Qualifier Question Essay

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This essay features the exploration of this qualifying question provided by my mentor Daniel:

You list patients, students, and medical professionals as potential users of your system. How might the expectations of these users vary when they use the app? Be specific. What techniques have been leveraged effectively in other systems to make sure users of different levels get what they need from a system?

The project currently is scoped to focus on patient education, but it did at one time entertain the notion of providing educational materials on the level of medical students and practicing medical professionals in addition to patients.

The expectations of these users vary widely between patients, medical students, and practicing physicians.

Patients will generally be focused on developing an understanding of the condition that they've been diagnosed rather than comprehensive knowledge about an affected organ system. The patient will expect the information to be provided in a way that is understandable to the patient and compatible with the patient's educational reading level. Patients will also expect to be able to get an understanding of what the condition is, what the symptoms are, what the treatment is, and disease progression and will not necessarily want a detailed description of the metabolic pathways for a particular organ for example.

Medical students will be focused on developing comprehensive understanding of the human body and its organ systems. Medical students will also be expecting to learn enough about the organs to be able to pass their exams and other assessments. This information includes detailed information about the anatomy and physiology of the human body. They will also expect to be able to learn about the various conditions that the body can undergo in terms of diseases and trauma and methods of approaching those conditions in order to try resolve or mitigate them. Since they are becoming physicians, they would also benefit from clinical considerations in approaching patients with information about their health as well as interacting with other staff members. The learning that the medical student would do with this app would be in the context of a structured program at a medical school with a comprehensive curriculum.

Practicing physicians will be focused on continuing education and learning about the latest developments in their area of expertise. Licensed physicians are required to complete a significant number of continuing education courses on a regular basis. A CME course will focus on a particular subject area inline with the expectation of the physician. These courses are standalone and not necessarily part of a comprehensive curriculum. These courses generally have tie-ins with learning management systems (LMS) such as the one that is available from the AMA (AMA, 2018). The physician expects the course to comply with the state and federal rules.

The most effective technique for ensuring that user medical education applications have the information appropriate for the 3 different user audiences is standards that are supported by research.

For patients, the US Department of Health & Human Services has an agency named Agency for Healthcare Research and Quality that created a standard for assessing patient medical education materials called PEMAT - Patient Education Materials Assessment Tool (AHRQ, 2018). This tool is used to evaluate the understandability and actionability of educational materials for patients. The tool provides evaluations for items such as word choice, appropriate use of active voice, organization into short easy to understand sections, effective use of visual aids, layout, and reference, and actionability in terms of identifying an action the user can take, breaking down and explaining the action, and additional aids to facilitate understanding of the actions being presented (AHRQ, 2018).

For medical school students, the Association of American Medical Colleges (AAMC) created an initiative in 1996 called the Medical School Objectives Project (MSOP) to address concerns that new doctors not being adequately prepared to meet society's expectations so they created a list of educational objectives for medical schools to use as a standard for education their students (AAMC, 1998). One of these objectives is that the physician must be knowledgeable. As a result, the medical student will expect to have study materials that follow the guidelines below for a knowledgeable physician.

"Physicians must understand the scientific basis of medicine and be able to apply that understanding to the practice of medicine. They must have sufficient knowledge of the structure and function of the body (as an intact organism) and its major organ systems and of the molecular, cellular, and biochemical mechanisms that maintain the body's homeostasis in order to comprehend disease and to incorporate wisely modern diagnostic and therapeutic modalities in their practice. They must engage in lifelong learning to remain current in their understanding of the scientific basis of medicine.

For its part the medical school must ensure that before graduation a student will have demonstrated, to the satisfaction of the faculty, the following:

Knowledge of the normal structure and function of the body (as an intact organism) and of each of its major organ systems

Knowledge of the molecular, biochemical, and cellular mechanisms that are important in maintaining the body's homeostasis

Knowledge of the various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, and traumatic) of maladies and the ways in which they operate on the body (pathogenesis)

Knowledge of the altered structure and function (pathology and pathophysiology) of the body and its major organ systems that are seen in various diseases and conditions.

An understanding of the power of the scientific method in establishing the causation of disease and efficacy of traditional and non-traditional therapies.

An understanding of the need to engage in lifelong learning to stay abreast of relevant scientific advances, especially in the disciplines of genetics and molecular biology." (AAMC, 1998)

For physicians, there are several organizations available that provide accredited continuing medical education (CME) based on standards. One that has widespread adoption across the US is the Accreditation Council for Continuing Medical Education (ACCME, 2017). This organization provides practice-based learning for physicians and a path to accreditation to CME providers. A summary of their standards are presented at http://www.accme.org/requirements/accreditation-requirements-cme-providers/accreditation-criteria (ACCME, 2017). Having an organization that evaluates a CME course ensures that a certain set of standards are met and following those standards should ensure that the application or CME provider includes the content required in the CME and that the physician has the materials needed to satisfy the education requirement.

References

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