

Assignment 4: Exploring your problem

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Today, physicians are very busy, so as a result, if one is diagnosed with a particular condition, the doctor usually just tells the patient to schedule a follow-up visit to discuss treatment options without providing the patient with sufficient options for properly understanding their condition and what to expect. That leaves the patient to search on the internet and visit websites like WebMD (WebMD, 2018) that provide some information about particular conditions, symptoms, treatments, and sometimes pictures, but sometimes provide questionable information which may result in an ineffective means for patients to understand their condition in a way that they can be an effective partner in the treatment of their condition.

There are many issues facing the health care community regarding patient education. The community has established the need for patient education to improve the outcomes of patient conditions and treatments. Chapter 1 in the book "Patient Education in Rehabilitation" enumerates the benefits of patient education the most important of which indicates that "Specific interventions aimed at increasing the patient's knowledge can improve the treatment outcomes of many acute and chronic illnesses". (Dreeben, 2010, p. 5). Issues in the delivery of patient education include the difficulty in finding quality patient education resources, the lack of care providers providing the patient education (Ritsema, 2014) due to a variety of reasons including training, organizational imperatives, physician-oriented culture, etc. (Farahani, 2013), and patient engagement with the educational materials.

This project intends to be a resource that interoperates with health care systems that doctors can use to push a button and send a link to the project website to patients based on their condition via their patient portal. The link then provides an interactive education about the condition and the organ(s) affected by that condition. This should address some of the issues involved in the ability and willingness of care providers to provide patient education that is in theory vetted and approved by the physicians and likely to be better quality instruction. Making the tool interactive should help with patient engagement and learning.

There is a tool, Patient Education Materials Assessment Tool (PEMAT), that Agency for Healthcare Research and Quality (AHRQ) in the US Department of Health & Human Services produces that assesses the understandability and actionability of patient educational materials that should provide guidance for the development of the project. (AHRQ, 2018).

The idea behind this educational tool is to give a patient an understanding of their condition. Providing an understanding of a condition for a particular organ requires providing information that views the organ from a variety of different perspectives including the essentials such as what the organ looks like, where it is located, how it works, what diseases it is vulnerable to, what treatments may correspond to those diseases, metrics on the effectiveness of the treatments, the effects of environmental factors on those organs including drugs, diet, exercise, and other inputs.

I haven't been to find any tools that provide this level of interaction which indicates that as currently scoped, the project may be a massive undertaking if the intention is for it to be a complete reference. Fortunately, it's early in the process so we will do some research and identify which organs and capabilities to model and present information on. Additionally, we would like to build an additional component that reinforces learning through quizzing or gaming modes.

There are number of tools that provide information on anatomy or physiology or both of human systems. These tools were primarily created to provide high quality education for students in secondary education and up to medical school. A couple of tools so far also include presentations of diseases and one also includes treatments for those diseases. Most tools present static images or 3D images that can be twirled around and examined. BioDigital, VisibleBody, and Adam Education are examples of such tools. Other tools provide interesting interactive features that allow the user to modify certain conditions and see the resulting effects of those conditions on the body or certain physiological processes including SimScientists (Brenner, 2016) and BMI Visualizer (BMI, 2013).

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