



Review Article

Twitter Journal Club in Medical Radiation Science

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ABSTRACT

Introduction: Social media has emerged as a powerful platform for engagement and learning. There is a growing trend toward the use of social media among health care professionals and professional groups to disseminate and discuss knowledge. Twitter is one tool that may enhance continuing professional development (CPD) for the medical radiation technologist. To evaluate the potential benefits of Twitter to CPD among medical radiation technologists, this study explored the integration of Bloom's taxonomy with Twitter-based professional activities.

Approach: In 2015, the Medical Radiation Journal Club (<https://medradclub.wordpress.com/>) commenced a monthly Twitter-based journal club for medical radiation professionals. This study investigates the application of Bloom's taxonomy of the Twitter-based journal club for CPD purposes.

Outcome: The Twitter-based journal club provides a valuable platform for CPD. The combination of journal articles, supplementary reading, online blog, and the one-hour Twitter discussion engages all levels of Bloom's taxonomy; remember, understand, apply, analyze, evaluate, and create. A deeper insight

revealed that the Twitter journal club provides an authentic learning environment suitable for CPD in which participants consume, collaborate, and produce.

Conclusions: This evaluation demonstrated that the Twitter journal club can provide an authentic learning environment with all the cognitive dimensions afforded in a formal classroom or face-to-face journal club. Indeed, in some ways, these cognitive dimensions are enhanced in the Twittersphere.

RÉSUMÉ

Introduction : Les médias sociaux sont devenus une importante plateforme d'engagement et d'apprentissage. Il existe une tendance croissante à l'utilisation des médias sociaux parmi les professionnels de la santé et les groupes professionnels pour diffuser les connaissances et en discuter. Twitter est l'un des outils qui pourraient bonifier le perfectionnement professionnel continu (PPC) chez les technologues en radiation médicale. Afin d'évaluer les avantages potentiels de l'utilisation de Twitter pour le PPC chez les technologues en radiation médicale, les auteurs ont exploré

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l'intégration de la taxonomie de Bloom dans les activités professionnelles sur Twitter.

Approche : En 2015, le Club du journal de la radiation médicale (<https://medradjclub.wordpress.com/>) a commencé à tenir un club du journal mensuel sur Twitter pour les professionnels de la radiation médicale. Les auteurs examinent l'application de la taxonomie de Bloom du Club du journal sur Twitter aux fins de PPC.

Résultats : Le Club du journal sur Twitter est une plateforme utile pour le PPC. La combinaison de l'article du journal, des lectures complémentaires, du blogue en ligne et de la discussion d'une heure sur Twitter engage l'ensemble des éléments de la taxonomie

Introduction

Twitter is a social network that exploits concise, 140 character messages that can be read, responded to, or recirculated [1]. There is a reported 500 million users globally including medical, educational, and professional groups. Specific conversations are identified with a word preceded by a hashtag (#)—for eg, #medradjclub—to allow targeted group discussions to be followed, contributed to, and analyzed with metrics. These features are consistent with the needs of a virtual (online rather than face to face in a physical space) journal club. While live discussions are not required by Twitter (posts can be read and responded to at any time point), it does afford the luxury of live or virtual journal club discussions. Twitter has been purported to offer a valuable tool for learning and teaching, both formally and informally; however, little is known about the capacity for Twitter-based journal clubs to meet or exceed the skills and outcomes typical of more traditional face-to-face journal clubs.

When Bloom's taxonomy emerged in the 1950s, it was the outcome of a series of meetings of educators [2–4]. The most widely known outcome was Bloom's taxonomy of the cognitive domain. Nonetheless, a second book examining the affective domain was published in the 1960s, and the third book focused on the psychomotor domain was never published [2–4]. Taxonomy is simply a hierarchy whereby a mastery of higher order capabilities requires mastering of those lower order capabilities first. It gives rise to the concept of scaffolding, although not always implemented effectively in practice. Scaffolding is the educational use of tools to progressively increase the autonomy of both capability and learning itself. That is, true scaffolding or taxonomy would

de Bloom: connaissance, compréhension, application, analyse, évaluation et synthèse. Un examen plus approfondi révèle que le club du journal sur Twitter présente un authentique environnement d'apprentissage approprié au PPC, dans lequel les participants utilisent, collaborent et produisent.

Conclusion : Les auteurs démontrent que le club du journal sur Twitter peut offrir un véritable environnement d'apprentissage, avec l'ensemble des dimensions cognitives présentes dans une salle de classe formelle ou dans un club du journal où les participants se rencontrent en personne. En fait, sous certains aspects, la twittosphère permet même d'améliorer ces dimensions cognitives.

use foundation learning to build new learning rather than discrete pockets of learning common in university studies and continuing education (CE). Taxonomy is not new, with Maslow's hierarchy of needs [5] in psychology providing a working example relevant to everyday life. In contrast, the five stages of grieving published by Elisabeth Kubler-Ross [6] has everyday, practical application; yet, individuals may skip or reorder the stages and, thus, it is not a taxonomy.

Bloom's taxonomy is applicable to theory-based, cognitive capabilities and includes, from lower order to higher order; knowledge, comprehension, application, analysis, synthesis, and evaluation (Table 1). The role of a medical radiation technologist (MRT), including radiographers, radiation therapists, and nuclear medicine technologists, provides a working example. A patient presents with a referral for a particular diagnostic procedure. Knowledge is sufficient to simply perform the requested procedure. A level of comprehension is required to engage with the patient to gain informed consent. Application adds the capacity to have generalizable and transferrable skills that ensures the quality of the study is maximized. Analysis adds problem solving that might detect the need for additional images or indeed, recognize that the incorrect procedure was requested. The ability to synthesize new knowledge or understanding can value add to the process. As a result, this might detect underlying causal or comorbid issues requiring further consideration. Evaluation is more than quality assurance and includes reflection on all steps combined with a deep and broad understanding, and with a strong sense of limitations so that outcomes for this patient and future patients are enhanced. It is important that feedback loops connect and strengthen the scaffold; knowledge or

Table 1
The Traditional Summary of Verbs for Cognitive Processes from Lower Order (Left) to Higher Order (Right)

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Define	Classify	Calculate	Appraise	Construct	Appraise
Describe	Describe	Demonstrate	Compare	Design	Critique
List	Discuss	Implement	Contrast	Hypothesize	Justify
Recall	Explain	Interpret	Differentiate	Plan	Evaluate
Arrange	Identify	Solve	Investigate	Integrate	Assess

The list is indicative of actions rather than exhaustive [2–4].

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