

Using standardised students in faculty development workshops to improve clinical teaching skills

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Purpose We describe the use of standardised students (SSs) in interdisciplinary faculty development programmes to improve clinical teaching skills. Standardised students are actual health professions students who are trained to portray a prototypical teaching challenge consistently across many encounters with different faculty participants.

Methods The faculty development programmes described focused on the skills of providing feedback and brief clinical teaching. At the beginning of each session, each participant was videotaped in encounters with 2 different SSs. Using microteaching (an instructional method in which learners view short segments of their own videotaped performance and discuss the tapes with a facilitator, consultant or other workshop participants), each group of participants and instructors reviewed the tapes and reflected on the encounters, providing immediate feedback to participants and modelling different approaches to the same teaching problem. The same process was repeated with more complicated scenarios after 2 weeks and again after 6 months offering reinforcement, further practice and more sophisticated development of the strategies

learned. Participants completed post-session evaluations and a follow-up telephone survey.

Results A total of 36 faculty members from the colleges of medicine, dentistry, pharmacy and nursing participated in workshops in 2000–01. The workshops were rated as highly relevant to participants' teaching, and most participants reported that they had learned a great deal. Participants most appreciated reviewing the videotaped interactions, the feedback they received, the interactions with their colleagues, the interdisciplinary nature of the groups and the practical focus of the workshops.

Conclusions Standardised students provide a high fidelity, low risk, simulated environment in which faculty can reflect on and experiment with new teaching behaviours. Such encounters can enhance the effectiveness and impact of faculty development programmes to improve clinical teaching skills.

Keywords education, medical, undergraduate/*methods; educational measurement/*standards; *clinical competence; teaching; curriculum; questionnaires.

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Introduction

Health professions faculty in busy clinical settings need efficient teaching skills to maximise the effectiveness of the brief time they have available to spend with trainees. Similarly, academic medical centres need efficient faculty development programmes to maximise the effectiveness of the brief time available to faculty for

professional development. Faculty development workshops that combine the proven effectiveness of microteaching techniques with the impact of standardised students (SSs) may provide an answer to both these needs.

Standardised students are actual health professions students who are trained to portray a specific student personality and to present a prototypical clinical teaching challenge in a consistent and reliable way in encounters with several different faculty members. They are in many ways analogous to standardised patients, who are lay persons trained to portray a specific patient's clinical history and physical findings reliably and consistently across many encounters with different students. Simulated teaching encounters with SSs use teaching cases crafted specifically for each workshop and highly trained students who are not

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Key learning points

Standardised students are actual health professions students who are trained to portray a prototypical teaching challenge by acting out a scripted role.

Standardised students provide a high fidelity, low risk, simulated environment in which faculty members can reflect on and experiment with new teaching behaviours.

Standardised student/teaching faculty encounters can enhance the effectiveness and impact of faculty development programmes to improve clinical teaching skills.

dependent on the interaction for their actual learning experience. Standardised student encounters thus provide a high fidelity, relatively low risk setting in which faculty members can reflect on their teaching beliefs and strategies and experiment with new teaching behaviours. As an added benefit, SSs can also provide faculty with direct feedback on the impact of their interpersonal and communication behaviour from the student perspective. Although standardised patients have been used productively in medical education for many years,¹⁻⁷ there are only a handful of brief reports on the use of standardised health professions students in faculty development workshops to teach or assess resident and faculty teaching skills.⁸⁻¹²

Throughout this paper we will use the term 'student' for convenience, but learners in many disciplines and at any level of expertise can be portrayed, including, for example, medical residents, nurse clinicians and dental students.

Microteaching is an instructional method in which learners view short segments of their own videotaped performance and discuss the tapes with a facilitator, consultant or other workshop participants.¹³ Faculty development programmes using microteaching techniques have been shown to be particularly effective.¹⁴⁻¹⁶ In this paper, we describe our experience of conducting workshops in which videotaped faculty interactions with SSs serve as the focus for small group microteaching review and instruction. This integration of 2 powerful teaching methods has been particularly successful and well received by faculty. We also provide detailed information about script writing and how to train the SSs in order to facilitate the transfer of this approach to other institutions.

Methods

Faculty development programmes were held at the University of Illinois at Chicago Medical Center with interdisciplinary groups of 3-8 faculty members from the colleges of medicine, nursing, pharmacy and dentistry. Except for 1 person who was referred by his department head, all faculty members had self-selected in response to college-wide E-mail messages soliciting participants for a faculty development programme to improve clinical teaching. Senior level students were recruited by liaison faculty members in each college, primarily on the basis of availability on the day of the workshop, and generally varied across sessions. The authors, experienced faculty development professionals, trained the SSs and served as workshop facilitators.

Each programme consisted of a series of 3 workshops that focused on developing a specific clinical teaching skill such as providing feedback to students, brief clinical teaching (teaching in the context of a case presentation), or asking effective questions. Prior to each session, participants were videotaped in encounters with 2 SSs who had been trained to present a relevant prototypical teaching challenge. Participants and facilitators later reviewed the experience as a group. The SSs in successive sessions were scripted to present progressively more difficult encounters: either the teaching situation itself was more complex or affectively charged, or the student's personality and/or learning style were more challenging to manage. Thus each workshop afforded the presentation and discussion of increasingly sophisticated techniques, while reinforcing material covered in previous sessions. The first 2 workshops of each series were spaced 2 weeks apart; the third about 5 or 6 months later. The research arm of the programme was approved by the University of Illinois Institutional Review Board.

Preparing standardised student scripts

The 'script' describes and defines the particular teaching challenge to be simulated by the student. There were 2 versions of each script: the faculty participant received orienting instructions including a brief description of the teaching context, while the SS was given a more detailed description of the personality and behaviour of the student to be simulated.

Faculty participant instructions

Faculty scripts defined several parameters of the teaching encounter. They specified the *educational level of the learner*, for example, first clinical rotation for a Year 3 student or someone in Year 2 of residency

training. They described the *setting and context* in which the encounter took place – for example, ‘2 weeks into a 4-week inpatient rotation in paediatrics’, ‘in your office’, or ‘in the hallway of the clinic.’ The *task* for the faculty participant was to provide feedback, to respond to the student’s questions about a case, or to teach to the case presented by the student. The *content* of the case consisted of a description of the teaching challenge presented by the student. For example, feedback scripts included a description of the student’s positive and problematic behaviours, as well as several specific examples of student behaviour ‘observed’ by faculty. Participating faculty members could elect to use this information when giving feedback to the student, or to ignore it as they might in an actual teaching encounter. Table 1 shows a partial list of feedback scenarios. In other challenges, the student orally presented a case to the faculty participant but no written information about case content was provided to the participant.

Student instructions

Information about the student’s personality, background and behaviour during the encounter information was provided only to the SS. For example, is the student to be portrayed as defensive, hostile, passive, uninterested or eager to learn? Is s/he capable, or does s/he have specific gaps in knowledge or skills? Are there cultural, ethnic, family or personal factors that have an impact on this student’s behaviour? At times a ‘learning issue’ was identified for the student (e.g. poor student time management or the inability to generalise among patients or problems) but was not volunteered to the participant unless specifically elicited. Similarly, additional patient information was provided only if specifically requested by the participant.

When working with interdisciplinary faculty groups, the setting, context, level of student and details of problems were tailored to each profession or medical speciality, leaving the basic nature of the teaching

challenge unchanged. The same script was often used for several disciplines (e.g. medicine, nursing and pharmacy) with only minimal modification.

Training standardised students

Whenever possible, senior students from each discipline were recruited to work with their respective faculty members. The faculty development instructors walked through the script with each SS several days before each workshop, discussing the problem in both general terms and specifically with respect to its place in the faculty development curriculum. The students rehearsed the encounter with the workshop instructor and a clinician confederate from the appropriate discipline, who role-played different approaches that participants might take. Specific faculty questions were often anticipated and the students were coached to answer in a manner consistent with their scripted character. Students reviewed and rehearsed the script at home. Students were rehearsed again immediately prior to the workshop to fine-tune their performance.

For brief teaching scenarios, students were trained to provide brief and diagnostically straightforward presentations to encourage the faculty participant to focus on the student rather than on unravelling the case. To enhance authenticity and decrease the memorisation required by the student, the patient material used was frequently derived from an actual patient seen by the student in the weeks before the workshop. Advanced students were sometimes coached to answer on the level of a less proficient student.

Idiosyncratic mannerisms and verbal responses of the student were modified or incorporated into the script and rehearsed until the student was ‘standardised’ and could play his/her part believably and reliably. During the actual encounter students had to improvise many of their responses depending on the prompts given by the participant, but they were coached to remain in character and to be consistent across participants when presented with the same cues. This consistency was particularly important as the faculty participants observed each other’s videotaped encounters and learned from each other’s approaches to the same stimulus from the student.

Videotaping the standardised student encounters

The encounters were videotaped in the UIC-COM Clinical Performance Center (the standardised patient facility). Encounters were generally videotaped during the first segment of the workshop, but for logistical reasons some groups were scheduled for a separate

Table 1 Examples of scenarios for feedback workshops

Standardised student
A passive student who needs to show more initiative
An uninterested senior student shortly before graduation
A student with disorganised presentations
An arrogant student who is rude to nurses and other students
A student who does not follow up on reading because she is overwhelmed with family responsibilities
A student with unprofessional behaviour towards minority patients

videotaping session several days before the actual workshop. Encounters were ended after 4–5 mins. This was long enough to get a sense of the participant's style and strategies, although not necessarily long enough to bring the teaching challenge to a conclusion. Students were trained to provide participants with 1 item of positive feedback at the conclusion of each encounter. The feedback was not videotaped.

Microteaching with the videotapes

Once the videotaping was accomplished, each workshop began with a 'critical incident' or other warm-up activity to assure the involvement of all participants and to set the stage for workshop learning objectives. A brief, interactive presentation reviewed relevant teaching principles and techniques. The bulk of each session consisted of the group reviewing segments of each participant's taped encounters while participants identified the effective teaching strategies in use. A checklist of teaching behaviours helped guide observation and discussion of the interaction. New teaching techniques were presented and practised through role play with an SS, fellow participant or (for modelling purposes) 1 of the instructors. Participants were encouraged to notice their teaching behaviours and to practise the strategies they had learned during the intervals between workshop sessions.

At the conclusion of each session, participants completed a standard workshop evaluation form and were asked to indicate their level of commitment to implementing the techniques that they learned.

Approximately 2 months after the first 2 sessions of each programme, a content-related article was sent to the participants by campus mail, with a friendly note encouraging them to use the techniques they had learned. The articles were selected to reinforce the importance of the relevant teaching skill and to review key teaching strategies. As an additional reinforcing intervention, a brief structured interview of 9 randomly selected participants (half) of a feedback programme was conducted by telephone 4 months after the initial 2 sessions. We report here on the content of the interview; the impact of this intervention on actual teaching behaviour will be addressed in a future study.

The third session of the programme, held approximately 6 months after the first 2 workshops, followed the same format as the first 2 sessions but with more challenging scenarios. This workshop served to review and reinforce the teaching strategies that had been learned. Discussion focused on participants' experiments with these strategies over the 6-month interval

and how they had modified them for their own individual circumstances and contexts.

Results

Nine workshop programmes were offered between April 2000 and April 2001: 4 programmes on feedback, 3 on brief clinical teaching and 2 on questioning skills. A total of 36 faculty members participated. Of these, 25 attended the programmes on giving feedback, 18 attended the programmes on brief clinical teaching, and 11 attended the programmes on questioning skills. Twenty-three faculty members attended 1 programme, 5 attended 2 programmes and 7 people chose to attend all 3 topical programmes that were offered. By the end of this 1-year period, 19 participants had completed all 3 stages (sessions) of the programmes they attended. Because of the nature of the scheduling process, some participants had not yet attended a stage 3 session. Demographic information about the participants is provided in Table 2.

Post-workshop evaluations were obtained after each session, for a total of 73 evaluations. Participants uniformly expressed high degrees of satisfaction with the programme. The relevance of the workshop to participants' teaching was highly rated, with an average rating of 3.85 (SD 0.36), where 1 = poor and 4 = excellent. Participants felt they had learned a considerable amount from the workshops, giving an average rating of 3.76 (SD 0.80), where 1 = I learned little or nothing and 4 = I learned a great deal. Participants from all colleges were equally satisfied with all workshops. Two-way analysis of variance was performed, with workshop rating as the dependent variable and college (medicine, dentistry, pharmacy or nursing) and workshop topic (feedback, teaching or questioning

Table 2 Workshop participant demographics

		<i>n</i>	%
Gender	Male	15	42
	Female	21	58
College	Medicine	13	36
	Pharmacy	8	22
	Nursing	6	17
	Dentistry	9	25
Faculty rank	Instructor/Lecturer	6	16
	Assistant Professor	23	64
	Associate Professor	6	17
	Professor	1	3

Table 3 Features of the workshops that participants liked best, from 66 narrative comments on post-workshop evaluations (some participants listed more than 1 feature)

Feature	<i>n</i>	%
Review of the videotaped encounters	33	50%
Feedback they received on their interaction with SHPS	18	27%
Interaction with their colleagues	12	18%
Interdisciplinary nature of the groups	8	12%
Practical focus of the workshops	7	11%

skills) as independent variables (factors). There were no significant main effects for either college or workshop, nor any significant interaction effect: College $F_{(9,120)} = 0.990$, $P = \text{ns}$; Workshop $F_{(6,78)} = 0.414$, $P = \text{ns}$; College*Workshop $F_{(12, 120)} = 0.650$, $P = \text{ns}$.

A request for narrative comments on what participants liked best about the workshops generated 66 responses: (Table 3) 33 (50%) of these focused on the review of the videotaped interactions; 18 (27%) on the feedback received, 12 (18%) on the interaction with colleagues, 8 (12%) on the interdisciplinary nature of the groups, and 7 (11%) on the practical focus of the workshops. Some comments mentioned more than 1 aspect of the programme. Faculty members appreciated the opportunity to learn more about their colleagues, and thought that they had benefited from the different teaching approaches they observed.

The post-workshop evaluations also asked participants if they intended to make changes in the way they conducted their work as a result of the workshops. All said that they did intend to make such changes; the average commitment to change was 4.4 (SD 0.54) out of 5, where 1 = not at all committed and 5 = very committed. Their actual implementation of this commitment was queried during the telephone survey 4 months after the initial 2 sessions of a feedback programme. All 9 respondents reported that they were using the feedback strategies they had learned with students and residents in their clinics, and all were able to describe at least 1 specific technique that they had used successfully since the last workshop. At the 6-month follow-up session, all participants were able to give specific examples of incidents in which they had used the teaching strategies with their students and/or residents in multiple settings. Participants noted an increased awareness of opportunities for giving feedback to learners and felt that they gave feedback more often than before and that they more often told students that they were giving them feedback. Several

participants structured formal feedback sessions into their clinical rotations and talked to students about feedback as part of their orientation to the rotation. A few participants commented parenthetically that they had found these techniques useful with their patients, staff and families as well.

Students enjoyed participating in the workshops as SSs, although co-ordinating their schedules with the workshops was sometimes difficult. Competent students at all levels were able to act effectively as SSs. While senior students were more easily trained, students in the preclinical years enjoyed reading about the disorder they were to present and served as good foils for teaching efforts. Students felt that the videotaped encounters were very realistic. They reported that they had no difficulties interacting with participating faculty members who were known to them from prior clinical rotations, and did not experience any problems when they subsequently encountered participating faculty members in the context of their clerkships. Thus, students did not feel that acting as an SS had exposed them to any risk. Most students felt that they had benefited from the experience, with increased understanding of challenges faced by their faculty and improved teaching and feedback skills of their own.

Students from the colleges of pharmacy and medicine easily crossed over to work with faculty members from the other discipline and vice versa. Medical and pharmacy faculty members regularly act as consultants to both medical and pharmacy students in their clinical rotations, answering questions sought for alternative therapies and pharmaco-therapeutics and clinically related issues. In addition, both disciplines – medicine and pharmacy – approach decision making similarly and ask similar questions of their students. On the other hand, in collaborating with colleagues in dentistry and nursing to refine our scripts and cases, we found that nursing and dentistry scenarios invoked content knowledge of a very different domain, with different patient care issues and teaching approaches. Thus, the authenticity of the scenarios was greatly enhanced when nursing and dentistry students and faculty worked with partners from within their own colleges.

Discussion

Faculty development programmes are in many ways counterparts to continuing medical education (CME) programmes and other forms of continuing professional development (CPD). Both sets of programmes can include instruction for new skills and knowledge or

instruction intended to update the participants in an area of personal interest or expertise. Faculty development as we have defined it at our institution is primarily intended to provide instruction leading to teaching improvement.

In a meta-analysis that examined several hundred reports of CME programmes Davis noted that the traditional approach, the passive lecture, was singularly insufficient to lead to any real changes in doctors' behaviours or in their practices.¹⁷ In a review of faculty development programmes, Skeff and Stratos¹⁸ similarly noted that the most effective faculty development programmes included multiple, highly interactive interventions, especially those that gave participants the opportunity to observe themselves in action. We took these studies to heart and planned our faculty development programmes to include multiple instructional modalities within a series of 3 interventions for every instructional topic.

Interacting with SSs is quintessential experiential learning. High fidelity simulations provide a palpable quality so rich that participants experience increased anxiety, frustrations and pleasures barely distinguishable from reality. However, as Kolb¹⁹ points out, the experience alone is not sufficient – reflection on the experience is the necessary fulcrum for change. The process of video review and group discussion (microteaching) of the SS interactions engenders reflection; out of this individual and group reflection arise new ways of thinking about the knowledge and skills that make up the practice of clinical teaching, and about the possibility of change.

Most clinicians have no formal training in providing instruction or feedback, and as they have never seen themselves in action, they have no way of accurately self-assessing their teaching skills. The review of videotaped encounters provides faculty with an abundance of feedback on their own performance. Many of our participants discovered they had behaviours or mannerisms of which they were not aware, and which now could be brought under conscious control. They also gained an increased repertoire of behaviours as they watched other participants deal with the same teaching challenges in very different ways. The interdisciplinary nature of the workshops provided an appreciation of the similarity of teaching challenges across different disciplines and colleges; at the end of the programme participants voiced an increased respect for the efforts of their colleagues in health professions other than their own.

The success of faculty development programmes depends on their making an impact on actual faculty behaviour. While the use of videotaped SS encounters

is a compelling and innovative element of our teaching strategy, the impact of our programmes was also emphasised by grounding them in the principles of adult education and health promotion. Specifically, our programmes combined Kolb's experiential learning approach with the PRECEDE health promotion model of Green and Kreuter.²⁰

Kolb's experiential learning approach¹⁹ describes the active learning cycle as consisting of 4 sequential stages: a *concrete experience*, *reflective observation* on that experience, *abstract conceptualisation* of principles derived from reflection on the experience, and *active experimentation* based on those principles. The Kolb cycle was easily observed in our workshops. The interaction with the students provided the concrete experience, and reviewing the videotapes (microteaching) encouraged reflective observation. Discussion of teaching strategies based on the encounters facilitated abstract conceptualisation, and the opportunity to practise in the workshop, during the interval between workshop sessions, and with SSs again at the next session, all provided opportunities for active experimentation with these new skills. As we taught the Kolb cycle in our workshops; illustrating the use of the cycle in our own teaching was a particularly effective approach.

Faculty development programmes have to deal with enduring patterns of behaviour that can be considered part of the 'lifestyle' of the health professions educator. Just as not all health behaviour is positive, teaching behaviours of the health professions educator may be 'healthy' or 'unhealthy'. Change in these behaviours does not occur all at once.²¹ The PRECEDE model²⁰ used in health promotion was developed as a framework for planning and changing lifestyle health behaviours. Based on theories and research from epidemiology, instruction and learning, the social sciences and the behavioural sciences, the PRECEDE model supports a multifactor, multimethod approach to learning that can fruitfully be applied to faculty development programmes as well.

The basic elements of this approach are:

- identification and fostering of *predisposing knowledge and activities*;
- development and communication of *enabling procedures*, and
- establishment of *reinforcing systems and methods*.

Predisposing knowledge and activities in faculty development can be understood in 2 ways. The first is in terms of a faculty member's predisposing capabilities and predisposition to behave in a certain way and to have beliefs, values and attitudes about a specific educational

process such as giving feedback. Predisposing factors also include faculty development efforts to provide information that will be essential to later learning by the participating faculty members. In our workshops, video review and microteaching of the faculty–standardised health professions student interactions highlighted participants' predisposing attitudes and behaviours and prepared the ground for learning new approaches to teaching.

Enabling factors are systems resources that support learning when it is desired. In clinical medicine, system resources can include doctor opinion leaders or medication information available online. Similarly, our faculty development programmes system resources included the use of faculty members who were successful 'graduates' of advanced programmes. These faculty members had credibility as clinical peers and as faculty development programme 'graduates'. They assisted as co-teachers, by acting as role models and by serving as liaisons between the authors and new participants. Of course, the standardised health professions student interactions were themselves powerful enabling factors, which combined with the focused discussions, brief lectures, slides and handouts to provide the faculty members with the new knowledge and skills that they needed.

Just as predisposing elements support early learning, *reinforcing elements* are intended to assure ongoing learning and eventual, ever lasting behaviour changes. Reinforcing activities encourage the learner to recall beliefs, knowledge and skills that had been presented through prior predisposing and/or enabling activities. In our programmes, successive iterations of the process in the second and third workshop sessions provided a spiral in which reinforcing activities for the first session comprise the predisposing activities for the second. The episodically recurring intervention served to re-teach, reinforce and re-motivate participants to use the clinical teaching methods they learned.

Follow-up telephone calls and e-mails provided additional reinforcing elements that encouraged reflection-on-action. In this way, our reinforcing activities are like the work of academic detailers.¹⁷

The programme described was by many standards a successful one. Faculty interest was high, and the programmes were generally over-subscribed. Programmes successfully maintained a majority from the junior faculty target group. The participants indicated that they had learned a considerable amount and were generally pleased with the programme. While these are certainly encouraging findings, there is more to outcomes than satisfaction²² and many other important

questions need to be asked. Irby and Hekelman²³ and Wilkerson and Irby²⁴ noted the importance of field research on the effectiveness of faculty development, just as Davis and colleagues¹⁷ did for CME. We hope to continue our own exploration of standardised students with an analysis of the videotaped encounters to gain insight into the behaviours that occur during these faculty–student interactions and to establish whether there was a change in these behaviours over the course of the programme. We also plan studies in which faculty members encounter the same SSs prior to the programme and again at the conclusion of the programme, to provide pre- and post data, with each faculty member serving as their own control. The SSs themselves can serve as a rich source of data; we plan to review videotaped encounters with the students involved in order to define the behaviours most critical to effectiveness from the students' point of view and to determine whether these behaviours are case-specific. Focus groups with SSs will help explore the effects on the students of participating in these workshops. Future research is also needed to define the extent to which each of the major instructional strategies and intervention elements contributed to fostering the impact of the programmes^{25,26,27}. Student evaluations of participant teaching before and after the programme would be useful as a measure of external validity. Student evaluations were not available for the time period under consideration but are planned for future studies.

This study was limited by the fact that all but 1 of the 36 faculty attending the workshops were self-selected – they attended because of their interest in quality teaching. Their motivation to learn new methods, to change behaviours, and to have an improved impact on their students might have had an effect on their acceptance of the programme, their satisfaction, and their ultimate application of programme content in their day-to-day teaching. In addition, the small number of participants limits the power of our statistical analyses, especially the ability to detect significant differences in programme satisfaction between colleges and between programme topics. We hope to remedy this as we continue to accumulate data from ongoing programmes.

Conclusions

The utilisation of standardised students, evoking Kolb's experiential learning cycle within a spiral of predisposing, enabling and reinforcing elements, provided a powerful impetus to change for the faculty members who participated in our programmes.

Interactions with standardised health professions students provide controlled yet compelling experiences of simulated clinical teaching challenges replete with opportunities for reflection. Faculty developers can exploit these opportunities by incorporating Ss, with or without video review and microteaching, as an active learning strategy in programmes fostering reflection on practice. Just as standardised patients have revolutionised the teaching and assessment of clinical skills, multimodal faculty development programmes utilising Ss can enrich efforts to improve and assess teaching skills in health professions education.

Contributors

MHG developed the initial concept described, conceptualised the educational plans, wrote the grant on which the programme described is based and initiated the project. RY developed the study protocol and organised and conducted the data analysis. MHG and RY outlined the paper together, organised it and prepared and edited the full manuscript interdependently.

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