



Developing Clinical Self-Assessment Skills in First-year Dental Students

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OVERVIEW

The hidden nature of dentistry and the rapidly changing practice environment require our graduates to be effective self-assessors, to ensure that they are competent life-long learners. The assessment literature indicates that if students do not develop an understanding of assessment processes then their learning outcomes will be limited. Therefore, this showcase focuses on how we support our first-year dental students to understand our assessment processes, particularly related to development of their self-assessment capabilities. Students participate in weekly self-assessment of their clinic performance using current criteria/standards and in a series of specifically designed workshops, involving observation of videos depicting 'peers' completing relevant clinical activities. They also practise applying criteria to assess performance of 'peers' in the videos, supported by discussion with peers and tutors, and reflection through critiquing their own assessments. The outcomes from these activities will inform how our self-assessment/feedback activities can be designed to support development of dental graduates as effective life-long learners.

Keywords

Self-assessment, clinical practice, improved performance

INFORMATION ABOUT THE CLASSES

The focus of the workshops and related activities is to develop students' skills in self-assessment of their clinical performance. We have developed three workshops and related preparatory activities for workshops 1 and 2. The first workshop runs for three hours and the second and third ones for 1 hour and 30 minutes respectively. Students also self-assess their performance in their weekly clinic session. The discipline focus is dental clinical practice, although the activities could be adapted to other disciplines where self-assessment skills are to be developed. These workshops and related activities are provided in the higher education sector, School of Dentistry, The University of Adelaide, Australia. The students involved in these activities include all first year students in both the Bachelor of Dental Surgery (BDS) and Bachelor of Oral Health (BOH). Students in all years of both programmes (5 years BDS and 3 years BOH) continue to self-assess their performance in clinical sessions and related technique laboratory classes throughout their programmes. The number of students in each year of these programmes is approximately 80 and 35 respectively. The focus of this case study will be first-year students in the BDS.

DESCRIPTION OF THE CASE

The focus of workshop 1, week 4, semester 1, is to:



- clarify students' understanding of self-assessment and its importance,
- clarify students' understanding of our expectations as presented in the Dental Clinical Practice I criteria and standards,
- practice application of Dental Clinical Practice I criteria and standards, and
- write and critique written self-assessments (refer Table 1).

The activities for this workshop were provided in a booklet, with spaces for students to complete activities followed by notes providing feedback on key issues that the activities raised.

Workshop 2, week 12, semester 1, focuses on the skills of constructing a 'summative' self-assessment, based on a series of four examples of 'peer' self-assessments (refer Table 2). The final workshop, week 1, semester 2 addresses specific issues that are evident in students' weekly clinical self-assessments or were derived from focus groups with tutors held at the end of semester 1. This workshop addresses being efficient in writing weekly self-assessments and identifying strategies specific to areas for improvement (refer Table 2). During the weekly clinic sessions, students complete relevant activities, eg a soft or hard tissue examination of the oral cavity and then complete a standardised self-assessment form. At the end of each session, students discuss their performance with their tutor and receive feedback that is also recorded on the form. The focus of these weekly sessions is on feedback and not grades. This process involves students applying the assessment criteria and standards to identify their strengths, areas for improvement and strategies to address these areas. For each clinic session, students also complete a journal of reflection in their own time, using their completed self-assessment form as the basis for reviewing their progress and effectiveness of the strategies they implement. At the end of each semester, students complete their own 'summative' self-assessment based on their weekly self- and tutor-assessments.

Table 1. Description of workshop 1 activities, week 4, semester 1.

| Activities | Processes |
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| Activity 1.1: <i>Purpose of self-assessment</i> | <ul style="list-style-type: none"> • individually and in small groups (n=3) discuss and respond to: <ul style="list-style-type: none"> ○ What is self-assessment? ○ What characterises an effective self-assessor? ○ What hinders effective self-assessment? • class review and feedback from staff. |
| Activity 1.2: <i>Review of criteria and standards</i> | Preparatory activity (distributed via Blackboard): <ul style="list-style-type: none"> • note activities in clinic activity week 3 (soft tissue examination); • identify factors that characterise satisfactory performance for week 3 activity; • identify appropriate standards for a competent and caring dentist for each factor (ie a satisfactory performance). In workshop: <ul style="list-style-type: none"> • small group and class review of responses; • feedback from staff using examples of criteria and standards for week 3 clinic activity followed by review of generic descriptors for criteria and standards. |
| Activity 1.3: <i>Practice applying criteria and standards</i> | <ul style="list-style-type: none"> • use criteria and standards to assess 'peer' in video of clinical activity related to a semester 1 first-year clinic session; • small group review to derive a group assessment based on individual analyses, class review of group responses, and staff feedback in form of summary sheet of core strengths and areas for improvement for 'peer'. |



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| <p>Activity 1.4: <i>Practice writing self-assessments</i></p> | <ul style="list-style-type: none"> • following assessment of the 'peer' in the video, students write a self-assessment using the standardised clinic form; • review of three provided examples of and their own written self-assessment forms for the same 'peer', in terms of strengths and areas for improvement; • following this analysis, characteristics of effective written self-assessments are derived by small groups; • class review and feedback from staff on their analysis of the three examples and characteristics of effective written self-assessment. |
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Table 2: Description of activities in workshops 2, week 12, semester 1 and workshop 3, week 1, semester 2.

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| <p>Activity 2.1: <i>Practice writing 'summative' self-assessment:</i></p> | <p>Preparatory activity (distributed via Blackboard and submitted online):</p> <ul style="list-style-type: none"> • From four examples of weekly self-assessments from the 'peer' from workshop 1, write a 'summative self-assessment'; • Critique the four weekly examples using the characteristics of effective self assessments from workshop 1; • Critique own constructed 'summative self-assessment', using criteria provided. <p>In workshop:</p> <ul style="list-style-type: none"> • In small groups, discuss process they used for completing 'summative self- assessment', followed by class review and feedback from staff; • Critique de-identified peer written 'summative self-assessment' using above criteria, discuss in small groups and identify common issues; class review with staff feedback with an example of a satisfactory student 'summative self-assessment' (actual de-identified form, used with permission); • Staff feedback and discussion of common issues with 'summative' self-assessments, with examples. |
| <p>Activity 3.1: <i>Practice applying criteria and standards</i></p> | <ul style="list-style-type: none"> • practice using criteria and standards to assess another 'peer' in video of clinical activity related to a semester 2 first-year clinic session; • review in small groups, derive a group assessment based on individual analyses, review in whole class, and staff feedback with summary sheet of core strengths and areas for improvement for 'peer'. |
| <p>Activity 3.2: <i>Efficient writing of weekly self-assessments</i></p> | <ul style="list-style-type: none"> • in small groups, discuss and identify ways to be more efficient in systematically completing weekly written self-assessments; • class review with staff feedback; • in small groups, identify specific strategies for one issue their 'peer' presented in Activity 3.1 or for an issue derived from students' weekly self-assessments; • feedback provided via Blackboard from collation of class group responses. |

RATIONALE IN TERMS OF EDUCATIONAL IDEAS

The workshops and related activities have been designed to address the important issue of supporting first-year dental students to learn how to self-assess their clinical performance, with the aim to improve in performance. Feedback from students themselves provides an important and effective source of feedback for improving outcomes (Black & William, 1998). Development of these skills is also critical for graduates to be able to manage the changing dental practice environment by being effective life-long learners. In particular, they need to be accurate and effective self-assessors and be able to address their learning needs. To be effective self-assessors, it is clear students need to have an understanding of assessment, and these attributes need to be developed as undergraduates (Biggs, 2003; Boud, 1991). Therefore, students need to develop skills to monitor the quality of their



learning, compare their performance with assessment criteria and standards, identify gaps, and implement strategies to address these gap(s) (Biggs, 2003; Boud, 1991). Workshop activities are aimed at supporting students to evaluate clinical performances of 'peers' and regularly assess their own performance, identify areas for improvement and related strategies and review the effectiveness of these strategies.

Various recommendations from the literature indicate that to effectively use assessment criteria and standards in their self-assessment, students need clear expectations (Seale, Chapman & Davey, 2000) and support (Rust, Price & O'Donovan, 2003; Black & William, 1998). Timely feedback, based on explicit, agreed and understood criteria, is a key characteristic of effective assessment (Rowntree, 1987; Biggs, 2003). For feedback to be effective, those involved need to understand assessment standards. It has been shown that access to explicit criteria/standards is not sufficient to ensure students use them effectively to improve performance (Orsmond, Merry, & Reiling, 1997; Price and Rust, 1999).

The design of the activities we use to help first year students understand the complexities of clinic work and the importance of monitoring their performance, draws on social constructivist approaches to assessment processes (Rust, Price & O'Donovan, 2003; Rust, O'Donovan, & Price, 2005). These are aimed at achieving meaningful learning through the use of authentic activities; modelling and coaching; peer and student-staff interactions and collaboration; and reflection (Brophy, 2002; Wells, 2002). Studies showing improvement in performance after participation in assessment activities and discussion (Rust et al., 2003; McDonald and Boud, 2003) have addressed assessment of written work. We do not know if similar approaches might work within complex clinical contexts.

The combination of activities over the three workshops and weekly self-assessments provide students with opportunities to clarify understanding of purposes of self-assessment, review clinical criteria and standards, ie 'naming assessment features' (McDonald & Boud, 2003, p213), practice applying criteria, write self-assessments, review peer-marking, use exemplars, discuss with peers and staff, and reflect on their own work (Rust, Price & O'Donovan, 2003; McDonald & Boud, 2003; O'Donovan, Price & Rust, 2004). Providing opportunities to 'peer' assess in clinical settings is difficult. However, use of video recordings of these complex activities makes it easier for reviewing performance and providing feedback - all participants can observe and talk about the same thing (Eraut, 2000). Therefore, we have developed videos of students and tutors simulating actual first-year clinical situations that students can then review and discuss in the workshops.

The design of our approach to developing first-year students self-assessment skills links with REAP Project assessment principles (REAP, 2007). For example, Activity 1.2 (refer Table 1) involves students in identifying criteria and standards for a specific activity they completed the previous week (principles 1 and 2). Peer discussion in their clinic group follows, with subsequent feedback from staff (principles 3 and 4). This activity also links with principle 5 related to motivation as the activity focuses on an actual clinic exercise they had completed in the previous week and will build on in the subsequent clinical sessions. Students are also motivated by the opportunity to review their own self-assessments and receive feedback from peers and staff related to their work. Principle 6 is addressed by the weekly requirement of applying their understanding of the criteria and standards and developing skills in writing self-assessments of their own performance as well as 'peers' from the workshop videos. During the workshops, feedback from staff is tailored to the responses and issues students raise having completed the activities (principle 7). Issues evident in students' weekly self-assessment also informed the focus of the activities for the third workshop. In terms of principles 8 and 9, students self-assess and receive tutor feedback on a weekly basis each semester in class, supplemented with the self-assessment workshops and out-of-class weekly journal writing and preparatory activities for workshops 1 and 2. Activities focussed on reflection and developing an understanding of the key factors that characterise satisfactory clinical performance (eg, activity 1.2, 1.4, 2.1) addresses principle 10. The use and discussion of examples in various activities (eg, activities 1.2, 1.3, 1.4, 2.1, 3.1) provide opportunities to communicate our high expectations related to their clinical performance and their self-assessment (principle 11).



EVALUATION

Different levels of evaluation of outcomes of the self-assessment activities were used (Ethics Approval No H 014-2006). Specifically, the evaluation involved:

- students' perceptions of workshop 1 in supporting their learning related to self-assessment, using an anonymous 13-item Likert scale survey (scale: 1- 'not at all', 2 - 'to a small extent', 3 - 'to a reasonable extent', and 4 'to a great extent') with four supporting open-ended questions and two demographic questions;
- students' learning related to:
 - perceptions of their ability to self assess and knowledge related to what self-assessment is, using pre- and post-workshop surveys with 4 to 6-item Likert scale survey using the above scale and four open-ended questions;
 - application of criteria and standards in assessing videos of 'peers' completing first-year clinic activities, pre- and post-workshops;
 - students' behaviour related to completing their weekly written and end of semester 'summative' self-assessments; and
- focus groups with tutors at the end of semesters 1 and 2, related to their perceptions of students' self-assessment skills and issues students experienced.

The majority of students responded to the evaluation survey for workshop 1 (77/80; 96%). Preliminary analyses indicated students perceived the workshop was well organised (3.6 ± 0.6 ; mean \pm standard deviation) and they were clear about what was expected of them in the workshop (3.3 ± 0.6). Students also considered that participating in the workshop improved their understanding of (3.4 ± 0.6) and ability (3.0 ± 0.7) to self-assess. In relation to activities identified in the literature to support understanding of assessment criteria and develop self-assessment skills, students perceived that the practice at applying the criteria (3.2 ± 0.7) and discussion (3.1 ± 0.8) supported their learning about assessing clinic performance.

Preliminary analyses of students' perceptions of assessment processes indicated that they perceived their ability to accurately self-assess improved over the year (start S1: 3.0 ± 0.4 ; end S1: 3.3 ± 0.5 ; end S2: 3.5 ± 0.5). Over this period, there was little change in their perception of whether the criteria and standards were clearly written (start S1: 3.2 ± 0.6 to end S2: 3.3 ± 0.6) or easy to use (start S1: 2.9 ± 0.6 to 3.1 ± 0.7). Their perception of whether their ability to self-assess could be improved showed a decrease over the year (start S1: 3.2 ± 0.7 , end S1: 2.7 ± 0.7 and end S2: 2.4 ± 0.7), suggesting they considered their first-year experiences had supported them to be able to self-assess. Analysis of the data related to students' knowledge of self-assessment and behaviours and tutor focus groups is currently being undertaken.

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