Conversational Learning in Medical Education: Clinical Problem Solving Around Chronic Persistent Headache

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ABSTRACT

Traumatic Brain Injury (TBI) survivors frequently experience headaches, often labeled as a psycho-social aftermath of poor adjustment to the reality of decreased brain function, but they may be the result of actual physical sequelae of the TBI. This article illustrates an active experiential learning exercise set in a user-driven learning environment using a web interface. Using a conversational learning approach, the discussion was centered around a neurological problem on the topic of chronic persistent headache, which generates a considerable amount of diagnostic uncertainty and interventional dilemma among physicians. The physician members of an online forum shared their viewpoints and insights regarding the topic. By utilizing a blend of experiential and empirical evidence, they collaboratively reached a solution. User-driven learning can serve as a potential learning tool in continuing medical education and also as a valuable educational resource to medical students, helping them develop empathy and real-life problem solving skills. Also, when such conversations involve multiple stakeholders (patients and their relatives, physicians and other health-care providers, medical students, etc.) it can foster a collaborative interface which is the essence of user-driven healthcare.

Keywords: Chronic Headache, Conversational Learning, Experiential Learning, Interventions, Traumatic Brain Injury (TBI), User-Driven Learning, Web Forums

INTRODUCTION

User-Driven Learning

“The term ‘user’ includes health professionals as well as patients and anyone who uses the web with a user name. These “users” generate an information flow that “drives” the system’s workflow” (hence the choice of the term “driven”) (Biswas, 2008, 2010). The users learn by interactive conversation rather than only by rote and research, they bring the richness of personal experience with living patients to share with their colleagues so they
can provide peer support and reason together about best ways forward for treating patients.

When structure emerges as a consequence of the dynamic interaction between a system and its environment this is known as self-organization and produces development. This is a concept mirrored in nature. Fractals are nature’s description of self-organization. “A fractal has many pieces that are just smaller, self-similar, copies of the larger pieces” (Liebovitch, 2003). Neural network models or connectionist networks can be used to illustrate principles of self-organization as they relate to the brain by working on a system of error recognition. Keslo (1995) and Johnson (as cited in Oates, Wood, & Grayson, 2005) indicate all stages of brain development require an element of self-organization. Changeux et al. (as cited in Oates, Wood, & Grayson, 2005) and Von der Malsburg (as cited in Oates, Wood, & Grayson, 2005) implicate self-organization as a fundamental characteristic of the brain and as such interactive user-driven learning changes the collective learning repository (Price, 2006). This is well stated by Marshall McLuhan (1984) who states “We shape our tools, and thereafter our tools shape us.”

Vygotsky, the father of social constructivism, advocates language and culture as tools of learning. He posited that more knowledgeable peers could act like learning scaffolds. He suggests they initially deliver full support and then gradually withdraw this support as the student absorbs the concepts. Once the concepts are grasped the scaffolding is no longer needed. He suggests that there is a zone of proximal development where peers can engage and bring one another to new levels of knowledge. Vygotsky believed this state was the place where minds and abilities meet, filling gaps and making new realities (Vygotsky, 1978).

It is found equally matched learners learn little from each other but where there was cognitive discrepancy more material was successfully encoded and later applied. It was found individuals learn best when their schemas are challenged and that this understanding can be imparted by peer to peer or mentor to peer relationships (Price, 2006). Conversational learning makes room for these concepts and in fact they are actively engaged as neurologists from diverse areas and experience learn from one another. Effective learning involves constructing understanding, and relating new experiences to existing knowledge (Sharples 2002).

The manner in which we perceive raw information adds to the richness of this learning. For instance some think abstractly and clearly grasp theoretical precepts they have not experienced in practice whereas others are guided by intuition and the physical realities of the patient’s presentation. Additionally there are those who watch things happen in patient care and those who make things happen. Both styles are replete with their own strengths and weaknesses and the scaffolding provided by experiencing both views through conversations with respected others can lead to new perceptions in patient care, diagnostics and treatment. The Experiential learning model suggests that learning requires individuals to resolve abilities that are polar opposites, and that the learner must continually choose which set of learning abilities he or she will use in a specific learning situation (Baker, 2002).

**Conversational Learning on the Topic of Chronic Persistent Headache**

This article portrays how experiential learning can be active on web space in relation to neurology. Learning together as physicians brings us to the fulfilling place of attaining desirable outcomes that may be profound and life changing or as simple as the peace of mind that comes from the comfort and reassurance of peers when a tough situation seems to show no mercy.

In this section we illustrate conversational learning in Neurology clinical problem solving with special emphasis on a particular topic that generates considerable management uncertainty between patients and physicians. This topic is the treatment of headache. We have added this
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