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Procedia Social and Behavioral Sciences 2 (2010) 1316–1320

Procedia
Social and Behavioral Sciences

WCES-2010

Facilitation skills of basic sciences faculty and fresh medical graduates: An AKU experience

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Received October 29, 2009; revised December 7, 2009; accepted January 15, 2010

Abstract

Facilitators are the backbone of the PBL system which focuses on the integrated learning. At BBS, facilitators are both the Teaching Assistants and faculty members. It is observed that students prefer having TAs as their facilitators. Data was collected through standard facilitation evaluation form filled by the students at the end of each teaching module. Our data suggests that there is no difference in the overall facilitation skills of TAs and the faculty members. It appears that in attributes such as ‘asking appropriate question, prioritize learning objectives and identifying misconceptions’, the TAs perform better than the faculty members.

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Keywords: PBL facilitators; faculty; teaching assistants; facilitation skills.

1. Introduction

Keeping in view the new trends in medical education, Aga Khan University Medical College (AKU-MC) shifted in October 2002 from a didactic teaching system for undergraduate medical education to a problem-based learning (PBL) mode of curriculum delivery. AKU-MC decided to run a ‘hybrid curriculum’ where classical lectures have nonetheless been replaced with more interactive Large Class Formats (LCFs), sessions dealing with overviews and concepts. In our system, in the first two years there is more emphasis on using triggers built in to the Clinical Scenarios to learn the Basic Sciences objectives. In the later years, students are required to indulge in problem solving by applying their Basic Sciences knowledge for clinical interpretation and diagnosis.

At AKU-MC cases are constructed by a Module Committee. Its membership is drawn from each of the Basic Sciences disciplines and the relevant clinical faculty. All the facilitators have to go through a two day training

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workshop for the PBL facilitation. This is followed by two mandatory observation sessions with experienced facilitators. Facilitators are provided with comprehensive tutor's guides containing cases, objectives and the learning material. Each case is covered in two sessions of about 3 hours, with a research interval of 2.5 days between each session. Learning process is further reinforced through LCF and laboratory sessions throughout the first two years of the studies.

PBL indeed focuses on self-learning by the students in small group sessions (Bligh, 1995; Kanter, 1998; Bligh, Lloyd-Jones & Smith, 2000). Each session is conducted by a facilitator and the role of the faculty thus changes from lecturer to facilitator. The problem-based and clinically orientated approach is time- and labour-intensive for faculty members, and heavy undergraduate teaching-related commitments presented a new challenge. Various universities have tried to overcome these issues by employing facilitators from diverse background, such as humanities and other faculties (Gilkison, 2003), librarians (Satterthwaite et al., 1995) and senior medical students (Steele, Medder & Turner, 2000). At AKU-MC Department of Biological and Biomedical Sciences (BBS), which includes the academic entities of Anatomy, Biochemistry, Pharmacology and Physiology, created a new position of Teaching Assistant, which we designed for recent graduates of our own Medical College (Khan, Saeed & Frossard, 2005).

Influence of facilitator's background and comparison of the non-clinical academic staff and clinical facilitators in student's performance and satisfaction have been reported previously (Gilkison, 2003; Satterthwaite et al., 1995; Steele, Medder & Turner, 2000; Groves, Rego & O'Rourke, 2005; Davis et al., 1992; Schmidt, et al., 1993; Hendry, et al., 2002). In one of these studies it was concluded that the performance of students in the examination was better when their groups were facilitated by the content experts, compared with the ones facilitated either by the fellow students or non-content expert faculty (Schmidt, et al., 1993).

In this report, we have investigated a general impression that the Teaching Assistants are better facilitators compared with the Basic Sciences faculty members. Our aim was to provide a quantitative evaluation from the students of the facilitators' skill, and to compare the performance of TAs to that of faculty members.

2. Methods

Facilitators of the Department of Biological and Biomedical Sciences at Aga Khan University Medical College (Pakistan) are a heterogeneous group of individuals, with a spectrum of qualifications ranging from PhD, MBBS, to MBBS-PhD. In order to ensure uniformity in their facilitation skills, all the facilitators are systematically introduced to basic educational principles of the PBL strategy, and attend formal PBL facilitation training workshops. In these workshops participants cover four areas: curriculum development, teaching and learning, small group learning with focus on PBL and assessment of the students through feedbacks. At the end of each teaching module, students were given the opportunity to evaluate their facilitator. For this purpose the students were given a standard facilitation evaluation form which they filled anonymously in the absence of the facilitator and submitted it directly to the Curriculum Office. The form had a total of 10 attributes; three were related to the facilitator's inter-personal skills (IPS, see table 1 attribute #1, 6 & 7) and six to the facilitation skills (FS). The 10th attribute pertained to overall facilitation skills. This form was based on the Likert's scale of 1-7; with 1 being unsatisfactory and 7 being outstanding. Facilitators were changed in each module and therefore all students had equal opportunities to be facilitated by a faculty member or a TA. Data from one full academic year 2008-2009 was included in this study. During this period 21 faculty members and 12 teaching assistants facilitated in a total of 31 and 35 modules respectively. Each faculty member facilitated in 1.47 ± 0.5 modules and each Teaching Assistant facilitated in 2.9 ± 1.1 modules. The evaluation forms filled by the students were tabulated by the Curriculum Office into one form for each facilitator, showing average score for each attribute. Data was analyzed using SPSS statistical package and means of various descriptors were compared using Student's t-test. A *p*-value less than 0.05 was considered statistically significant with a confidence level of 95%.

The forms were randomly selected. The study sample consisted of 30 evaluation forms of faculty members and 30 forms from the Teaching Assistants who had facilitated in the academic year 2008-2009.

3. Results

Table 1. Showing attributes and student's rating.

	Attributes	Faculty's Means and S.D.	TA's Means and S.D.
1	Promotes an environment conducive to learning	5.18 ± 1.12	5.64 ± 0.91
2	Guides group by asking questions, when necessary*	5.32 ± 1.2	5.98 ± 0.76
3	Allow group adequate time to think*	5.28 ± 0.98	5.76 ± 0.75
4	Helps students manage group function	5.00 ± 1.45	5.46 ± 0.97
5	Ensures end-of-session reviews of group performance.	5.42 ± 0.99	5.44 ± 0.91
6	Give constructive feedback to students*	4.99 ± 1.47	5.63 ± 0.81
7	Accepts feedback from group non-defensively	5.50 ± 1.22	5.68 ± 0.92
8	Helps students to prioritize their learning issues*	5.23 ± 1.14	5.92 ± 0.73
9	Assists group in identifying misconceptions or learning deficiencies*	5.17 ± 1.29	5.95 ± 0.79
10	Rate the overall facilitation skills	5.31 ± 1.30	5.84 ± 0.87

**p*-value < 0.05

Our results (see table 1) showed no significant difference in the way a faculty member (mean score 5.18±1.12) promotes an environment conducive to learning compared to TAs (mean score 5.64±0.91). However, for attributes of 'guiding the group by asking relevant questions' and 'giving adequate time to the students to think during the PBL sessions' TAs were found to be doing significantly better compared with the faculty members. There was no significant difference in the way the faculty members and TAs helped the students in managing group dynamics. The faculty members and the TAs both ensured end-of-session reviews however; there was a significant difference in the constructive feedback given to the students by TAs (mean 5.63±0.81) compared with the feedback from faculty members (mean 4.99 ±1.47). As part of the two way evaluation, both the faculty members and the TAs accepted the feedback from the students non-defensively. A significant difference (mean 5.92 ±0.73 vs. 5.23±1.14, *p* < 0.05) was found in the facilitator's attribute of 'helping students to prioritize their learning issues'. The Teaching Assistants helped students more in this area compared with the faculty members. TAs were also found to be rated significantly higher than the faculty members in the attribute of 'identification of the misconceptions that the students would face during the PBL session' (mean 5.95 ±0.79 vs. 5.17±1.29, *p* < 0.05). However, students rated both faculty members and TAs equally for their 'overall facilitation skills'.

4. Discussion

The results of this retrospective analysis of student satisfaction with either faculty or TAs as facilitators of PBL tutorials, represents the first evidence that recent medical graduates may be more effective than the established faculty members in PBL small group facilitation skills. Even though our results provide evidence that in students' rating of 'Overall facilitation skills' there was no difference in faculty vs teaching assistant facilitators, in 4/6 attributes related to the facilitation skills, teaching assistants scored significantly higher compared with the faculty facilitators. In the category of 'Overall facilitation Skills' there was no significant difference between TA and faculty facilitators. It is unclear, however, whether this satisfaction would translate into better knowledge and greater acquisition of self-directed learning skills. In a prospective, cross-over study to compare learning outcomes in students who were taught by faculty-led and then student-led PBL facilitations, Steele *et al.*, (2000) found no

difference in student performance on objective assessment even though students gave peer-facilitators slightly higher ratings. Such comparisons cannot be meaningful until TAs are appropriately classified. As they are recent graduates, they are not from their students' peer group and cannot be classified as peer-educators. Within our department they are not ranked as faculty, who have been teaching and undertaking research in their chosen field for many years. However, Neville (1999) argues that advanced student facilitators (to whom TAs are most similar), play the same role as faculty. Indeed, TAs undergo the same training and are advised to maintain the same professional relationship with students that faculty would. TAs may therefore be thought of as junior faculty for the purpose of comparison with studies in the literature.

Based on the results, TAs appear to demonstrate greater facilitator involvement in their tutorials, especially in guiding small student groups through questions, giving constructive feedback and identifying misconceptions. As such, TAs may be described as 'student-directed tutors' who, according to Wilkerson, guide the work of the group and facilitate self-directed learning, which are the hallmarks of effective PBL (Wilkerson, Hafler & Liu, 1991). Faculty may be so wary of falling into their natural directive role that they adopt a completely "hands-off" approach, failing to guide students when necessary (Neville, 1999). In contrast, TAs are unencumbered by previous teaching experience and readily recall the group study skills they used as medical students, which may allow them to more easily foster a cooperative learning environment with their students. The difference between TA and faculty scores may also stem from the role of faculty as content experts. While there is dispute in the literature over the benefit to PBL objectives of having a tutor as a content expert, faculty may find it difficult to avoid over-directing facilitations and failing to cover all the case learning objectives, especially when covering a case where the faculty member is an expert (Hay & Katsikitis, 2001; McLean, 2003). In contrast, just issued from broad medical training, TAs are likely to be better able to balance basic science and clinical applications. Wilkerson's study showed that students preferred physicians to PhD tutors for precisely this reason (Wilkerson, 1994).

Lack of motivation towards the implementation of the PBL program may also be a reason for the difference in performance between faculty and TAs. In a survey of PBL facilitation skills and roles, McLean (2003) asked faculty for their motivation for undertaking PBL facilitations. Although 67% believed in the PBL philosophy, 61% claimed to undertake facilitation for promotional purposes. PBL requires a re-imagining of the teacher's role and if this is done inadequately, faculty will not be convinced that PBL is worth the inconvenience and additional time and resources needed to make facilitations successful. In addition, faculty may only reluctantly shed their old role as the primary source of knowledge for their students, which carries with it no small measure of status and prestige. In addition to student evaluation of facilitator performance, it may be useful to undertake frequent surveys of faculty satisfaction with their role within the PBL curriculum and address any challenges that might impede the successful implementation of their role as facilitators.

While faculty, TAs and students might find their initial exposure to PBL daunting, over time facilitator and student performance is expected to improve (McLean, 2003). This is due to facilitators maturing in their roles and increasing their facilitation skills. In addition, the structure and organization of the PBL training programme also improves over time from lessons learned from student and facilitator feedback. While faculty ranks remain relatively stable over time, TAs change annually as each batch moves on to post-graduate training. Interestingly, however, both TAs and faculty benefit from the improvement in organization, facilities and training that have occurred over the past few years in our PBL programme. The observed difference between faculty and TA ratings, probably due to the reasons mentioned above, remained consistent over many years of PBL at AKU.

The results of our study are limited by the absence of any objective assessment of whether increased satisfaction with a facilitator translates into better knowledge and self-directed learning skills. Such a study is necessary to show that students are not only satisfied with TA facilitations but that their self-directed learning skills and knowledge acquisition are also better through TA facilitations. In order to identify the reason for the significant and consistent difference between TA and faculty ratings, it is necessary to survey both groups and identify differences in approach, attitude and aptitude to facilitating PBL tutorials.

5. Conclusion

In summary, even though student's rating for 'Overall facilitation skills' of the faculty members and the TAs is not significantly different, students rate TAs higher than faculty members as facilitators for PBL's small student group sessions. TAs seem more apt to ask leading questions, to spot misconceptions during discussions, and to

direct discussions in a way that allows students to identify misconceptions themselves, without the need for explicit interjection. This demonstrates the success of the TAs model to alleviate problems related to number of facilitators required to facilitate simultaneously in the first two years of the MBBS programme.

Acknowledgement

We would like to thank Mr. Sheheryar Kabraji for editing the discussion of our paper and for his valuable critique. We are also grateful for the administrative assistance provided by Ms. Gulafroze Fazli and Mr. Nooruddin Farishta.

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