"In-the-moment" feedback: a novel app for clinical teaching evaluations

Rétroaction en temps réel : une nouvelle application pour l'évaluation de l'enseignement clinique

Sheliza Halani,[1,2] Shoba Sujana Kumar,[1,3] Dawn Yin Lim,[1,4] Darren Hefferon,[5] Varuna Prakash,[1] Arno K Kumagai,[1,3] Esther Bui[1,6]

[1]Department of Medicine, University of Toronto, Ontario, Canada; [2]Division of Infectious Diseases, St. Michael's Hospital, Ontario, Canada; [3]Division of Endocrinology, Women's College Hospital, Ontario, Canada; [4]Division of Emergency Medicine, University Health Network, Ontario, Canada; [5]Sunnybrook Health Sciences Center, Ontario, Canada; [6]Division of Neurology, Toronto Western Hospital, Ontario, Canada
Correspondence to: Dr. Sheliza Halani; 30 Bond Street 4CCN-179 Toronto, ON M5B 1W8; email: Sheliza.halani@mail.utoronto.ca

Implication Statement

Encounter-based teaching is vital to medical education, however feedback can be difficult to obtain. We developed and evaluated a web-based application (app) called "*my*TeachingEvaluation" (*my*TE.org™). Thirty-four academic clinical teachers completed a needs assessment survey, and 47% (16/34) of participants reported that 50% or more of their teaching was undocumented. We invited participants to pilot *my*TE.org™ over eight weeks. Thirteen faculty piloted the app and 62% (8/13) reported the app enabled documentation of 50% or more of previously undocumented teaching. *my*TE.org™ app complements the pre-existing infrastructure for clinical teachers to obtain real-time teaching feedback.

Énoncé des implications de la recherche

L'enseignement fondé sur les rencontres est essentiel à la formation médicale, mais la rétroaction demeure difficile à obtenir. Nous avons conçu et évalué une application Web intitulée « myTeachingEvaluation » (myTE.org™). Trente-quatre enseignants cliniciens universitaires ont rempli un sondage d'évaluation des besoins, et 47 % d'entre eux (16/34) ont indiqué qu'au moins la moitié de leur enseignement n'était pas documentée. Nous avons ensuite invité les participants à tester myTE.org™ pendant huit semaines. Treize enseignants ont utilisé l'application, et 62 % (8/13) ont rapporté qu'elle leur avait permis de consigner au moins 50 % de leur enseignement auparavant non documenté. L'application myTE.org™ complète l'infrastructure existante en offrant aux enseignants cliniciens la possibilité d'obtenir de la rétroaction en temps réel.

Introduction

In the era of competency-based medical education, a large proportion of clinical teaching is encounter-based, occurring "in-the-moment" around specific patient cases.[1] This teaching style emphasizes patient engagement in medical decision-making and shifts the teaching focus towards building competency with experiential learning.[2] In this unique environment, teachers face increasing challenges with insufficient evaluations.[3-6] "*my*TeachingEvaluation" (*my*TE.org™ for short) is a new web-based app enabling teacher feedback that factors in the fast-paced, patient-facing clinical learning environment.

Description of the innovation

Authors EB and DH at the University of Toronto developed a free, mobile web-based teaching evaluation platform (*my*TE.org™) that is accessible online at https://myteprof.com/home. We invited clinical teachers to pilot the app over eight weeks. Teachers create an encounter in the app with a unique identification code and this generates an evaluation pathway via a Quick Response (QR) code or active link. Learners evaluated sessions anonymously either as a registered de-identified user or without registration. Figure 1 depicts the creation of a teaching encounter and the sections of an evaluation form. Teachers access collated evaluations after ≥ four

evaluations are submitted. The app's sort engine enables users to aggregate evaluation data in multiple ways and within seconds.
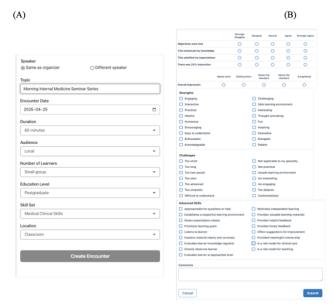

Figure 1. A) After a teacher selects "Create Encounter," a unique numeric identifier will be displayed which can be shared with learners. (B) When a learner enters the unique identifier into the myTE platform (can be done without logging in by selecting "Evaluate Anonymously"), the form on the right will open for the learner to complete an evaluation of the teaching encounter.

Outcomes

We invited participants on a rolling basis via departmental mailing lists from February 1, 2021, to October 31, 2023 to use *my*TE.org™. Thirty-four clinical teachers completed an initial REDCap needs assessment exploring their clinical teaching practices. Sixty-two percent (21/34) reported teaching at least multiple times a week, 47% (16/34) reported >50% of teaching was undocumented, and 68% (23/34) reported >50% of teaching was unevaluated. We invited participants to use *my*TE.org™ over eight weeks and complete a post-study REDCap questionnaire exploring the app's accessibility and feasibility with real-world use; 13 of 34 initial study participants trialed the app and completed the post-study survey.

After eight weeks, 62% (8/13) reported >50% of previously undocumented teaching was recorded by *my*TE.org™, 77% (10/13) felt moderately or very comfortable asking learners to complete evaluations and 75% (9/12) were likely to continue to use the app. The virtual medium, anonymous nature of evaluations, and real-time responses were considered strengths by 67% (8/12), 58% (7/12), and 50% (6/12), respectively. All participants had access to the internet and a mobile device, essential accessibility

elements. We analyzed usage data and app traffic data from Google Analytics™ from January 1, 2024 to December 31, 2024. During this period, 5,815 users accessed the app (2,992 from Canada and 1,419 from the USA); the majority (86%, 4,987/5,820) via a direct link. Among registered users, 141 teachers created 544 encounters with a mean and median number of evaluations per encounter of 6.3 and 4, respectively with a total of 3,463 evaluations.

The study was approved by Women's College Hospital Research Ethics Board (REB) (Protocol 2018-0176-E) and the University of Toronto REB (Protocol 42460). This was also approved as a Quality Improvement (QI) project at the University Health Network (QI number: 21-0155) and Sunnybrook Health Sciences Centre (QI number: 123).

Suggestions for next steps

Clinical teachers can potentially benefit from *my*TE.org™. With the early data presented, the Department of Medicine at the University of Toronto has accepted *my*TE.org™ as part of teachers' dossiers for academic promotion. Our study was limited by the small number of participants, possibly due to lack of perceived utility, lack of familiarity or trust with the app, and time or technical constraints. Furthermore, participants in our study may represent early adopters of this innovation. We plan to explore the perspectives of users who are dissatisfied with the app, to understand learners' and education administrators' perspectives, and to expand this study across multidisciplinary faculties.

References

1. Caccia N, Nakajima A, Kent N. Competency-based medical education: the wave of the future. *J Obstet Gyn Can*. 2015;37(4):349-53. https://doi.org/10.1016/S1701-2163(15)30286-3

2. Dornan T, Conn R, Monaghan H, Kearney G, Gillespie H, Bennett D. Experience Based Learning (ExBL): clinical teaching for the twenty-first century. *Med Teach*. 2019 Oct 3;41(10):1098-105. https://doi.org/10.1080/0142159X.2019.1630730

3. Debroy A, Ingole A, Mudey A. Teachers' perceptions on student evaluation of teaching as a tool for faculty development and quality assurance in medical education. *J Educ Health Promot*. 2019 Dec 1;8(1). https://doi.org/10.4103/jehp.jehp_47_19

4. Ginsburg S, Stroud L. Necessary but insufficient and possibly counterproductive: the complex problem of teaching evaluations. Vol. 98. *Acad Med*. Wolters Kluwer Health; 2023. p. 300-3. https://doi.org/10.1097/ACM.0000000000005006

5. Schut S, van Tartwijk J, Driessen E, van der Vleuten C, Heeneman S. Understanding the influence of teacher-learner relationships on learners' assessment perception. *Adv Health Sci Educ*. 2020 May 1;25(2):441-56. https://doi.org/10.1007/s10459-019-09935-z

6. Ramani S, Leinster S. AMEE guide no. 34: teaching in the clinical environment. *Med Teach*. 2008;30(4):347-64. https://doi.org/10.1080/01421590802061613