Teacher training for medical faculty and residents

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Since 1984 the University of British Columbia's School of Medicine has offered teaching improvement project systems (TIPS) workshops on effective teaching techniques; two workshops a year are given for medical faculty members and two a year for residents. The faculty members who conduct the workshops have received training on how to present them. The most powerful learning experience offered by TIPS is the opportunity for participants to present 10-minute teaching segments that are videotaped and later viewed privately by the participants. Eight workshops have been attended by 166 faculty members, and two others have been attended by 42 residents. This project demonstrates faculty development for both the participants and the people who teach the workshops.

Depuis 1984 l'école de médecine de l'University of British Columbia offre des ateliers pour l'amélioration des techniques d'enseignement (dits "TIPS") dont chaque année deux s'adressent aux professeurs et deux aux résidents. Les professeurs qui les animent ont reçu une formation à cet effet. L'élément le plus profitable de ces ateliers est la leçon d'une dizaine de minutes que chaque participant est appelé à donner et qu'il visionnera à part soi au magnétoscope. Huit ateliers ont été suivis par 166 professeurs et deux autres par 42 résidents. Notre programme illustre une manière de développer les qualités pédagogiques tant chez les participants que chez les animateurs.

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How do physicians learn how to teach? A recent survey of Canadian medical schools indicated that workshops or programs on instruction techniques ranked second in a list of the 10 most effective faculty development practices.[1] In this article I describe one form of workshop: the teaching improvement project systems (TIPS) offered by the University of British Columbia's (UBC's) School of Medicine to its faculty members and residents.

Background of TIPS

In 1975 the University of Kentucky's Center for Learning Resources received a grant from the W.K. Kellogg Foundation to improve teaching in the health care professions. To further this goal workshops on teaching effectiveness were conducted at a host institution or school, interested faculty members at the host school were trained in how to give such workshops, various teaching modules and discussion "trigger" tapes were provided for use in the workshops, consultation was made continuously available, and an annual conference was held. There are now 21 TIPS sites in schools in North America.

UBC's School of Medicine was established as a TIPS site in 1984 through workshops in which future TIPS faculty members were trained. It is considered unique in the TIPS network since it is the only TIPS site in Canada and the only one at a medical school.

UBC's TIPS faculty comprises two pathologists, a rheumatologist, two residents in internal medicine, a radiation oncologist, a doctoral candidate in physiology, two members of the Department of Biomedical Communications and two professional educators whose common characteristic is an enthusiastic commitment to teaching. Rewards for teaching TIPS workshops are not financial but do include personal development,

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recognition by the dean and a celebration dinner after the workshop.

TIPS offers two workshops a year to medical faculty members and two similar workshops a year to residents.

Description of the program

The workshop takes place over 1 evening and 3 days and costs $185. The activities are designed such that at the end of the workshop the participants will be able to (a) formulate instructional objectives appropriate to their own setting, (b) plan and organize a presentation in any setting, (c) apply presentation techniques in their own setting, (d) use audiovisual aids more effectively in teaching, (e) formulate questions that promote thinking, (f) use methods that help students become active participants and (g) evaluate their own teaching behaviours.

More specific goals are set for each session: teaching and learning, objectives, microteaching, organization, questioning, analysis of teaching behaviours, and small-group discussions.

During the first evening of the workshop, participants are asked to define teaching and learning. They usually define teaching as a transmission of knowledge, and sometimes of attitudes and skills, and learning as storage or reception of knowledge. Since people hold such concepts of teaching and learning it follows that they see teaching as synonymous with telling, and they see learning as merely listening and recording. During the discussion the shortcomings of these definitions are revealed, and other concepts are offered — that teaching is helping someone learn and that learning is a change in behaviour as it relates to thinking, feeling, doing or valuing. The simplicity of these definitions fosters a student-centred approach to teaching and allows the definitions to be emphasized and reiterated throughout the workshop.

The next question is What is effective teaching? If teaching accomplishes its goals then the question becomes What is the teacher trying to accomplish? Hence the session on instructional objectives, which is held on the first day of the workshop.

The first day

It has been shown that objectives enhance student learning provided that they are known to the students, are clear and set a standard of acceptable performance.[2] In one study the teachers' ability to set clear goals correlated with the students' ability to assess symptoms, take a medical history and perform a physical examination.[3]

Although it may seem obvious that clearly stated objectives are beneficial to both teachers and students, some teachers resist the notion either because they see it as an impediment to their ability to cover the topic or because they find it difficult to analyse their material.

After the session on objectives students prepare for their first "microteaching" session. Microteaching — a teacher training procedure — was first developed for students preparing for primary or secondary school training.[4] The value of videotaped feedback in training medical educators has been demonstrated by Skeff,[5] who found that physicians who had received videotaped feedback were rated higher on teacher behaviours than physicians who had received other forms of feedback; Cassie, Collins and Daggett[6] found that it improved the teaching of pediatric rounds.

Microteaching is the most powerful learning experience TIPS workshops have to offer. Two microteaching sessions are offered in each workshop — one on the first day and one on the last. The participants are required to state their objectives during the first session; otherwise they teach in their usual fashion.

Each participant in a group of six presents a 10-minute teaching session, which is videotaped. The session can be in the form of a lecture, demonstration, discussion, bedside "round" or patient instruction — whatever the participant feels will provide the most useful experience. The other participants act as students or patients during the session. After all the sessions have been presented each participant privately views the videotape and then confers with the group leader.

The conference helps the participants to identify the strengths and weaknesses in their teaching and to set goals for improvement. The group leaders ask about whether the "students" met the objectives, how well the criteria were met and how alternative strategies could have been used. Having been reared in a system in which evaluation is usually done by an external authority, the participants sometimes find it difficult to accept the validity of their own observations. Nevertheless, the TIPS faculty members believe that self-evaluation is more worth while than feedback received during group or faculty sessions.

Many participants are already experienced, skilful teachers; others are novices. The workshop is considered akin to a tennis clinic, where players have a chance to improve their stroke regardless of their degree of expertise at the time of joining.

The second microteaching session allows participants to demonstrate teaching behaviours that are discussed on the second day of the workshop.

The second day

On the second day participants have the opportunity to watch the TIPS faculty members practise what they preach during four sessions: set, body and closure; questioning; use of media; and analysis of teaching behaviours.

"Set, body and closure" refers to organization, a characteristic of good clinical teaching that appears consistently in the literature.[7-9] Although there may be other ways to organize a teaching session, TIPS considers six elements of the set, or the beginning of a presentation, eight elements of the body and four elements of the closure as forming one logical process.

After a break is the session on questioning, which, following organization, is considered the most important skill. The questioning behaviour of teachers is lacking. In 1912 Stevens[10] reported that four-fifths of student-teacher interactions comprised question-and-answer dialogue and that of the numerous questions asked, few prompted thought. Although the days of recitations and drills are gone, several studies have found that about 85% of questions require only recall of information.[11-13] Foley, Smilansky and Yonke[12] found that during teaching and other types of rounds, when students are supposedly engaged in problem-solving, the students talked only 4% of the time, compared with instructors, who talked 62% of the time, and residents, who talked 33% of the time; of the questions asked of the students 81% required only low-level responses. Health care professionals can be trained to ask questions whose answers require higher levels of thinking, such as analysis, synthesis and evaluation.[13]

Two aspects of questioning are considered in the workshop: the level of thinking to which questions can be aimed and the ways in which questions are asked.

After lunch, a particularly challenging time since people tend to sink into a stupor if required to sit passively, the staff of the Department of Biomedical Communications steps in to present new and entertaining ways of using television in teaching. Humour seems to be a prerequisite to work in this department, and participants' drowsiness is counteracted by laughter.

In the last session the participants apply what they have learned by evaluating a series of demonstration videotapes against criteria discussed during the day and listed on a form developed by the TIPS faculty members. (These forms are also used for self-evaluation after the second microteaching session.)

The form of presentation throughout all the sessions is interactive lecture, distinguished from group discussion by the fact that the teacher maintains most of the control. Occasionally there is interaction among participants, which is encouraged, but for the most part the TIPS members give what they consider to be lectures. That they do not "deliver" or "cover" topics or engage in solitary dialogue lends new meaning to the concept of a lecture for many people.

Despite compelling, decades-old evidence that 50 minutes of relentless speech (with or without slide presentations) from the teacher does little to aid learning, this monumental waste of everyone's time continues unchecked in medical schools. The first studies to demonstrate that the spoken word generally fails to communicate anything after the first 15 minutes were conducted by the British Broadcasting Company[14] in the 1940s. Numerous other studies have revealed the limited uses of the lecture as a teaching method.[15] Russell, Hendricson and Herbert[16] found that a medical lecture that devoted only 50% of an hour to presenting essential information and the other 50% to learning reinforcement strategies resulted in significantly better recall of the essential information than did lectures that present larger amounts of new information. Teachers who persist in vocalizing in 1 hour what they have taken years to learn merely defeat the purpose of the lecture. The TIPS program presents not only ways of interacting with and involving students when they are in a large group but also ways of reducing the density of information.

The third day

The third day of the workshop begins with small-group sessions. The participants select one of four discussion groups that, depending on the TIPS faculty members available, are devoted to bedside teaching, demonstrations, patient education, leading discussions, use of role play and teaching on television.

After the plenary session the participants move into their small groups for the second microteaching session, which also contains a self-evaluation component. This chance to apply what has been learned is of great benefit, particularly to resident physicians.

TIPS for residents

The main difference between residents and the usual participants in TIPS is age, experience and group composition. The residents are all physicians and novice teachers, whereas the others represent all health care professions and are much more experienced at teaching.

The workshop for residents is similar to the "regular" workshop in that it includes two microteaching exercises and sessions on objectives, organization and questioning. However, each day of the residents' workshop is longer, and, since the approach of "Let's learn from each other" is unsuccessful with residents, less time is spent in discussion, and the approach is more one of "Do it this way". Audiovisual presentations are reduced to one half-hour session, when "Dr. Meleena Stool" ineptly mumbles while showing a transparency covered with tiny green writing; this fosters a critical discussion on how transparencies should be used.

In the regular workshop bedside teaching is reserved for one of the small-group sessions. The residents' workshop offers a general and lengthier

session on the topic since it has been estimated that residents provide 40% to 60% of clinical teaching.[17,18]

Evaluation of TIPS

At UBC eight workshops have been attended by 166 people, 88 from medicine, 24 from rehabilitation medicine and 54 from other health care professions. Two workshops have been attended by 42 residents.

Evaluation of both workshops has been limited to "happiness" indexes obtained from the participants' responses to a questionnaire administered at the end of each workshop. The responses have been highly favourable. The participants were also asked to describe what they considered to be the most and least valuable aspects of the workshop. The microteaching sessions followed by the set-body-closure format and questioning were considered the most valuable. Aspects that the participants found undesirable were the time devoted to topics (there were some requests for more speed), the artificiality of the microteaching sessions and the lack of group feedback. In mentioning a session on leading discussions, one participant felt that the method was not applicable to medicine but, rather, to philosophy and religion. The TIPS faculty members take these comments very seriously and use them to fine-tune the workshops.

Evaluation of the TIPS workshops has not progressed beyond the think-tank stage, but collaborative studies are being discussed.

Discussion

What has been learned from 4 years' experience in providing teaching improvement workshops to medical faculty members? The most striking finding is that the participants, if not already good teachers, are enthusiastic about teaching, recognize that training in a discipline is insufficient preparation for teaching and are prepared to invest as much time in a teaching workshop as they do at a conference on maintaining clinical competence. Hence, as with many continuing education programs, the workshops preach to the converted.

So far, all the participation in the workshops has been voluntary; however, the Curriculum Planning and Development Committee recently recommended to the dean that all new faculty members should attend a workshop in the first year of their appointment. The TIPS faculty members have often conjectured about forced participation, its impact on the workshops and what strategies will be needed. However, until there is a concerted movement within the school to establish systems with credibility and clout, the TIPS workshops will remain, to those who are even aware that they exist, as "nice" but unimportant in medicine.

Faculty development workshops are often given by outside "experts". At UBC they are given by local faculty members from a variety of disciplines. Thus, faculty development is on two levels: basic skill training for medical teachers and residents; and advanced skill training for TIPS faculty members, who become increasingly expert in teacher training and independent of professional educators.

This project has demonstrated that with the help of people from the TIPS site in Kentucky and local medical educators a cadre of faculty members can be trained to present teaching effectiveness workshops to their colleagues at a reasonable cost.

I doff my hat to the members of the TIPS team: Virginia Baldwin, MD; Carol Ann Courneya, PhD; Jean Gillies, MD; Bill Godolphin, PhD; Clive Grafton, MD; Simon Huang, MD; Mike Menard, MD, PhD; Gordon Page, EdD; Bob Quintrell; and Denise Sketches.

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