A pilot study investigating the use of Action Planning Statements in tutoring clinical skills to second year medical students

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Abstract

Increasing numbers of Australian medical students are requiring education in clinical skills. This pilot study aimed to investigate the effect of one method of reflective learning, Action Planning Statements (APS), on teacher rating and student learning in Clinical Skills tutorials. 15 second year medical students were administered a Student Experience of Learning and Teaching (SELT) assessment which is a standardised questionnaire. Student feedback on their perceptions of the author's teaching and the use of APS was sought through the use of SELTs both before and after students had completed APS. One parameter of the teacher rating, 'effectiveness' significantly increased and there was more than 72% broad agreement that the APS had improved students' reflection and feedback. APS may be an important tool for improving teacher effectiveness and feedback and student reflection in Clinical Skills tutorials for medical students. Further research is needed to clarify the use of APS.

Introduction

There are an increasing number of medical students studying in Australia with Joyce (1) predicting that in 2012 Australia will graduate almost 3000 doctors. This represents approximately an 80% increase in the number of domestic graduates from 2005. Learning clinical skills which involves interviewing techniques, physical examination and diagnostic reasoning skills, is an important part of their curriculum (2). Teaching methods have changed over the past decade from teaching these skills in large teaching hospitals to teaching by General Practice tutors using Standardised Patients (SPs) in the early years of student training (3, 4).

Certain principles underpin effective clinical learning including; making independent active decisions; an individual focus to learning; giving immediate feedback to the learner; and that learning approaches should be feasible within tutorial settings (5). These principles are related to Schön's theory of reflective practice (6).

> 'The practitioner allows himself to experience surprise, puzzlement, or confusion in a situation which he finds uncertain or unique. He reflects on the phenomenon before him, and on the prior understandings which have been implicit in his behaviour. He carries out an experiment which serves to generate both a new understanding of the phenomenon and a change in the situation.' (p. 68)

This theory is a basic foundation for learning and may also be successfully applied to the teaching of Clinical Skills (7) using a reflective method of learning such as Race's method (8). He suggests the use of Action Planning Statements (APS) which are incomplete written questions about a task on which the student reflects and completes to enable self assessment and teacher/student dialogue (Appendix 1). Race suggests their use to facilitate feedback and likens assessment to the engine of learning with feedback as the lubricant.

In this study, one aspect of giving feedback to the students, APS are evaluated and their effect on students' perceptions of tutor performance and improvement in student learning and reflection is quantitatively and qualitatively assessed by standardised questionnaires.

Background and Rationale

Richardson (9, p.1) defines feedback as 'ongoing appraisal of performance based on direct observation aimed at changing or sustaining a behaviour'. Feedback to oneself which is part of self assessment may reveal a gap in knowledge or in clinical performance which then motivates students to take action to bridge the gap (10). Holmboe, Prince and Green's study (11) showed an improvement in patient care and residents' self-reported behaviour with the use of a tool of self-assessment which included self reflection. Duffy (10, p.1137) emphasises that 'When the gap is discovered through self-assessment or self-audit, it seems to have more salience than one exposed by someone else.' APS expose the gap in students' knowledge by self-assessment and encourage them to close the gap in a non-threatening way.

The context of my topic is as a tutor for Clinical Skills with sixteen Year 2 medical students at the University of Adelaide. Student feedback using educational theory and innovative methods trialled in other disciplines and the students' use of reflective practice in Clinical Skills tutorials appeared to be important issues. The students participated in a two hour weekly Clinical Skills tutorial with the author and another tutor at the University of Adelaide Medical School. Students participated in small group sessions with a Standardised Patient (SP) where they either took a history or performed a clinical examination. Feedback during the small group session in the clinical skills tutorials may be given by the tutors, by other students and by the SPs after the student's role play or examination with the SP; or by the student themselves as they were asked to reflect on their performance during the small group session. All feedback was given orally.

The related issues of student feedback, reflection and teacher performance are of importance and each area will be discussed separately.

Firstly, feedback to students is important for a number of reasons. Juwah et al. (12) have defined seven principles of good feedback which include the development of self-assessment including reflection in learning; the encouragement of teacher peer dialogue around learning; the clarification of good performance; the provision of the opportunity to close the gap between current performance and desired performance; the imparting of high quality information to students about their learning; the encouragement of positive motivational beliefs and self-esteem; and the provision of information to teachers to help shape their teaching. Rolfe and Sanson-Fisher (5) surveyed the literature about feedback and medical students. Their survey mirrors many of the seven principles. Rolfe and Sanson-Fisher noted that feedback is wanted by the students; individual feedback during formative tests improves learning outcome for medical students; timeliness of feedback improves competence; learning benefit is enhanced if feedback is specific, structured and is combined with practice; and feedback may encourage students to adopt an in depth approach to their learning in contrast with the 'rote' approach. Teachers also recognise the importance of

feedback as a tool for student learning improvement, whilst students rate giving feedback as an essential attribute of an effective clinical teacher. Race (13) suggests that feedback should be timely, either immediate or within 2 days; intimate and individual to personalise the feedback; empowering so learning is strengthened and consolidated; open the doors to student/teacher communication and be manageable. APS (8) satisfy these criteria.

Secondly, reflection and self-assessment are invaluable tools which may be learnt and developed as medical students in order to facilitate life-long learning. Duffy and Holmboe (10, p.1137) recommend that 'Guided self-assessment should be incorporated at the earliest stages of medical training as an essential professional skill.' This will facilitate the need for life-long learning and self-assessment in medicine which has been identified as a major component of the maintenance of the certification process for the American Board of Medical Specialties (14). Reflection and self-assessment using APS may also be valuable for international medical students who are known to be at the lower end of tutorial participation (15) as initially no oral skills are required.

Thirdly, there are no identifiable studies on teacher performance by Clinical Skills tutors although many of these tutors are seasoned clinicians. However, this has been identified as an area where there is need for improvement in teacher performance (16)(17), and many seasoned clinicians who teach have had no formal training in education (18). The importance of facilitating teacher performance cannot be overestimated. Simple tools such as APS designed for the task at hand can enable enhancement of learning through feedback (19) with an improvement in teacher performance and facilitation of teacher/student interaction.

Aims

This study aimed to evaluate the effect of a change in teaching practice in Year 2 Clinical Skills tutorials as assessed by the students. Student learning and achievement in the area of self-assessment and feedback will be altered using a tool, APS, which enables them to change their learning practices as necessary. This tool is also being implemented to develop reflection in their learning. The change in teaching methods in the area of student learning and reflection will be assessed together with the change in assessment of teacher performance.

Method

A literature search was performed. There were no identifiable articles in the literature describing the use of APS in the teaching of Clinical Skills to medical students.

Participants were 15 second year Clinical Skills students of a class of sixteen, of whom eight were Australian and seven were international students and one was absent. Permission was obtained from the University but Medical Ethics approval was not necessary as teaching assessment of the tutor was being undertaken.

Suitable APS were identified (8) (Appendix 1) and modified after discussion with colleagues for use in Clinical Skills 2 (Appendix 2). A written survey was compiled to enable the students to use the APS (Appendix 2). These were given to 15 second year Clinical Skills students at three consecutive tutorials. The students were asked to apply the APS to one of their cases during the tutorial. This was either an exercise in history taking or physical examination with a SP in a role play. The surveys were collected at the end of the tutorial, noted by the tutor, and returned to the student at the next tutorial to remind them of their plan. Important or recurrent reflections were brainstormed for solutions at the beginning of the following tutorial.

Assessment of the change in teaching practice on the student's learning and reflective practice and the tutor's performance was undertaken using SELT (Student Experience of Learning and Teaching) forms designed by the Centre for Leaning and Professional Development (CLPD) Unit at the University of Adelaide. These forms aim to evaluate learning and teaching effectiveness (20).

A standard teacher SELT survey (21) to assess the author's teaching practice was administered during Week 7 prior to the tutorial. This was after the group had been tutored by the author for 6 weeks. A special SELT survey to assess the change in the author's teaching practice and student learning was administered at the beginning of Week 10, after three tutorials using the APS survey. This was a modified standard teacher SELT survey with three additional questions (Appendix 3) about Action Planning Statements which were evaluated with the Likert scale used for the standard teacher SELT.

Analysis of Results

The results were analysed using quantitative and qualitative analysis.

Quantitative analysis

The ratings for the class were assessed to discover if there was a difference in the teaching rating for the course before the APS survey in contrast to the teaching rating after the APS survey. Student opinions were measured on a 7-point Likert-type scale, with higher scores corresponding to higher degrees of agreement with the statement presented. Medians for the questions for each course are presented in Table 1. Because the distributions tended to be truncated at the high end of the scale, the Mann-Whitney U test was used to compare the two sets of rating, and one-tailed tests were used.

Table 1 Results from APS survey.

| | Median (Min, Max) | | | |
Question	With AP Statements	Without AP Statements	z	p*
Effectiveness	6 (5, 7)	5 (4, 6)	2.705	0.003
Organised	6 (5, 7)	6 (4, 7)	0.334	0.369
Concern	6 (5, 7)	6 (5, 7)	1.060	0.145
Enthusiasm	6 (5, 7)	6 (4, 7)	1.116	0.132
Encourages participation	6 (5, 7)	6 (5, 7)	0.530	0.298
Stimulates interest	5 (4, 7)	5 (3, 7)	0.667	0.252
Explanations	6 (3, 7)	6 (4, 7)	0.268	0.394

* one-tailed

Results indicated that only one aspect of teaching, 'Effectiveness', was significantly different between the two groups. The median for the class with APS was 6, whilst the median for the class without APS was 5 (z = 2.705, p = .003). None of the other comparisons were significantly different.

The students were also asked direct questions about the APS and a measure of broad agreement calculated (Table 2).

Table 2 Broad agreement regarding APS

APS Evaluations	Broad Agreement
APS improved my learning	53%
APS improved my reflection	80%
APS improved feedback	73%

Qualitative analysis

Two standard questions were included in the survey:

'What are the best aspects of Dr S's teaching?' and 'Dr S could improve student learning by…' No open questions were asked about the APS. However, in answer to the first question one student wrote: 'The APS were very helpful because they forced me to critically reflect on my interview technique, where before I was nowhere near as critical of my interviewing technique.'

There were no other comments about APS in answer to the qualitative questions which were to evaluate teacher performance as part of the SELT assessment.

Discussion

This study aimed to evaluate the effect of a change in teaching practice in Year 2 Clinical Skills tutorials as assessed by the students. After the use of APS there was a significant improvement in the parameter of teaching effectiveness. 80% of students noted that APS improved their reflection and 73% noted that APS improved their feedback. Although the sample size was small, these results indicate that the use of APS may be an effective tool in Clinical Skills tutoring and further investigation should be undertaken. This may involve using APS in a larger group of Clinical Skills students for a longer period of time. There were no other studies with which to compare the data so there is an opportunity for further research.

Difficulties encountered during this study were the lack of time to complete the SELTs. This was managed by giving the students some time at the beginning of the tutorials to ensure their completion. There was also some time pressure on the students to complete the APS during the tutorial. One student was absent during the first tutorial and did not complete a SELT, so although he participated he did not complete a second SELT. The results were limited by the nature of the assessment which assessed tutor performance and student learning. There was no opportunity to administer a questionnaire about the APS as this may have required Ethics Approval.

Although there was a level of 80% broad agreement that APS improved the students' reflection, interestingly, there was only a level of 53% broad agreement that APS improved their learning. This may mean that learning and reflection are not seen as connected by a number of students and there may be an opportunity for education of the students about reflective learning to clarify this connection.

Clinical Skills is a vital part of undergraduate medical education and further research needs to be done to evaluate the place of APS in this part of the curriculum.

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Appendix 1: Action Planning Statements (8)

1.   One thing I am going to do is...
2.   One idea I am taking away is...
3.   I am going to think more about...
4.   I have found out that...
5.   I would like to know...
6.   In future I am not going to...

Appendix 2: Clinical Skills Tutorial Survey

Name: Date:

Please tick: International student   ☐

                    Australian student   ☐

The aim of this exercise is to help you improve your Clinical Skills by formulating Action Planning Statements.

Instructions

1. Please complete the following Action Planning Statements after you have examined or taken a history for one SP (Standardised Patient).
2. Please hand back the survey at the end of the tutorial.
3. A copy will be returned to you as soon as possible or at the next tutorial.

Please complete the following Action Planning Statements after you have examined or taken a history for one SP:

1. One thing I am going to do is...
2. In future I am not going to...
3. One idea I am taking away is...
4. I am going to think more about...
5. I would like to know...

Please return the survey to Dr Selby.   Thankyou.

Appendix 3: Additional questions used with Standard Teacher SELT to form Modified Standard Teacher SELT

Q8.   The Action Planning Statements improved my learning.

Q9.   The Action Planning Statements improved my reflection on my work.

Q10.   The Action Planning Statements improved feedback from Dr Susan Selby.

These were assessed on the 7 point Likert Scale used for the Standard Teacher SELT.

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