

Perceptions of feedback in workplace based training: Developing teaching materials based on evidence from an observational study

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Abstract:

Learners who excel at self-regulated learning show adaptive behaviours, learn more deeply, and retain information longer. Given the advantages to being a proficient self-regulated learner, it is imperative that teachers create environments that enable and foster self-regulated learning. A key to doing this is through delivery of effective formative feedback. However, giving effective formative feedback is a complex process with many challenges. Given the vital importance of feedback in professional training, it is essential that we understand how feedback is given and perceived in the workplace in professional training. We wish to examine how much feedback occurs in workplace-based teaching from three perspectives: the teacher's, the learner(s)', and that of an objective external observer. With this evidence, we can develop teaching materials that train teachers to give effective formative feedback, and help learners to recognize when formative feedback is happening so that they can get the full benefit for self-regulated learning.

Project description:

Background:

An important framework to understand how learners process and learn, especially in professional training where much of the learning occurs in the workplace, is that of self-regulated learning theory. Self-regulated learning refers to the process whereby learners are able to monitor aspects of their own learning while they are learning, especially motivation and metacognition¹. Learners who excel at self-regulated learning show more adaptive behaviours (ie., good studying approaches, organization, etc.), learn more deeply, and retain information and skills longer^{2,3}. Given the advantages to being a good self-regulated learner, it is imperative that teachers create environments that enable and foster self-regulated learning⁴. A key to doing this is through delivery of effective formative feedback⁵.

Formative feedback is considered essential to learning, especially in professional training. Formative feedback focuses primarily on the learning process^{6,7}, and typically takes on the form of short, descriptive comments based on direct observation of a learner⁸. Best practices in formative feedback suggest that this feedback be an exchange of information following a direct observation which describes the gap between the learner's current and desired knowledge and/or behaviours^{7,9,10,11}. Formative feedback should be informative, reflective, focused, action-oriented, documented and frequent^{6,12,13,14}. Formative feedback can increase learner confidence as well as identify and potentially correct poor behaviors prior to final assessment^{15,16,17}.

Giving effective formative feedback is a complex process with many challenges. Learners and their teachers may not understand the distinctions between formative (educational) and summative (evaluative) feedback^{18,19}. Teachers may not use formative feedback appropriately; learners can misunderstand formative feedback as summative, and this can result in learners who are fearful of negative/critical comments that are beneficial to their learning²⁰.

An additional problem is that learners may not recognize when feedback is being given. There are contrasting perceptions between the amount of feedback preceptors give and amount of feedback trainees receive²¹, but little objective data about this phenomenon. Relatively little training is provided to teachers on how and when to deliver effective feedback, especially in professional training programs, where the teachers are also practicing professionals. This is compounded by the fact that learners in professional programs do not receive training in how to ask for feedback, or initiate the feedback process¹².

Given the vital importance of feedback in professional training, it is essential that we identify when and why there is a disconnect between the amount of feedback that teachers perceive themselves to be sharing, and the amount of feedback that learners perceive is being shared. To do this, we will examine how much feedback occurs in workplace-based teaching from three perspectives: the teachers', the learner(s)', and that of an objective external observer. This will both provide empirical evidence upon which to base our training materials, as well as add to the existing literature. Once we have these perspectives, we will develop evidence-based teaching materials that train teachers to give effective formative feedback, and help learners to recognize when formative feedback is happening so that they can get the full benefit for self-regulated learning.

Goal and Objectives:

The overarching goal of this study is to create evidence-based training materials for both teachers and learners to facilitate development of good self-regulated learning through provision (teachers) and recognition (learners) of effective formative feedback.

To achieve this goal, we have two main objectives. The first objective is to empirically examine the amount of feedback that occurs between teachers and learners in the workplace. The second objective is to use the findings from the first objective to create training materials for both teachers and learners. The details of how we will achieve these objectives are below.

Objective 1: In this objective, we will observe and measure feedback exchanges between teachers and learners in workplace training, and compare that measure with the perceptions of teachers and learners as to how much feedback occurred. Additionally, we wish to explore why there may be differences in perceptions of feedback between teachers and learners. To achieve this objective, we will seek to answer the following three questions: 1) To what extent do learners recognize when feedback is shared with them in the workplace?; 2) To what extent are preceptors accurate in their judgments of the amount of feedback they share with learners in the workplace?; and 3) To what extent are there differences in the ways that teachers and learners conceptualize and define feedback?

Objective 2: The second objective will arise from the results of the first objective. In this objective, we will use the results from the first objective to develop multimodal training materials aimed at both learners and teachers to help facilitate both delivery and recognition of feedback in workplace training. Using the evidence drawn from the first objective, these training materials will be intended to be directed at both learners (to help them recognize what workplace feedback looks like, as well as some additional information about how to use feedback to build on strengths and address gaps), and at teachers (to help them structure their teaching so that they can signal to learners when feedback is being shared).

Objective 1: Methodology and Analysis

We will answer our research questions through a mixed methods prospective observational study. Two graduate research assistants (GRAs) will be trained to identify feedback shared in the workplace. The two GRAs will each be assigned a group of teachers to follow in the contexts of a medical education workplace. The role of the GRAs will be to observe and record feedback that the teachers share with their learners during the observation period.

Each teacher will be observed on 4 different occasions as they teach one or more learners. The observation periods will last 60-90 minutes, depending on when there is a natural break in the teaching to allow for a non-intrusive end to the observation period. At the end of each observation period, the learner(s) will be asked to complete a brief anonymous survey. This survey will ask their level of training, their sex, and will include questions about: how much feedback they feel was shared; examples of that feedback; a description of what good feedback should contain; whether they have had any previous training about feedback; and how much feedback they feel a teaching session should include.

Each teacher will be interviewed after each observation period. This brief interview will ask the following types of questions (interviews will be recorded for later transcription and analysis): how much feedback did they feel they shared; the degree to which they felt the learners in the session recognized how much feedback was shared; and a description or an example of the feedback they shared.

Mitigating the Hawthorne effect: A concern with any observational research is the Hawthorne effect – that the act of being observed will change the behaviour of those being observed. In this study, we have made the following provisions to reduce any Hawthorne effects: 1) By having multiple observation periods, the effect of the external observer will be reduced. As well, each individual observation session will be long enough to reduce the possibility that the teacher will be able to maintain a way of teaching that is not natural for them. 2) The GRA will be documenting observations on a mini tablet. The GRAs will be trained to spend as much time as possible looking at the tablet. We have become accustomed in our society to not notice people around us who are engrossed in their smartphones. By mimicking this behaviour, the observer will be less noticeable during the observation sessions.

Analysis: The analyses used will be determined by the questions being answered. For the first and second research questions: The absolute numbers of observations recorded by the GRA will be compared to the subjective report of amounts of feedback as perceived by learners and by teachers using descriptives, means comparisons, and correlational analysis. For the third research question: A thematic analysis will be conducted of the descriptions of feedback given by learners and teachers. The themes that show up for learners will be compared to the themes that emerge from the interviews with teachers.

For all analyses: We will look at the data within and across specialties and workplace training contexts (i.e., hospital setting, clinical office setting, outpatient clinic setting). Additionally, we will examine the data by level of training of the learners in each environment. ***Objective 2:*** Results from Objective 1 will be consolidated, and used to inform the development of teaching materials. Materials will be multi-modal – designed for in-person workshops, as well as modules created for asynchronous learning (housed online, and freely accessible). Such formats as voice-over-PowerPoint, short whiteboard animations (software provided by Department of Family Medicine), PowerPoints with scripts for others to facilitate face-to-face workshops, and vodcasts will be used. Evaluation of the materials is described below.

Alignment with TLEF mandates

Innovation: The primary literature and anecdotal clinical teacher and graduate teacher experiences support the idea that learners often do not recognize when they are receiving feedback. However, this study and the applied outcomes are innovative in that two essential pieces of evidence will be collected and acted upon: how much feedback really happens (rather than just perceptions on both ends of the educational encounter perspective), and what differences, if any, exist between what teachers think feedback looks like compared to what

learners think feedback should look like. The teaching materials that arise from this study will be fully evidence-based from an empirical study, which is innovative as well.

Collaboration: Multiple clinical teachers across multiple medical specialties and Departments will be collaborating on this study. In addition to the clinical teachers, there are two Education specialists (Shelley Ross, the Principal Investigator, and Oksana Babenko, a Co-Investigator). The graduate research assistants for this study will likely come from Education or Psychology. This cross-disciplinary collaborative team allows for multiple perspectives when interpreting the data, which will strengthen the transferability of the applied teaching materials from Objective 2, as well as facilitate distribution of the training materials across campus.

Evaluation: The teaching materials developed in Objective 2 will be evaluated in the following ways: Pilot versions of the materials will be presented to groups of teachers and learners (separate sessions, multiple disciplines). At each session, a pre-test of feedback perceptions and beliefs will be given. The teaching materials will then be presented. A post-test of feedback perceptions and beliefs will then be given, with anchor questions to the pre-test. Following this post-test, a group discussion will be held and audio recorded to obtain comments and suggestions for improvement. After each session, the pre-test and post-test results will be compared, and the discussion analyzed. Iterative revisions of the materials will be based on these pilot sessions. The materials will be tested a minimum of three times, or until pilot sessions result in general agreement about the value of the materials, measured quantitatively by pre-test and post-test results comparisons, and qualitatively by group discussion.

Sustainability/Impact on students: We anticipate that the various training materials that result from this project will be used across campus, and will have a positive impact on students in programs where workplace feedback is an essential part of learning. It should also be noted that all of the clinical teachers involved will receive a summary of the results of their teaching (objective amount of feedback, examples of feedback, their own perceptions of the amount of feedback they share, and learner perceptions of the amount of feedback shared). This will help them to improve their teaching and feedback in workplace settings, and thus directly impact all of their learner interactions.

Dissemination: There will be two products for dissemination from this project: The results of the observational study from Objective 1, and the teaching materials developed from those results in Objective 2. Academic audiences will be interested in the results from Objective 1. These results will be shared locally (such as at the Festival of Teaching), as well as at national and international conferences and through peer-reviewed manuscripts. More importantly, the materials developed in Objective 2 will be broadly applicable across disciplines, and will be made widely available as workshops on demand in our Departments and Faculty, as well as to the wider University campuses (such as at the Faculty of Graduate Studies training sessions). We would consult with the Centre for Teaching and Learning to best identify ways to publicize the availability of these teaching materials. Additionally, as the teaching materials will be multi-modal, we will leverage existing technologies to disseminate these materials to the greatest audience possible.

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