical Practice (4) Quality Assurance Body Fluids Analysis Blood Bank Graduation Project Elective - University (2)	Compulsory hospital-based Internship

The reformed curriculum for students in the department of clinical laboratory sciences at the college of applied medical sciences which was used starting from 2014.

Table 2: The "new" clinical laboratory department curriculum.

shows only the scientific units arranged by the level of study where each level represents one academic semester. The students did not have any optional modules to choose from, and no electives that they could study based on their personal interests. Failing a unit means repeating the whole level (semester) in order to proceed to the next academic level (Figures 1-4).

It was clearly evident that basic units taught in the first four levels were purely theoretical unless carefully integrated with other scientific modules. The danger of assigning too many basic science units, without explaining the clinical relevance of each topic or module, is quite dramatic on naïve medical students [5]. This can lead to a complete logic separation where information obtained during these courses are considered as "for exam only" and is needed to serve that single purpose [6]. It also adds to their confusion where absorbing too many pure scientific information encourages them to activate their "memory mode" without deeply understanding the clinical value or impact of such information to their area of application [7].

Clinical Relevance

An evident problem in the current curriculum was the overload of basic science units without establishing a clear medical/clinical context behind each one. Moreover, educational objectives for the whole departments were quite clear and understood, but that was not the case for many of the individual units taught in the department. More than 60% of the compulsory science units did not contain any published outlines or educational objectives. The students need to understand what the medical/clinical value of each unit is before studying it and they also need to know the educational goals. This not only helps the students maintain a coherent logic throughout their educational journey, but also facilitates the educational process where both the teacher and the students share a clear development pathway and common goals to be achieved [8].

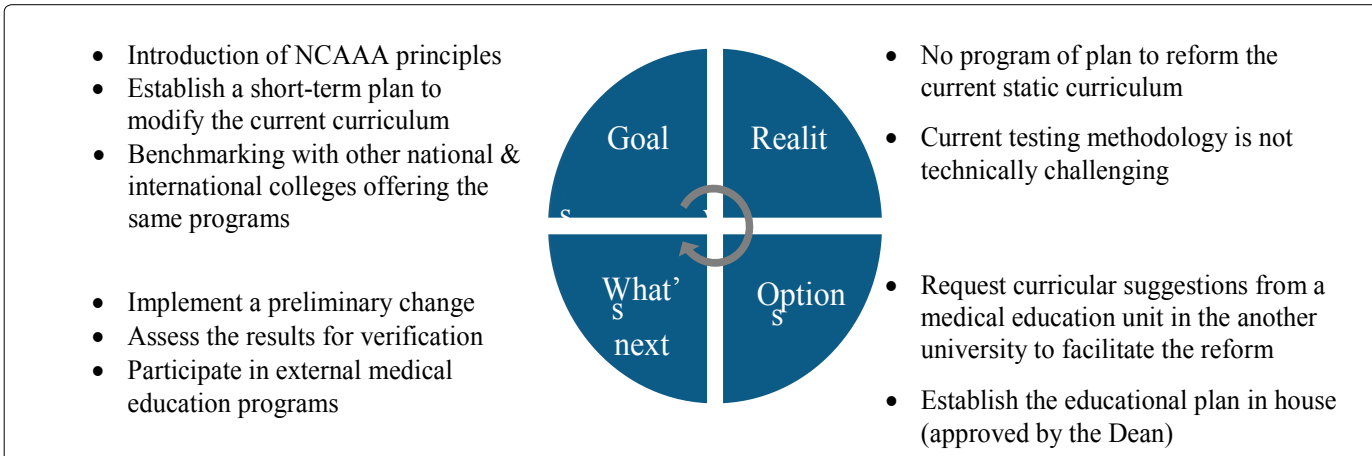
One example would be studying the nature of sound frequency, wavelengths, thermodynamics, potential and kinetic energy and a long list of other topics in basic physics where the logic and the relevance of why a medical student would learn these kind of topics is missing in the first place. Emphasizing the importance of these scientific concepts from an analytical point of view (for medical laboratory technologists) would encourage them and gain their interest in learning and understanding the theory behind the practice and help them appreciate the required skills to perform the necessary diagnostic tests in the future.

Scientific Integration

Scientific integration is the concept of merging scientific topics from different disciplines into one collective module [9] where the students learn about different aspects of a clinical condition from different scientific point of views without the restrictions of individual domains or specializations. An example was the introduction of the genomics and proteomics concept, where analytical and organic chemistry can be incorporated with basic biochemistry to yield a meaningful scientific unit with appropriate and applicable skills. This would help the laboratory students to understand the basic pathological mechanisms of infectious as well as non-infectious diseases and how samples (from the human body) can be analyzed to reach a differential diagnosis that helps the establishment of a better health management plan.

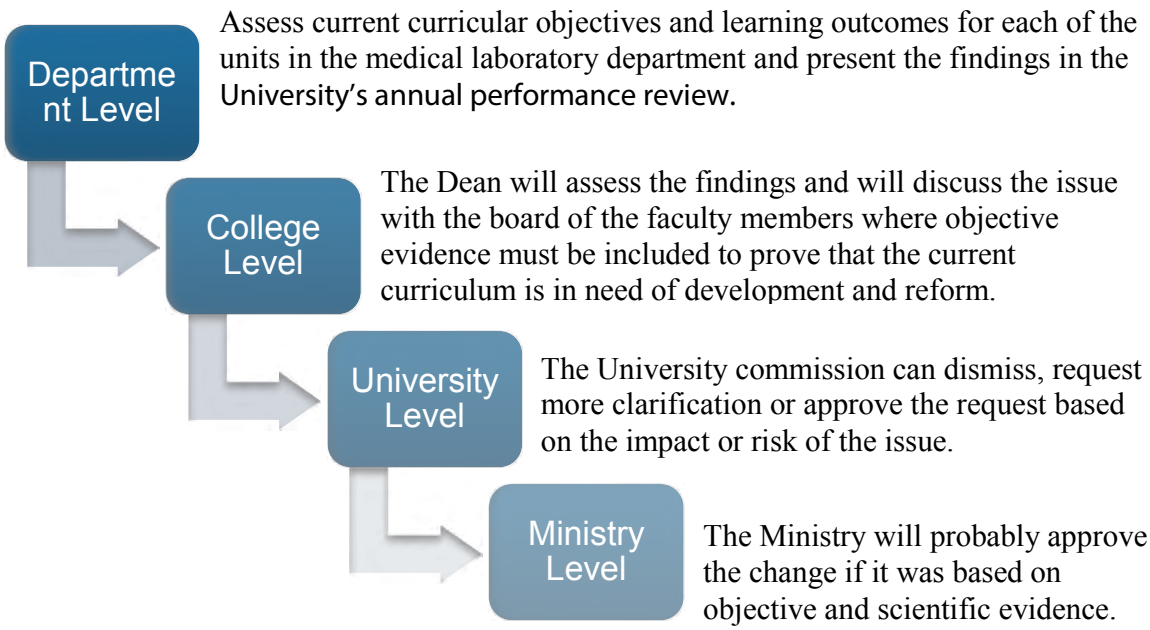
Logical Sequence

Logical sequences in the curriculum help the students gain



Curricular reform is a lengthy long-term objective that should be adopted at the department or school level. This diagram shows practical steps that may be followed in the future to introduce the concept of scientific integration to the educational program in health colleges.

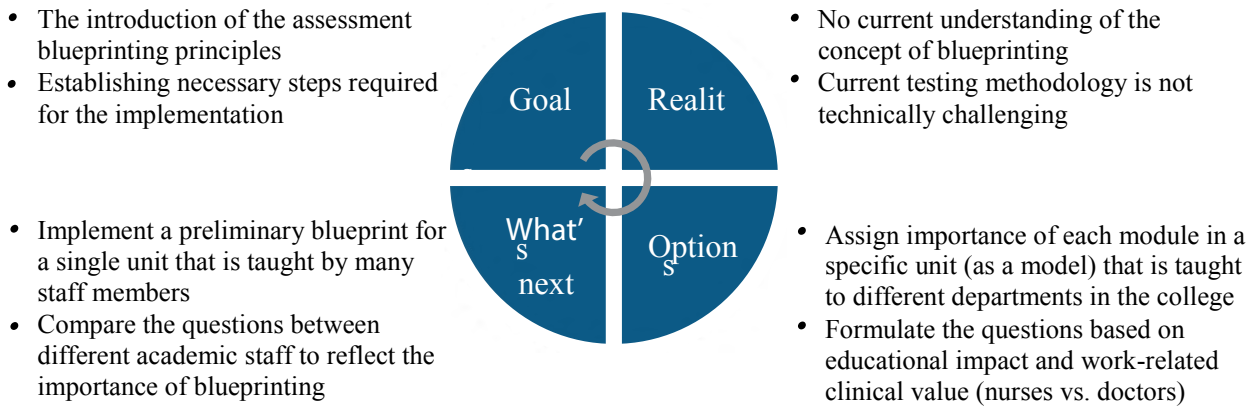
Figure 1: Practical approach to curricular reform.



Curricular reform has a specific process in which many administrative steps are required. This flow chart helps identify the most important steps required to initiate and continue the process in Taibah University.

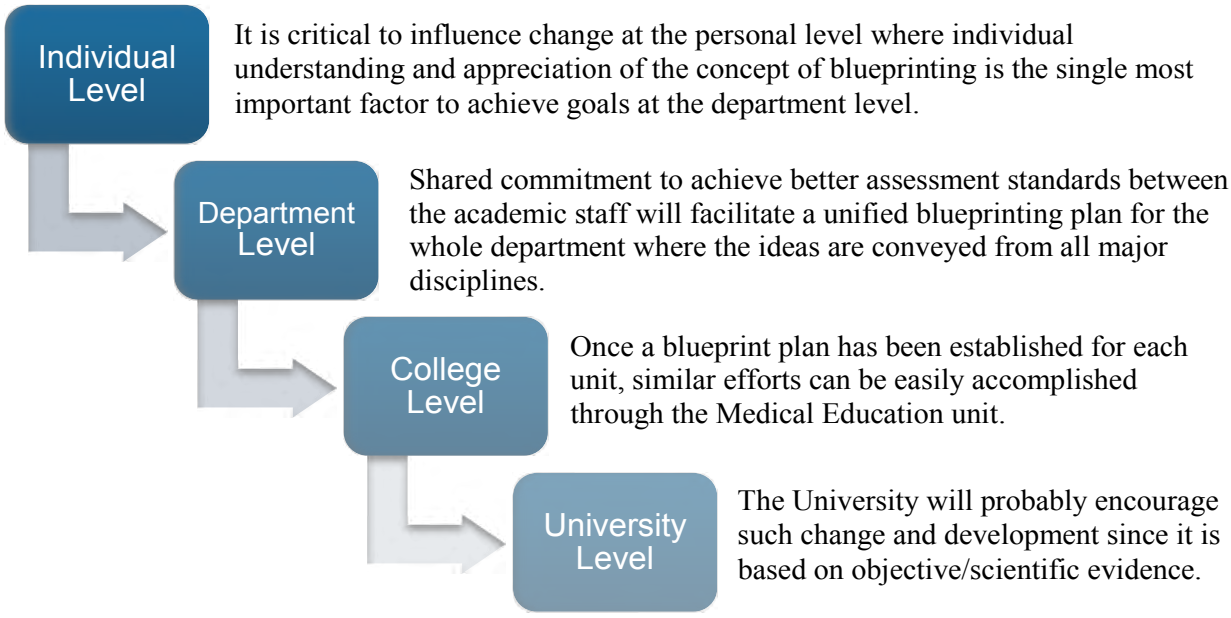
Figure 2: Administrative approach to curricular reform.

basic scientific understanding of specific topics in the early years of medical school that facilitates their comprehension of later units that are considered relying on these basic units. A common practice in educational institutions is classifying some units to be "pre-requisite" for other units. This strategy highlights the importance of logical and conceptual understanding of the learning objectives of a particular unit in order to start learning the next one in the curricular hierarchy [10]. By examining the current curriculum of laboratory students, some discrepancies in the concept of logical sequence were highlighted. Importantly, some basic scientific units were prescribed to students in the higher levels of the educational program where they should have been taught to students in the early levels; since students



Blue printing is a mid- to long-term objective that should be adopted at the department or school level. But without the appreciation and commitment of other faculty staff, implementation of the concept is rather cumbersome. This diagram shows practical steps that may be followed in the future to introduce the concept of examination blue printing to the educational programs in health colleges.

Figure 3: Practical approach to increase the efficiency of examination by introducing "Blue Printing".



Adopting new policies regarding examination and assessment is chronic dispute for many departments and colleges. It should be emphasized that mutual understanding and concept-awareness must be reached before initiating this process. This flow chart helps identify the most important steps required to initiate and continue the process in Taibah University.

Figure 4: Administrative approach to introduce the concept of examination "Blue Printing".

needed to grasp the scientific and clinical values of these units before advancing to other more advancing scientific units. A good example of this concept was the introduction of a molecular biology unit in the curriculum after the need for such courses became quite evident in the last couple of years, especially in a region where basic medical research is not a top priority on a work force-focused academic agenda. The molecular biology unit was placed in the 6th level of the educational program. This caused the unit to be purely theoretical and out of context since the student had already established a strong knowledge-based understanding of different areas in microbiology and biochemistry. The correct position of the unit, in my perception, was right on the bottom of the curriculum where the early comprehension for molecular basis of genetics encourage the student to relate to much of the pathophysiology encountered in later levels.

Assessment Criteria

The department of Medical Laboratory Sciences routinely holds official staff meetings to discuss the progress of the academic program, common issues facing students and the improvements opportunities regarding the curriculum and the delivery methods. Our discussions were mostly about the educational environment and if the expectations of both the students and staff have been met and what was required to meet those requirements. It came as no surprise to me that no evidence of examination blueprinting has been obtained from the faculty members in the department. This represented an unfortunate situation for the current laboratory students as well as to the department and the whole University. Failing to reproduce a robust and a reliable examination blueprint for each of the units is something that needs to be changed. The validity of the current testing system for laboratory students cannot be trusted for constructing competent and qualified medical laboratory personnel that can handle diagnostic responsibilities in the near future.

The educational plan for the department was established based on a similar program form King Abdulaziz University in Jeddah six years ago. Although the same rules apply for the two departments in terms of the desired learning outcomes and the working requirements for graduates from both colleges, the necessity to suite the need for the community as well as the rapidly changing role of medical scientists require us to adopt, and therefore reflect this adoption by comprehensive reform to our curriculum. The change in curriculum therefore requires certain adjustment to the assessment criteria for it to be able to assess the knowledge, skills and attributes of students.

The assessment criteria used in the college was usually targeted to the knowledge-based competency with minimal awareness of skills and no attention to personal attributes or personal skills. Many of the academic and clinical staff used multiple-choice questions (MCQs) as their preferred examination method, they also used the same MCQs every year with minimal changes or modifications. Because the college had already started the process of curricular reform, an equal reform was directed towards how the assessment "should asses" the required contents of each unit and the practical way to achieve it. The format of any particular exam may have a great impact on how certain questions can test more than one competency level or dimension and how a medical teacher can use that to test more than superficial knowledge [11]. "Awareness" is the key.

Future Directions

The need for educational reform should be inspired by every faculty staff member not merely to satisfy institutional requirement. Many teaching methods, testing processes and instruction approaches have been unchanged for decades. We do not need a complete and a sudden change of the system. What is required is a holistic understanding of the current situation and a steady movement towards development which can be easily achieved by increasing the level of awareness, among university teachers, about the new development of educational and assessment methodologies. It is also important to demonstrate how following these methodologies would benefit not only the students, but the teachers, department, faculty and the University, as a whole, in the long term.

Introducing a medical education unit in the college should be emphasized to establish a reliable support system for the educational and assessment processes in the departments. Faculty staff members should also be encouraged to maintain current knowledge with the development of educational and assessment methodologies through the interaction with the medical education unit. Moreover, assessments carried out by different teachers should be assessed to meet specific and minimal standards that satisfy both the coordinators as well the as teachers of each unit. This will assist in maintaining a certain level of professionalism and objectivity to the assessment process for each unit. Also, the course outline, containing the educational objectives, for each of the units should be established as soon as possible. This will also assist in keeping the students up to date with what requirements are needed from them and what goals should be aimed at and achieved by the end of each semester.

It is a new challenge, at least for me, to start a teaching position in a new university where hundreds relay on your professional expertise to generate qualified and competent medical scientists. This concern must be shared by the other faculty members for the reform process to begin and endure. This stance must be also adopted by the top administration, where verified and tested ideas of medical education can be understood, adopted and implemented by all university staff members.

References

1. University Administration (2008) The Establishment of Taibah University. Saudi Arabia.
2. Saudi Press Agency (2009) The Prince of Madinah to witness the progress of Taibah University establishment phases. Saudi Press Agency Online.
3. Saudi Press Agency (2012) The Council of Ministers approves the establishment of "The Commission of Educational Development". Al Riyadh.
4. Onsman A (2010) Dismantling the perceived barriers to the implementation of national higher education accreditation guidelines in the Kingdom of Saudi Arabia. Journal of Higher Education Policy and Management 32: 511-519.
5. Gordon J, Hazlett C, Ten Cate O, Mann K, Kilminster S, et al. (2000) Strategic planning in medical education: enhancing the learning environment for students in clinical settings. Medical Education 34: 841-850.
6. Anderson J, Graham A (1980) A problem in medical education: is there an information overload? Medical Education 14: 4-7.
7. Bordage G (1987) The curriculum: overloaded and too general? Medical Education 21: 183-188.
8. Cronbach L (2002) Course improvement through evaluation. Evaluation Models 6: 235-247.
9. Mennin S (2009) Self-organization, integration and curriculum in the complex world of medical education. Medical Education 44: 20-30.
10. Carey S (2000) Science education as conceptual change. Journal of Applied Developmental Psychology 21: 13-19.
11. Palmer EJ, Devitt PG (2007) Assessment of higher order cognitive skills in undergraduate education: modified essay or multiple-choice questions? Research paper. BMC medical education 7: 1.