Tutors' performance evaluation: a feedback tool for the PBL learning process

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SUMMARY *In the implementation of problem-based learning (PBL) programmes, increased attention is being paid to the role of teachers as tutors. The purpose of this article is to describe the different stages of the tutors' evaluation process within a single discipline using a PBL programme, and to present the results of their performance evaluation in two academic years. A checklist (with items corresponding to the tutor's tasks in PBL) was applied. This tool was considered both by students and by tutors as an excellent formative instrument and an essential framework for monitoring and assessing the pedagogical process. Moreover, the findings of this study confirm the existence of different tutoring styles valued by the students and also the importance of continuous feedback in the improvement of the teachers' pedagogical performances.*

Introduction

In a problem-based learning (PBL) curriculum the tutor is one of the three cardinal elements in the PBL process, along with the students and the problems (Rangachari, 1991). Therefore, tutors should know what tasks they are expected to master in order to accomplish their role (Barrows, 1985). The identification of the tutors' competences and the training of specific tutoring skills, together with the evaluation of the tutors' performances, are key features in any PBL programme.

This paper, presented in abstract form at the AMEE Conference in Linköping (Rosado Pinto *et al.*, 2000), aims at describing the tutors' evaluation process within the discipline of Pathophysiology of the Faculty of Medical Sciences in Lisbon, as well as presenting the results of the tutor's performance evaluation in two academic years (1997–98 and 1998–1999). The tutors' training programme prior to their pedagogical practice and the monitoring process of the tutors' performances will also be mentioned.

This study was carried out in the particular context of the only discipline using problem-based learning (PBL) in the third year of a 6-year traditional lecture-oriented medical curriculum. This PBL approach, applied since 1991, included the use of clinical simulations as learning triggers and small-group teaching sessions with the assistance of a tutor (Rendas *et al.*, 1998). These sessions were part of the practical course, together with laboratory demonstrations.

Throughout each year, groups of 10 students (in a total class of 90) analysed six complete cases covering different organs/systems. The PBL sessions, based on computer simulations (PBLS), occurred twice a week for 2 hours, with self-learning periods in between, each case lasting for 2½ weeks (Rendas *et al.*, 1999).

The role of the tutor was to help the students to synthesize the information collected on each case, to identify learning needs and learning resources and to orient them in their self-learning strategies. To prepare the appointed tutors of pathophysiology for their tutor role, a training programme was designed, developed and evaluated in close collaboration with the Department of Medical Education. The programme followed a step-by-step strategy including, first (1990–91), group discussions on the need to change the medical curricula to cope with the continuing advances of medical knowledge and on the content overload of the undergraduate medical studies. Other important subjects of discussion were the specific characteristics of adult learning and PBL as an alternative pedagogical methodology (Barrows, 1985, 1988). A second phase (1991–93) aimed at training specific competences of a PBL tutor and included several preparatory workshops focusing on PBL, on the tutorial process (the tutorial method and the role of the tutor) and on self-learning activities. A third step focused on the design and application of several educational materials, including a learning guide for the students, as well as the design of monitoring and evaluation tools. The performance of the tutors was monitored, from the beginning of the project, by one of us, as an external observer from the Department of Medical Education.

Methods

Target population

Ninety students in each of two academic years (1997–98 and 1998–99) participated.

Instrument

In order to collect the students' opinions about their tutors' pedagogical competences, a checklist was applied for the evaluation of the tutors' performance. The evaluation tool used was based on the 'Tutor Evaluation Questionnaire' applied by Dolmans *et al.* (1994) and our main objectives were essentially formative. Thus, the questionnaire was not

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used as a rating scale, but rather as a checklist (Appendix 1).

The use of this checklist aimed at:

- developing teachers' awareness of their teaching style (by individually providing feedback about their performance);
- involving the students in the pedagogical process (by giving them a feedback role);
- improving teaching behaviour (by identifying positive pedagogical features or individual training needs) and involving the teachers in their improvement process;
- giving support for the change in terms of educational advice (helping the teacher to change from the role of provider of information to the role of facilitator and guide).

As regards the checklist items, we kept the questions directly related to PBL teaching tasks and did not use any item concerning either opinions on the tutor's understanding of subject-matter knowledge or on his/her motivations. Moreover, we also decided to keep the two open questions of Dolmans's evaluation questionnaire, i.e. those dealing with the teachers' behaviours perceived as pedagogically more effective and with the advice students would like to give their teachers for future tutorials.

As regards item content validity, students and tutors were invited to criticize the questionnaire during the academic year 1996–97, which was taken as a trial year. During that year the content of several items was discussed with the students (in item VI, for example, the different meanings of 'main' and 'minor' issues led to the discussion of the learning objectives of each problem). We also included another item (IV) concerning the bibliographic advice given by the tutors, because we aimed at developing this specific pedagogical behaviour.

Data collection

We collected data during three academic years (1996–99). Students were invited to fill out the questionnaires after each case during the first two years and after cases 3 and 6 in the third year. Given the trial period in the academic year of 1996–97, the corresponding answers were left out of this study. In order to compare data, we will refer to the answers given during the two last years after the third and sixth cases. The overall response rate was 100%.

Six tutors were involved in the project (all medical doctors: one head of department, two assistant professors, one full-time lecturer, two invited lecturers). Three of them were responsible for two groups each and the others for one group only. They all participated in the evaluation project and were all given feedback on the students' responses. The feedback was given individually by the educationist from the Department of Medical Education during an interview with the tutor.

We organized the answers to our closed questions (10 items) by frequency of each behaviour perceived in the performance of each tutor.

For the open questions, we first performed a qualitative content analysis of the answers; this consisted of reading the sentences written by the students and organizing their opinions into emerging descriptive categories (Harden,

1986; Smith & Noblit, 1989; Haggerty, 1996). Finally we carried out a quantitative analysis of the frequency of different quotations (Virtanen *et al.*, 1999). As this evaluation was implemented in a continuous way, we were able to perform an immediate analysis of the data after each case. This procedure allowed the tutors to have feedback in time for the introduction of changes in the following sessions.

Results

Information on the pedagogical performance of the six tutors was collected twice, during two consecutive academic years. This is summarized in Figure 1.

Some skills were identified in all the tutors by at least 50% of the students in each group: item II 'The tutor promotes a careful analysis of the problem'; item III 'The tutor promotes the generation of specific learning needs, useful for the self-study period'; item VII 'The tutor contributes to a better understanding of the main issues', item VIII 'The tutor promotes synthesis moments during the analysis of the problem'; item IX 'The tutor reveals interest for the students' learning process'.

Some of the tutors' behaviours were not perceived at all by the students. This applied to items VI, X and IV (see Figure 1). In detail: item VI, for tutors 1 and 3 ('The tutor assists in distinguishing main issues from minor issues') in the academic year 1997–98; item X for tutor 3 ('The tutor stimulates group dynamics') in the academic year 1997–98. Item IV ('The tutor gives useful bibliographic advice') was never indicated as being present in the performance of tutor 6.

There was only one tutor (tutor 2) whose pedagogical performance was perceived by at least 50% of the students as exhibiting the 10 tutorial skills all the time.

As can also be seen in Figure 1, the students identified positive changes in their tutors' performances either within the same year (item IV for tutors 4 and 5, for example) or from one year to the following (item VI for tutor 1 and item X for tutor 3).

As regards teaching characteristics, there were differences in teaching styles. Some tutors (for example, 1 and 2) seemed to value the students' learning process, i.e. items II, III and VIII were referred to by the majority or even all of their students. On the other hand, in another tutor's performance (tutor 5), the students valued the tutor's caring about the learning atmosphere and the facilitator role (items IX and X), and the support given by tutor 3 in terms of the learning resources (item IV) was rated as very important.

The answers to the open questions, more than confirming the opinions expressed in the closed items (the students valued not only the cognitive aspects of the learning process, but also the affective side of the learning environment), revealed other positive pedagogical behaviours connected with the tutors' personality such as enthusiasm, sense of humour, non-intimidating behaviour, bringing his/her own professional experience to the PBL sessions (this last quality was mainly identified in the clinicians working in the Pathophysiology Department).
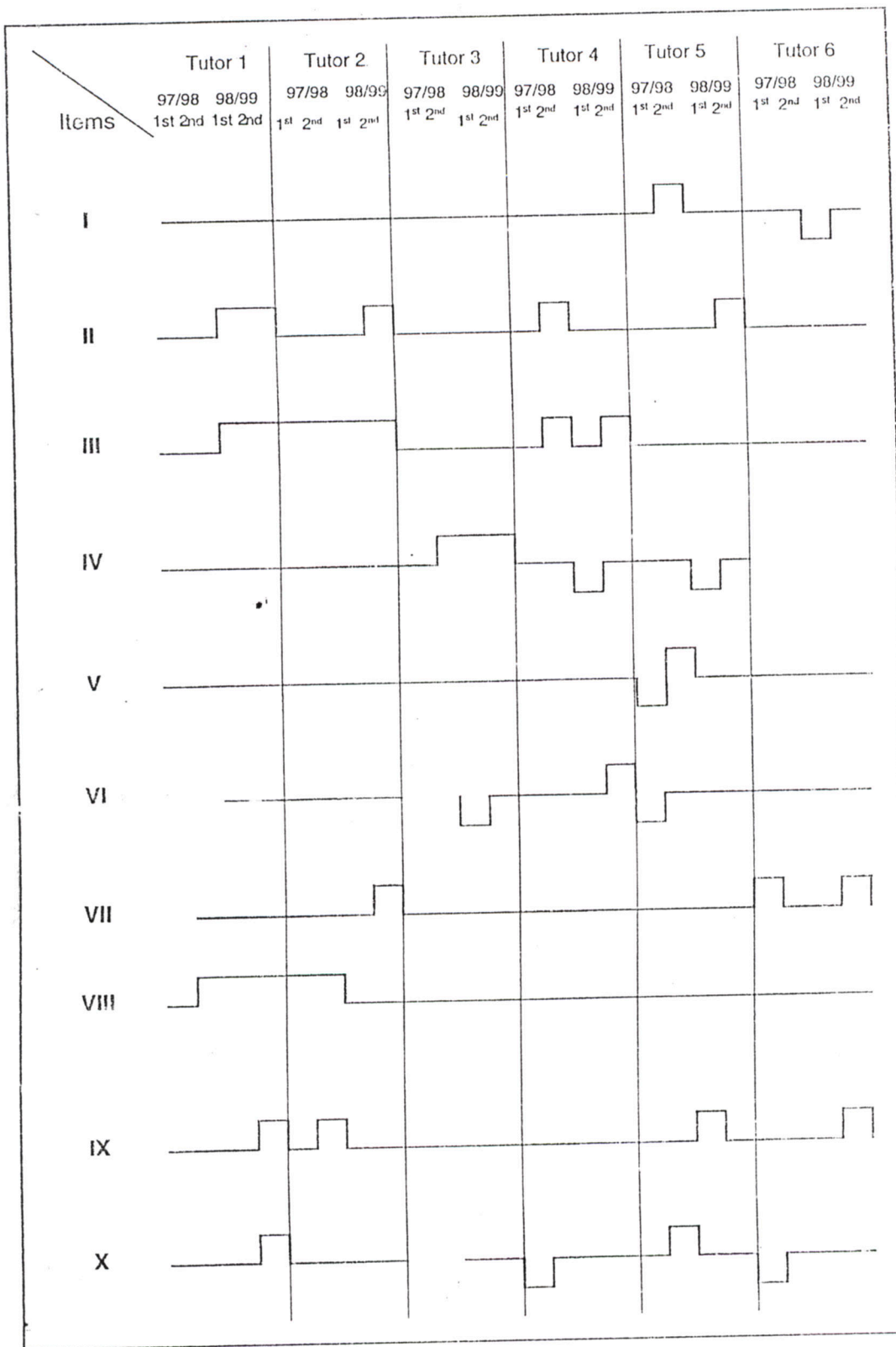
Figure 1. Pedagogical performance of the six tutors.

Notes: Items I to X—see Appendix 1. Tutors 1 to 6—the six tutors who were evaluated. 1997–98 an 1998–99—the two academic years during which data were collected. 1st and 2nd—the two evaluation moments (after case 3 and case 6). Void: Tutors' behaviours which were not mentioned by the students.

⊔ Behaviours mentioned by less than 50% of the students.

— Behaviours mentioned by 50% of the students.

⊓ Behaviours mentioned by more than 50% of the students.

Discussion

The main objective of our work was to evaluate the teachers' tutorial performances, in order to improve their pedagogical skills and to facilitate change in the pathophysiology PBL curriculum.

In Portugal the quality of teaching is not taken into account either as a determining factor for career promotion or for funding of medical schools. In this context, the objective of our work was mainly formative. Furthermore, we wished to develop the students' involvement and commitment to the evaluation process as feedback resources and as members of a team. Moreover, and as regards the tutorial performances, we wanted tutors to be aware of their own pedagogical styles (Schön, 1983). Thus, rather than prescribing a single way of being a good tutor, we aimed at improving the tutors' educational role (Harden, 1992) by helping them to identify positive or less positive factors in their performance and by discussing different ways of changing.

As an evaluation tool we decided to adapt a questionnaire apparently close to our aims (Dolmans *et al.*, 1994). We selected the closed items directly connected with objective PBL tutor performances and excluded those which could reflect broader subjective opinions on the tutors, i.e. motivations or understanding of the subject matter covered by the case, for example. Our options were decided by the fact that teachers' pedagogical evaluation performed by the students is not yet a regular practice in our school, and we wished to separate the closed items from the open ones where the students could have the opportunity to freely express their opinions on the whole pedagogical process.

As to the students' answers, all the tutors in pathophysiology seemed to display a common characteristic: the importance given to content and to the learning process (there were several items related to these domains which were identified in all the tutors' pedagogical behaviour). These findings are consistent with previous reports from other medical schools using PBL on a large scale and where the tutors still act as group leaders (Des Marchais & Chaput, 1993). This can also be interpreted in the context of the implementation of a PBL curriculum in a single discipline, as is the case of pathophysiology, in which teachers may have felt the need to show good results in terms of content knowledge of their students.

However, our students valued different positive tutors' performances. This fact seems to indicate that different student groups valued different styles of tutoring and that there is not a single best way to be a good tutor (Dolmans *et al.*, 1994; Schmidt & Moust, 1995). Thus, some students valued the tutor's subject-matter knowledge, while others emphasized his/her personal qualities and commitment to the students' learning process. Furthermore, and as regards the most valued tutor (tutor 2 had 50% or more of the positive answers in every item during the two years) our students, like other PBL students, seemed to appreciate tutors who can balance their effort between promoting learning and creating a good learning environment, facilitating the functioning of a small group and stimulating motivation (Des Marchais & Chaput, 1993; De Grave *et al.*, 1999; Neville, 1999).

In the open questions the students underlined the educational role of the tutor and confirmed the need for pedagogical orientation both in the cognitive and in the affective domains. Furthermore, we found other qualities judged by the students to be very important, such as the capacity to bring the everyday doctor's life to the PBL sessions, by giving examples and sharing professional experience. This clinical experience was found in the two tutors who are clinicians working part-time in the department. On the other hand, some criticism was expressed on their lack of availability between sessions. These opinions pointed out that students expected not only commitment during group work but also some follow-up effort between sessions—helping them with the learning resources, for instance.

The less positive aspects of the tutors' performances were analysed during several discussion sessions within the whole group of tutors throughout the year. All the tutors considered that feedback and discussion played an essential role in the improvement of their pedagogical performance, this being one of the most important characteristics of the project. In fact, the students' opinions had mainly a formative role and were constantly introduced in the pedagogical process by the feedback given to the tutors by the medical educator. Thus, as stated above, there was a great deal of pedagogical improvement after the first collection of the students' opinions. Teachers accepted and introduced changes after receiving feedback, confirming what has largely been stated about teacher education as a form of adult development, a process of 'becoming' rather than merely a process of 'educating someone how to teach' (Zeichner, 1983). On the other hand, occasionally teachers did not agree with their students' opinions and were able to discuss with them the reasons for specific behaviours, giving space in their sessions for the discussion of the PBL methodology and of the tutor's role and for the sharing of educational objectives. Thus, feedback also promoted opportunities for discussion and for negotiation (or re-negotiation) of the 'educational contract' (Foulquié, 1971).

In item VI ('The tutor assists in distinguishing main issues of lesser relevant themes'), absent in two of the tutors in the first year, tutors could not understand the reason for their students' responses. After interviewing the students, we considered that the concepts of 'main and minor issues' were not explicit enough, mainly because some students considered the main or minor importance of the learning issues related not to the solution of the problem but to the core curriculum issues. This fact was discussed by the tutors with their groups, and it was decided that more attention should be given to the learning issues raised in each session and to the discussion of its importance for the learning process. Moreover, this reflection led to the revision of the more important learning objectives for each clinical problem.

Regarding other effects of the evaluation process, our students referred to the involvement and commitment of all the participants as playing an important role in curriculum innovation and eventually in institutional change. In fact, the whole project involved a great deal of group work. The design of the evaluation materials, their application, the data collection and the immediate feedback given to

the teachers were possible because there was a team working for the same purpose with different professionals (tutors, students, educator) playing specific and differentiated roles. This group work confirmed the emphasized importance of team work and the consequent sense of ownership in any staff development project (Broomfield & Bligh, 1997).

As to the monitoring and feedback process, tutors valued the support of the Department of Medical Education and specifically mentioned the importance of pedagogical training prior to their action, as stated by others (Schormair *et al.*, 1992; Holmes & Kaufman, 1994; Olmesdahl & Manning, 1999).

Finally, we would like to underline that our study describes a single-discipline innovation and that our results reflect the natural limitation of small-scale research. Although aware that it is not possible to generalize any of our results to a larger scale implementation of PBL, we hope to have contributed to a better understanding of specific tutoring profiles and underlined the improvement of tutoring expertise in the context of a systematic monitoring and feedback process. This is particularly relevant at a time when PBL is being applied on a large scale, thus reinforcing the need for detailed preparation and follow-up of tutors' activities as a key issue in the success of such innovations.

Acknowledgements

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Appendix 1

Pathophysiology Department

Tutor's evaluation questionnaire

Case: _____   Tutor: _____

Date: _____

Indicate with ⊠ *if your tutor demonstrates the following behaviours during the tutorial sessions:*

I. The tutor stimulates active participation of all students.

II. The tutor promotes a careful analysis of the problem. ☐

III The tutor promotes the generation of specific learning needs, useful for the self-study period. ☐

IV. The tutor gives useful bibliographic advice. ☐

V. The tutor, after the self-study periods, promotes the application to the problem of the acquired ☐
knowledge. ☐

VI. The tutor assists the students in distinguishing main issues from minor issues.

VII. The tutor contributes to a better understanding of the main issues. ☐

VIII. The tutor promotes synthesis moments during the analysis of the problem. ☐

IX. The tutor reveals interest in the students' learning process. ☐

X. The tutor stimulates group dynamics. ☐

XI. Indicate other tutor's behaviours that you have considered to be important for the learning process. ☐

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XII. What advice would you give your tutor for future tutorials?

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Thank you

Source: Adapted from Dolmans et al. (1994).