



ASSESSMENT/EVALUATION

## Application of “VITALS”: Visual Indicators of Teaching and Learning Success in Reporting Student Evaluations of Clinical Teachers

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**ABSTRACT Context:** *At the College of Medicine and Medical Sciences, Arabian Gulf University, Bahrain, a system has been introduced in which clerkship students evaluate clinical faculty using Visual Indicators of Teaching and Learning Success (VITALS).*

**Objective:** *To describe the use of VITALS in reporting student feedback on teaching and learning effectiveness of clinical faculty in the clerkship.*

**Design:** *Descriptive study.*

**Subjects:** *A total of 210 clerkship students evaluated 76 clinical tutors over a period of 3 years. Feedback was also obtained from seven programme managers and one supportive staff member.*

**Method:** *Nine indicators of effective clinical teaching were identified through a literature search. Students individually reported on clinical faculty teaching capabilities using a 5-point, Likert-type scale. Cumulative reports of students' feedback on clinical faculty teaching were prepared using opposing bar graphs, reflecting perceived areas of strength or weakness in each teacher's performance.*

**Results:** *A total of 1450 evaluation forms were completed by 180 of 210 students (85.7%). VITALS graph representations of students' perceptions of clinical tutors were communicated to each clinical tutor at the end of each clerkship and academic year. Twenty-one students out of 53 who gave written comments were related to VITALS. They reflected a positive view of VITALS as a process or tool of faculty evaluation. Clinical faculty (18), programme managers (7) and supporting staff (1) gave comments indicating acceptance of the system.*

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**Conclusion:** *This preliminary study suggests that VITALS could be an effective tool for improving clinical teaching. It is acceptable to students, faculty and managers of educational programmes. The database reflecting their teaching and educational profiles were used to provide clinical faculty with constructive feedback.*

**KEYWORDS** *Student evaluation of Faculty, effective clinical teaching, VITALS.*

## **Introduction**

The need to improve the quality of teaching in medical schools is widely recognized (Finucane & Rolfe, 1996). Teaching typically occurs in traditional classrooms and in clinical teaching environments; two distinctly different yet complementary settings for developing future clinicians. Jarski *et al.* (1990) suggested that effective clinical instruction “is believed to require a unique subset of teaching skills, and specific teaching behaviours should be identified and evaluated”. As is true for teachers in all the professions, physicians have not typically received much, if any, preparation in the philosophy or techniques of teaching and education. They may find themselves called upon to teach with little or no orientation to this very specific role (Casbergue, 1978).

The College of Medicine and Medical Sciences (CMMS) at the Arabian Gulf University, Bahrain, has adopted a 6-year problem-based learning curriculum. The final 2 years of medical school constitute the clerkship phase. Development of evaluation tools and techniques that were acceptable to students, clinical faculty, and the administration and that were practical to implement and analyse was considered a necessary first step. In 1996, a comprehensive system of clinical faculty evaluation was developed at our school to support decisions about required faculty improvement programmes, as well as about retention and promotion. Evaluation of clinical teaching skills was an important component of the overall plan.

A large number of clinical teaching assessment forms have been developed, tested, and reported on in the professional literature (Zimmerman & Westfall, 1988; Wolf & Turner, 1989; Bing-You & Greenberg, 1990; Hewson & Jensen, 1990; Jarski *et al.*, 1990). Having reviewed the literature over three decades, Das *et al.* (1996) found that effective clinical teaching characteristics include professional competence, interpersonal relationships, teaching practices, personal characteristics, evaluation practices, and availability to students. In a more recent review of a variety of evaluation methods of clinical teaching, Snell *et al.* (2000) stated that, while earlier researchers focused on such characteristics of good teachers as accessibility, enthusiasm, clarity, knowledge and role modelling, later studies have included elements of the process of learning, such as creating a learning environment, promoting effective teaching and providing

feedback. The indicators used to evaluate teachers in these studies have been quite varied. Table 1 gives a comparison of the indicators used in our study and those used in the studies we have reviewed.

Among six items identified as particularly strong discriminators of clinical teaching ability, Sloan *et al.* (1996) included availability to students and serving as a positive role model. While encouraging professional skills *per se* was not used as an indicator in any of the studies surveyed, some authors considered the demonstration of professional skills in the clinical setting as important (Gjerde & Coble, 1982; Goertzen *et al.*, 1995). Professional skills appear to play a less important role in effective clinical teaching (Jarski *et al.*, 1990).

Clinical reasoning skills include asking appropriate questions and problem solving. The encouragement of these skills was considered important by Goertzen *et al.* (1995) and by Krichbaum (1994), respectively. The latter, in addition, identified the extent to which the clinical teacher helped students organize their learning, an essential component of the ability to encourage self-learning, and conveying a positive and concerned attitude, as indicators. Both these sets of authors also considered giving ongoing feedback, in a specific and timely manner, as an important characteristic of effective teaching.

Although some faculty continue to resist having students evaluate their teachers, this practice has become fairly routine in most colleges and universities. Most tutors and students agree that feedback from learners is

**Table 1.** A comparison of indicators used in this study with those used by other researchers

Indicator used in present study	Indicators used in other studies
Availability	The degree to which the preceptor is available to students (Sloan <i>et al.</i> , 1996)
Defines clerkship objectives	The ability to set clear objectives (Krichbaum, 1994)
Eases student access to patient/team	
Encourages professional skills	Professional skills (Gjerde & Coble, 1982); demonstrates clinical and professional competence (Goertzen <i>et al.</i> , 1995)
Encourages clinical reasoning	Emphasizes problem solving (Goertzen <i>et al.</i> , 1995); asks appropriate questions (Krichbaum, 1994)
Encourages self-learning	Helps students organize their learning (Krichbaum, 1994)
Gives continuous feedback	Provides student with ongoing feedback (Goertzen <i>et al.</i> , 1995); provides specific and timely feedback to students (Krichbaum, 1994)
Meets student learning needs	Conveys a positive and concerned attitude (Krichbaum, 1994)
Represents a good role model	Serves as a positive role model (Sloan <i>et al.</i> , 1996)

critical for improving clinical learning experiences (Schwiebert, *et al.*, 1996). Students possess a unique perspective on the teaching/learning process that should be tapped as a potentially rich source of data for improvement. The students are the direct beneficiaries of the clinical teacher's efforts and are thus best placed to comment on such teaching (Bandaranayake, 1978; Finucane & Rolfe, 1996). Evaluations by students of their clinical learning experiences are recognized as a valid source of data that can facilitate constructive changes and improve the quality of clinical teaching (Zimmerman & Westfall, 1988).

Visual Indicators of Teaching and Learning Success (VITALS) was described by Tekian and Williams (1997) and applied in evaluating classroom teaching. VITALS displays, identifies and emphasizes the elements of instruction that students consider strengths and weaknesses.

## **Aim**

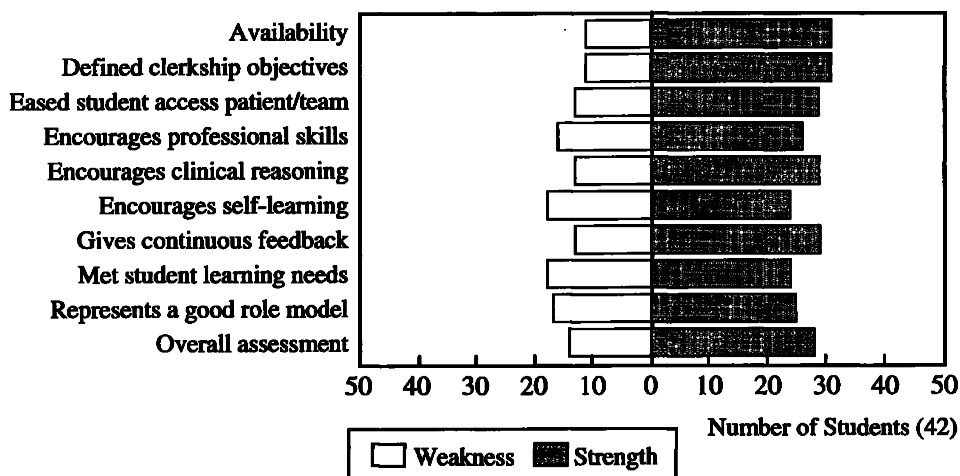
The purpose of this paper is to describe the use of an assessment tool (VITALS) in reporting student evaluations of the effectiveness of faculty teaching in the clerkship phase. The accumulated information is meant for providing feedback to the clinical faculty, for suggesting administrative decisions on issues related to contract renewal and promotion, and for guiding teacher training programmes.

## **Context and Method**

With a clear understanding of the literature regarding effective clinical teaching and a desire to reduce the number of competencies to a small core, nine indicators were developed for this study (Table 1). Students' open-ended narrative comments were also incorporated in the list to provide internal validation of the menu-driven student feedback.

At the end of each clerkship, all students evaluated their clinical faculty using a checklist and a 5-point Likert-type scale for each item. The checklist was piloted with 28 students and 15 faculty. Minor adjustments were made based on the students' and faculty's comments on what they considered "effective clinical teaching attributes".

The data accumulated at the end of each academic year were analysed and displayed as a horizontal bar graph using Harvard Graphic software. A score of 1 or 2 on this Likert-type scale is considered as indicating an area of weakness while a score of 4 or 5 indicates an area of strength. A score of 3 is considered non-committal and isn't represented on the visual display (Figure 1). Each horizontal bar indicates the number of students considering the indicator a strength or a weakness.



**Figure 1.** Application of VITALS: visual indicators of teaching and learning success in reporting student evaluation of clinical teachers

The Clerkship Programme secretary was responsible for collecting the students' evaluation forms and developing the visual display graph.

Students' comments, expressed in writing on the evaluation form, and comments by faculty, managers and support staff obtained during unstructured interviews were analysed to establish a preliminary evaluation of their perception of the VITALS approach.

## Results

A total of 76 clinical faculty were evaluated over a 3-year period from October 1997 to September 2000. A total of 1450 evaluation forms were completed by 180 of the 210 students (85.7%). Graphic representations of attributes for all faculty members were created at the end of each clinical rotation. At the end of the academic year a cumulative graph was developed for each teacher (Figure 1).

No recommendations for additions or deletions of the indicator were received from the faculty or students.

Clinical faculty were given feedback about their performance as perceived by the students. The department chairman communicated the graph confidentially to each clinical tutor at the end of each clerkship and at the end of the year.

Students gradually developed more confidence in the system as demonstrated by an increase in the number of students completing the form and requesting corrective action to be taken to improve perceived weaknesses in faculty performance.

The CMMS administration established a database that reflected the teaching and educational profile of each faculty member. The information was used for career review meetings, considered by the Promotions Committee, and reviewed when deciding on extensions of faculty contracts.

### *Students*

Student comments were mainly on issues related to individual clinical tutors, rather than on the method. Of 53 students who gave a written comment on the evaluation forms, only 21 were related to VITALS as a process or tool of evaluation. The latter comments fell into the following categories:

- means of expressing student opinion ( 18/21=85.71% ); example: “It is a good way to express our opinion concerning the educational abilities of our clinical faculty”;
- impact of student feedback on tutors’ performance ( 12/21=57.14% ); example: “Over time, we are seeing improvement in some of our clinical tutors. We think faculty knowing that students give feedback on their performance, is an important factor for such improvement”;
- students’ objectivity in evaluating clinical tutors ( 5/21=23.8% ); example: “Student feedback is an objective way of appreciating good attributes, even if the tutor was tough during the clerkship”; and
- feedback to the students and usefulness of their evaluation ( 8/21=38.09% ); examples: “We do not get any feedback on our evaluation. It would be nice to discuss the students’ comments in general”, “We hope our comments are taken seriously”.

### *Faculty*

The 18 interviewed faculty gave the following comments, which fell into the following categories:

- acceptability by the faculty ( 12/18=66.66% ); example: “I do not feel uncomfortable knowing the students will evaluate me indicating my strengths and weaknesses”;
- usefulness as a tool for feedback ( 15/18=83.33% ); example: “I like the visual display. At a glance it gives me a global indication of my performance, my strengths and areas which need improvement”;
- impact on faculty performance ( 5/18=27.77% ); example: “I was not happy that students indicated my availability was less than expected, but consciously or unconsciously I was keen during the following rotations to improve on this item”; and
- student objectivity in evaluating clinical tutors ( 3/18=16.66% ); example: “Students are not accurate in their comments. They need to be trained on how to be objective”.

*Managers:( Dean, Vice-Deans, Chairmen of Departments)*

Seven managers expressed the following individual views.

The Visual Display gives valuable feedback of the clinical faculty's educational performance. Projecting a trend over a period of time is more objective than individual student feedback. (7/7)

I found it easier to show a graph to the faculty than discussing individual incidents. (6/7)

Over time, I see more acceptance of the system. There is less resistance. (5/7)

I have now something objective I can depend on when discussing career review with my faculty. (4/7)

In the educational workshop for faculty development, skills related to teaching styles, problem-based learning, and how to give feedback to the student were considered important objectives. (2/7)

*Support Staff*

The secretary responsible for accumulating the data and producing the VITALS summaries gave the following relevant comments:

I found it easy to produce the graph.

At the beginning, I was chasing students to complete the evaluation form, but now the majority come to me at the end of the clerkship rotation asking for the evaluation forms.

It does not take a lot of effort to compile the data and produce the graph.

## **Discussion**

This preliminary study used a standardized list of nine clinical teaching competencies derived from the literature. Much debate exists regarding the validity of such tools. Abrami and d'Apollonia (1990), have cautioned that "instructional situations vary so much that it is wrong to suggest that all instructional characteristics are equally relevant, and yet this assumption underlies every universal multidimensional rating form". Although content validity was not measured directly, descriptive responses of those faculty and students who reviewed and used the form suggested acceptable matching and face validity between the items on the form and what local notions are of "good clinical teaching".

It has also shown that faculty demonstrated a spectrum of both strengths and weaknesses in clinical teaching, as one would expect. The question is, "What can the organization do with this information?" Giving teachers feedback on their performance and providing opportunities to develop teaching

skills are two important ways of improving teaching. Finucane and Rolfe (1996) and Jarski *et al.* (1990) suggested that evaluation of clinical instruction can help instructors assess their own clinical teaching behaviours and identify and practice educational skills found to be most effective. Carefully constructed and administered evaluation systems can help institutions improve the efficiency and effectiveness of educational programmes and instructors, as well as the quality of graduates (Benjamin & Hamdy, 1992).

A need for the continuation of a formal clinical teaching evaluation system to be followed with appropriate development activities for faculty has been emphasized. Cohen *et al.* (1996) suggested that evaluation of clinical teaching can help maintain the skills of good instructors while improving those of poor clinical teachers.

Although some faculty in this study initially resisted the idea of students evaluating their clinical teachers, in the end the practice was accepted as part of a multifaceted approach to faculty and programme evaluation. There is ample justification for use of students as evaluators. Students spend many hours with their clinical instructors. They have a far fuller opportunity to observe their tutors' abilities than do external, administrative or peer evaluators, whose observations are typically limited to a few "drop in" minutes. Still, a clear picture of faculty performance requires a variety of sources of information. A composite assessment should include self-evaluation, peer evaluation, supervisor evaluation, and student evaluation.

A recent concept, "360 degree feedback", endorses the notion that subordinates (whether they be employees or students) should be accorded the opportunity to provide feedback to their supervisors or teachers as a method of improving performance (Lassiter, 1996). It provides performance data from multiple points of reference, not just one, and it lets us know when we are on or off course. It can fill the gaps that invariably exist between how we see ourselves and how others see us.

In this study, the indicators and visual display were found helpful in compiling information about the quality of teaching and in identifying at a glance the areas of weakness or strength in faculty performance. The method of visually displaying the information leaves little doubt in the mind of the reader regarding the views of the evaluators. The VITALS display enhances the impact of the information provided and, therefore, increases the likelihood that the information will be acted upon.

The display system was found to be cost effective and simple to implement, and to give useful feedback to the faculty and managers of the programme. More objective studies are needed to assess the validity of the VITALS approach in clinical settings, and the reliability of the data resulting from its use.

The system described in this paper suggests a modest, although important, step in the direction of improving student satisfaction with clinical teaching,

and this in turn should improve the quality of graduates. Longitudinal study of the impact of student evaluation of clinical faculty in improving their educational performance would give support to VITALS and is planned.

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