"Tweet"-Format Writing Is an Effective Tool for Medical Student Reflection

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OBJECTIVE: Reflective writing during medical education allows for professional growth through retrospective analysis of experiential knowledge. However, these writing assignments can pose a challenge to millennial medical students who are more likely to assimilate knowledge through the use of innovative technology and who prefer their data in a concise format. Here, we present a novel, tweet-style reflective writing assignment to better engage the unique skill set of today's medical students. We analyzed the written content partway through the year to determine whether or not the format retains the impact of longer, more structured reflective writing assignments.

DESIGN: Surgical clerkship students were required to reflect on 3 distinct experiences through a 140-character written reflection, or tweet. Students were able to submit these assignments at any point during their rotation through a platform available on their smartphone or computer. There were no specifications with regard to content. These reflections were analyzed using modified grounded theory methods. Each tweet was analyzed by 2 individuals to ensure intercoder reliability. Codes were created a priori with respect to positive and negative domains, and type of experience.

SETTING: Department of Surgery, Warren Alpert School of Medicine, Brown University, Third Year Medical Student Surgical Clerkship.

PARTICIPANTS: Third year medical students at the Warren Alpert School of Medicine, Brown University. Fifty-six medical students were included in this study.

RESULTS: During the first 4 blocks of the 2016-2017 academic year, 56 students rotated through the third year surgical clerkship. One hundred and sixty-eight tweets were collected and coded. Sixty-nine tweets (42%) had a positive valence. Students reflected on the following experiences: patient interaction (54%), surgical education (34%), physician/resident interaction (27%), and career decisions (11%). Overall, 87 (52%) tweets were reflective. Many tweets included emotional reactions to specific experiences.

CONCLUSIONS: Using tweet-style reflective writing, students identified and reacted to multiple salient experiences from their surgical clerkship. They reflected on both positive and negative emotions, mostly related to personal interactions with patients, but also associated with their education, their team, and their future career. Based on early analysis of the data, we believe that short format writing can be an effective format for reflection. (J Surg Ed ▮:▮▮▮-▮▮▮. © 2018 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: reflective writing, surgery clerkship, medical student education, millennial

COMPETENCIES: Professionalism, Practiced-Base Learning and Improvement

INTRODUCTION

Mastering narrative-based competency is essential for the practicing clinician.[1,2] As a result, both undergraduate and graduate medical student education programs have evolved to incorporate reflective writing into curricula to foster the professional development of future physicians.[3,4-7] Reflective writing assignments have taken many forms in an effort to both engage students and promote effective learning. Through such assignments, students can critically assess emotional reactions, ethical dilemmas, and interpersonal interactions removed from the constraints of overseeing authority and judgment by others that may alter their response.[8]

Optimizing opportunities for student reflection content in the context of clinical clerkships can be a challenge.

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Formally assigning reflective writing may compromise the authenticity of submitted content.[9] Authentic reflection also may be hindered by ethical issues and institutional culture,[9] as well as the inherent challenge of reflection.[10] The unprecedented degree to which the newest generation of medical students has integrated technology into their daily activities may provide opportunity for educational improvement. The implementation of social media tools, wiki-based blogs, and peer-to-peer group sessions have already demonstrated the ability to enhance student engagement in reflective learning.[11,12]

In order to introduce reflective writing in the surgical clerkship, we implemented a short-format, "tweet"-style, writing assignment. This writing format was employed to capitalize on the unique learning approaches of modern-day medical students. It served as a familiar writing modality for current students and allowed leaners to reflect concisely, focusing on the most important aspects of the encounters upon which they were reflecting. Prior to this, students were required to submit reflective writing assignments during each of their third year clerkships except surgery. The goal of the current study was to assess whether students were able to achieve reflection using short-format writing.

MATERIALS AND METHODS

During the 2016-2017 academic year, all standard track third year medical students at the Warren Alpert School of Medicine were required to submit a reflective writing assignment in order to receive a passing grade for their surgical clerkship. For this assignment, each student wrote 3 short-format submissions during their surgery clerkship in the style of a post to the social media tool Twitter. "Tweets" were submitted electronically through the Canvas learning management system. At no point were the writing assignments distributed electronically or made available on the internet or social media. Although a 140-character submission was suggested (the length of a Tweet at the beginning of this project), the text entry box was not limited to that number of characters. The subject of each reflection was left to the student.

Mid-way through the first year of implementation, all of the submissions were de-identified and subsequently analyzed using thematic coding. Submissions were coded based on valence and content using an iterative approach. Valence was defined as positive, negative, or indeterminate. Only one valence was assigned per writing assignment. The content of each assignment was sorted into one or more of each of the following content categories: patient interaction, physician interaction, educational experience, or career decision. Assignments were then coded for reflection using an adaptation of the REFLECT rubric.[13] The rubric outlines 4 categories, 2 of which are nonreflective (habitual action and thoughtful action) and 2 of which are reflective (reflection and critical reflection). We collapsed this rubric to a binary coding system, reflective or nonreflective.

Two coders, 1 resident and 1 faculty member, independently reviewed all data and then compared results. Any remaining discrepancies were resolved after discussion. Intercoder reliability was calculated as a ratio of total agreements and total number of assignments coded. Quotes presented in the results are identified by whether or not they are reflective, the valence of the assignment, as well as the content areas to which they were coded. Consent was obtained from students prior to the publication of their quotes.

This project was approved by the Rhode Island Hospital Institutional Review Board as a quality improvement project (number: 966447–1).

RESULTS

During the first 4 blocks of the 2016-2017 academic year, 56 students submitted 168 writing assignments (100% completion rate). One-hundred and sixty-six assignments were thematically coded with regard to content, valence, and presence of reflection. Two assignments were excluded as they were entirely composed of quotations from other individuals. The median character length was 148 (range: 36-1104). Fifty-eight submissions (35%) were 140 or fewer characters. One hundred and forty-eight submissions (89%) were under 280 characters.

We achieved an intercoder reliability of 82% prior to reconciling all discrepancies. There was variation in written submission content and valence, as shown in Table 1. The majority of assignments were either positive or indeterminate in valence (74%). Additionally, most assignments were about patient interactions (54%), while few were about career choice (11%).

Of the 166 assignments coded, 87 (52%) were reflective. Forty-five students (80%) reflected in at least one of their three submissions, 18 students (32%) reflected in 2 submissions, and 12 (21%) reflected in all 3 submissions. An inverse association was observed between increasing character length and reflection as shown in Table 2; a higher percentage of submissions in the higher character count category were reflective than those in the lower character count categories. Fifty-eight submissions were less than or equal to 140 characters, of which 24 (41%) were reflective.

TABLE 1. Description of Student Reflections

	Code	n	%
Valence	Positive	69	42
	Negative	44	27
	Indeterminate	53	32
Content	Patient interaction	90	54
	Educational experience	56	34
	Physician interaction	45	27
	Career choice	18	11