Difficult incidents and tutor interventions in problem-based learning tutorials

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CONTEXT Tutors report difficult incidents and distressing conflicts that adversely affect learning in their problem-based learning (PBL) groups. Faculty development (training) and peer support should help them to manage this. Yet our understanding of these problems and how to deal with them often seems inadequate to help tutors.

OBJECTIVES The aim of this study was to categorise difficult incidents and the interventions that skilled tutors used in response, and to determine the effectiveness of those responses.

METHODS Thirty experienced and highly rated tutors in our Year 1 and 2 medical curriculum took part in semi-structured interviews to: identify and describe difficult incidents; describe how they responded, and assess the success of each response. Recorded and transcribed data were analysed thematically to develop typologies of difficult incidents and interventions and compare reported success or failure.

RESULTS The 94 reported difficult incidents belonged to the broad categories 'individual

student' or 'group dynamics'. Tutors described 142 interventions in response to these difficult incidents, categorised as: (i) tutor intervenes during tutorial; (ii) tutor gives feedback outside tutorial, or (iii) student or group intervenes. Incidents in the 'individual student' category were addressed relatively unsuccessfully (effective < 50% of the time) by response (i), but with moderate success by response (ii) and successfully (> 75% of the time) by response (iii). None of the interventions worked well when used in response to problems related to 'group dynamics'. Overall, 59% of the difficult incidents were dealt with successfully.

CONCLUSIONS Dysfunctional PBL groups can be highly challenging, even for experienced and skilled tutors. Within-tutorial feedback, the treatment that tutors are most frequently advised to apply, was often not effective. Our study suggests that the collective responsibility of the group, rather than of the tutor, to deal with these difficulties should be emphasised.

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INTRODUCTION

The problem-based learning (PBL) model includes the use of case problems, small-group tutorials and self-directed learning activities. It is designed to help students become more effective problem solvers, better communicators and independent learners.^{1,2} In medical training, this approach emphasises student-centred active learning with clinical cases that stimulate self-directed learning and subsequent integration and synthesis. The tutor's role in facilitating the PBL process is to provide both cognitive and logistic support to create a stimulating learning environment supported by optimal group dynamics.^{3,4}

However, not all PBL groups establish such an ideal environment and some even become highly dysfunctional. Commonly reported problems include the presence of 'quiet' students,^{5–7} chronic tardiness or absenteeism,^{7–9} dominant behaviour,^{5–7,9} and lack of motivation or commitment, displayed by individual students^{5–7,9} or the group.⁸ However, a common taxonomy of difficult incidents has not emerged from these studies, possibly as a result of differences in the definitions of a 'difficult incident', methods used to collect data or informants, whether students or tutors.

Recommended responses to tutorial dysfunction and conflict include the training of tutors and students in a variety of interpersonal skills.^{5,8,10,11} However, data on the specific strategies used by tutors (such as redirecting discussion, encouraging quiet students, giving direct feedback to individuals or the group, asking the group to offer solutions, making reference to established group norms or ground rules, holding private meetings with 'students of interest', and obtaining advice from or mediation by an outsider) and the degree of success of such strategies are scarce. Such strategies have not been very effective when used to resolve common incidents such as those involving the quiet, dominant or persistently tardy and absent student.⁷

The University of British Columbia (UBC) MD programme is graduate-entry and consists of 4 years of training in which there is a basic science emphasis in Years 1 and 2 of a hybrid PBL curriculum. Tutorial groups of eight students meet three times a week per case in thematic blocks of 4–5 weeks. Tutors have the usual tasks⁴ and Barrows' 'primer'¹² is invoked as a guide. In addition, and probably relevant to understanding the context of our study, tutors are urged to give formative feedback and required to provide summative categorical evaluation ('does not meet requirements', 'requires improvement', 'meets requirements', 'exceeds requirements') with narrative comments based on detailed criteria for the three broad performance areas of *preparation*, *participation* and *professional behaviour*. Tutors do not formally evaluate the content knowledge of the students. Problem-based learning tutorials are also considered to be a forum in which students can learn the personal and interpersonal skills that serve as a foundation for the professional behaviours expected in the clinical years.

All tutors receive training (theoretical and practical, didactic and experiential) before they begin to tutor. They subsequently are observed in action by peers and time is devoted each week during a tutor meeting to discuss the PBL cases and any problems they may have. Ongoing tutor support is offered and tutors are encouraged to share their problems and to seek guidance from peers and faculty development specialists.

Nevertheless, our anecdotal observations are that process and interpersonal difficult incidents are often unresolved by a variety of recommended interventions. We reasoned that a better understanding of the nature and frequency of these difficult incidents might be gleaned from the experience of our most knowledgeable and successful ('expert') tutors, and that this would help us to offer better advice and training and lead to a systematic classification scheme that might serve as a foundation for further investigation.

METHODS

Problem-based learning tutors were invited to participate if they fulfilled selection criteria that required them to have: active tutoring activity (in the current or previous academic year); experience (of tutoring at least three blocks of 4-5 weeks) and expertise (obtained consistent 'meets requirements' or 'exceeds requirements' comments on anonymous student evaluations at the end of every block and displayed PBL know-how as judged by WG, who had chaired tutor meetings for a decade). A total of 64 tutors (about 10% of all faculty staff who had ever tutored) were contacted by e-mail. Five did not respond and 30 agreed to be interviewed. Several of those who declined stated that they did not experience difficult incidents in PBL tutorials; others had personal or scheduling reasons for not taking part.

Among participants, 17 were male and 13 female. All had a background in basic science; 13 were active basic science researchers and 10 were practising clinicians. They had tutored an average of 16 blocks (range 3–45) of PBL tutorials over an average of 7 years (range 1–9 years).

All participated in semi-structured interviews consisting of open-ended questions asking them to:

- 1 identify and describe difficult incidents;
- 2 describe specific interventions used in response, and
- 3 assess the success of each intervention.

A script for these interviews was piloted, refined and used by all interviewers. The script allowed the interviewers to probe for clarification and elaboration; it also allowed for redirection to the main questions if necessary. A difficult incident was defined as: 'any event, experience, episode, etc. encountered during a PBL tutorial that: had a significant adverse impact on any aspect of the tutorial process; changed your views of what constitutes the best PBL practice, or forced you to change your approach to your role as a PBL tutor'. Interviews were conducted by one of the co-authors (PK, CG or SK) and lasted about 1 hour. All interviews were audiotaped, transcribed verbatim and analysed thematically.¹³

Each transcript was read several times by the interviewer and the data coded and analysed to search for and identify themes (categories) and sub-themes (types) within them. This led to separate preliminary typologies of difficult incidents and tutor interventions. Two of the research team (PK and WG) reviewed the transcripts and findings to reach consensus on the final format of typologies. Each response to a difficult incident consisting of one or more specific interventions was deemed overall successful or unsuccessful based on the subjective assessment provided by the tutor during the interview. The average success rate of tutor responses to all specific difficult incidents within each type was calculated and the types were assigned to one of three groups: 'successful' ($\geq 75\%$ average success rate); 'moderately successful' (50-74% success rate), or 'unsuccessful' (< 50% success rate). These ranges are arbitrary but roughly correspond to plain language use of the frequency adverbs 'usually', 'often' and 'sometimes'. The description is intended to be meaningful for tutors: if an intervention worked no better than chance (50% of the time), then it would probably not be deemed a preferred or 'successful' strategy.

RESULTS

There were 94 difficult incidents reported (average three per tutor, range 1–8). Two categories of difficult incidents emerged from the analyses of interview transcripts, identified as: 'individual student' and 'group dynamics'. The category 'individual student' included seven types consisting of 40 specific difficult incidents; 'group dynamics' included five types consisting of 54 difficult incidents.

Individual student category

This category included types of incidents that affected the participation or performance of individual group members, but were not reported to have an important effect on group dynamics; this was consistent with limited 'hindrance to learning' as reported by students for similar problems.⁷

- 1 *Quiet.* This type covered one-third of all difficult incidents in the 'individual student' category and involved students described as 'quiet', 'very knowledgeable but shy', 'terrified of group work' or 'very uncomfortable talking in the group'.
- 2 *Tardy or absent.* The incidents in this type involved students who were 'chronically tardy', 'failed to excuse frequent absences' or had 'punctuality issues'.
- **3** Affected by personal matters. Examples involved students who underperformed or behaved unusually ('unexpectedly broke down in tears and left the PBL room') as a result of an adverse event in their personal lives such as the death of a close relative, serious car accident or clinical depression.
- 4 Underachiever. These students failed to meet the accepted standards for quality of contributed information. Examples included students who 'underperformed and had difficulty coping due to lack of background', or who were 'disinter-ested, too busy with personal schedule'.
- 5 *Relying on anecdotal or questionable information.* These students 'frequently presented incorrect information' or 'used questionable sources and provided anecdotal information as factual'.
- 6 Lacking focus on basic science. This sub-theme covered three types of student, including students who 'concentrated on clinical concepts', 'had strong focus on alternative medicine and social aspects of health care', or who were 'compassionate with excellent interpersonal skills, but failed to meet expectations in discussing basic science concepts'.

7 *Challenged by tutorial process.* A single incident of this type involved a student who 'was completely overworked by the attempts to thoroughly address all learning issues'.

Group dynamics category

A little more than half of the difficult incidents belonged to this category. They involved either one or more individuals or the entire tutorial group and, on several occasions, the tutor.

- 1 Tensions between a student or group and tutor. Incidents in this type were described as being very challenging to the tutor. For example, a student or group demanded that a tutor be a passive observer or that a tutor change his or her style of facilitation or 'way of doing things'. Several incidents involved groups' insistence on starting tutorials up to 30 minutes late, reducing the length and number of tutorials or refusing to provide meaningful group feedback. The remaining incidents involved individual students making remarks to the tutor that were strong and inappropriate, harshly critical, or included accusations of inappropriate behaviour or attempts to pressure the tutor to boost end-of-block grades.
- 2 Student's inappropriate behaviour or comments. Such incidents involved behaviours or remarks made by a single group member, where, for example, '[an] angry and disruptive student [was] determined to communicate his or her dissatisfaction with [the] medical curriculum', '[a] student's Palm Pilot[®] addiction interfered with [the] group's ability to effectively develop learning issues', 'rude comments and demeaning behaviour intimidated and negatively impacted the level of participation of some group members', and '[the] content expert was clearly disinterested in active participation and very impatient'.
- 3 Dominant student. One or more dominant students in a group impaired the tutor's ability to effectively facilitate the learning process. Most interviewees attributed the behaviour to students' internal motives or traits, describing such students as '[a] real know-it-all', 'overwhelming, could explain everything', 'really straightforward', 'needed to lecture to prove that they had done their PBL research', 'keen to present irrelevant information to disguise insecurity', and 'very authoritarian, often provided questionable information'.
- 4 *Tensions within the group.* Incidents in this type involved two or more students or the entire group. Comments included: 'two very vocal

students hated each other, didn't get along'; 'group consisted of hesitant, timid, trying-tomaintain-low-profile students', and 'one really bad group; one student required to be at the centre of attention, two of his friends always backed him up, [the] remaining five students were extremely quiet'.

5 Difficulties with the tutorial process. Group dynamics were sometimes adversely affected by challenges inherent in the PBL tutorial process. Comments included: '[the] student insisted on endless discussions, often about matters beyond the scope of the tutorial, as a result of presuppositions regarding a proper tutorial format'; 'students in [an] otherwise brilliant group went up to the board to draw diagrams straight from the lectures in order to please the tutor', and 'group presented confounding information'.

The overall success rate of all responses was 59% (55/94). Among unsuccessful responses, 33% comprised a single unsuccessful intervention and 67% consisted of multiple unsuccessful interventions. The success rate of responses to each type of difficult incident varied from 23% to 100% (Table 1). Overall,

Level of success	Type of difficult incident*
Successful (≥ 75%)	Underachiever
	Lacking focus on basic science
	Challenged by tutorial proces
	Performance affected by personal matters
	Difficulties with tutorial proce
Moderately successful (50–74%)	Student's inappropriate
	behaviour or comments
	Relying on anecdotal or
	questionable information
	Dominant student
	Quiet student
Unsuccessful (< 50%)	Tensions within the group
	Tardy or absent
	Tensions between student or
	group and tutor

* Types of difficult incidents from the 'group dynamics category are denoted in italics

Table 2 Typology and frequencies of specific interventions				
Category	Туре	Frequency		
Tutor intervenes during tutorial	Gives feedback to group	32		
	Gives feedback to student in group setting	18		
	Asks for feedback from group or student	15		
	Intervenes in tutorial process	8		
	Does not intervene, allows group to self-regulate	8		
	Obliges or gives in to demands	3		
	Total	84		
Tutor gives feedback outside tutorial	During private one-to-one	39		
	During mid-block evaluation	4		
	Gives poor mark at mid-block evaluation	3		
	Via e-mail	3		
	Total	49		
Student or group intervene	Group and tutor provide feedback or intervene	4		
	Individual student initiates feedback	3		
	Group initiates feedback or offers support	2		
<	Total	9		

the responses were successful, moderately successful and unsuccessful in 25%, 44% and 31% of all reported difficult incidents, respectively.

A total of 94 responses covered 142 specific interventions (average 1.5 interventions per incident, range 1-4). There were three categories of intervention: 'tutor intervenes during tutorial'; 'tutor gives feedback outside tutorial', and 'student or group intervene' (Table 2). Interventions in the first two categories were initiated by the tutor. Interventions in the last category were initiated by the group or individual students, with or without the participation of the tutor. The success of tutor interventions is shown in Table 3. Each of the three 'successful' types belonged to a different category of intervention. However, four of five 'unsuccessful' types were from the 'tutor intervenes during tutorial' category. As most types of intervention had low frequencies $(n \leq 4)$, the overall success rates of the three categories of interventions when solving the two categories of difficult incidents were combined (Table 4).

DISCUSSION

This study indicates that even highly experienced and most capable tutors encounter difficult incidents in their PBL tutorials. In the 'individual student' category half the incidents concerned 'quiet' or

Table 3 Types of in	Table 3 Types of interventions and level of success		
Level of success	Type of intervention		
Successful (≥ 75%)	Group initiates feedback or offers support Tutor does not intervene, allows group to self-regulate Tutor gives feedback during mid-block evaluation		
Moderately successful (50–74%)	Group and tutor give feedback or intervene Individual student initiates feedback Tutor gives feedback via e-mail Tutor gives poor mark at mid-block evaluation Tutor intervenes in tutorial process		
Unsuccessful (< 50%)	Tutor gives feedback during private one-on-one Tutor gives feedback to group Tutor asks for feedback from group or student Tutor obliges or gives in to demands Tutor gives feedback to student in group setting		

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Category of intervention	Category of difficult incidents			
	Individual student	Group dynamics		
Tutor intervenes during tutorial	30% (7/23)	49% (30/61)		
Tutor gives feedback outside tutorial	62% (18/29)	40% (8/20)		
Student or group intervene	83% (5/6)	33% (1/3)		

Table 4 Success rates of different categories of interventions when used to solve different categories of difficult incidents

'chronically tardy or absent' students, which is consistent with high occurrences of both these student types in previous reports. $^{6-9}$

In the 'group dynamics' category, we found detrimental factors similar to those reported previously,¹⁴ including 'tutor-associated problems', such as 'tutorial domination' or 'lack of proper knowledge regarding PBL approach', and 'student-associated problems', such as 'negative attitude towards each other' and 'unresolved personal conflict'.

However, among 'tutor-associated problems', none involved students remarking about the content expertise of the tutors. This is by contrast with reports in which students referred exclusively to their 'frustration with tutors who are not content experts'.⁹ The participants in this study were successful in responding to incidents involving difficulties with tutorial processes, which is again consistent with the findings of prior work.⁷ Our results also indicate that tutors were moderately successful in dealing with dominant students, contrasting with findings in an earlier report that both tutors and students dealt with dominant students ineffectively.⁷

By contrast with often unsuccessful tutor-initiated interventions, most of those implemented by the group or individual students were successful or moderately successful, but their frequencies were low. These results may indicate a lack of awareness by both tutors and students of the importance of their collaboration in dealing with difficult incidents. According to Barrows:¹²

'If there are difficulties that develop in the function of the group – personality clashes, an unproductive session, poor morale, whatever – the students have the responsibility to identify such states of affairs.'

It has also been suggested that students should develop a sense of ownership of the conduct of the tutorial and be willing to address conflicts without prior prompting from the tutor.^{15,16} As some authors have questioned the notion that effective PBL groups are those in which conflict is minimised or prevented,^{17,18} it appears important to provide tutors and students with the skills required to learn from conflict, rather than to avoid it. Instead of advocating for strategies to prevent conflict, curriculum planners and PBL tutor trainers might emphasise a 'student-centred solution to group problems'^{11,17,19} and the responsibility of all members of the group in dealing with difficult incidents. Tutors should focus less on intervening to solve problems and more on creating environments in which students feel invited to intervene effectively, and less on eliminating conflict and more on helping students develop skills to learn from conflict and maintain group cohesion through it.

Equipping students with the skills they need to learn from conflict is no simple matter. Problem-based learning tutorial groups in the medical school at UBC, and elsewhere,⁴ develop 'ground rules' in the early going. Ground rules typically cover issues such as mutual respect, equitable participation, punctuality and attendance. These are important, but they do not address the skills students need to learn from conflict. The present research and earlier work^{4,17} suggest that more could be gained by asking newly established PBL groups to address questions such as: What can you do to ensure that you learn from conflicts and disagreements? How can you help everyone feel that it is okay to disagree? Can you establish any rules that help people disagree in ways that are constructive for your learning? How will your ground rules help you to intervene effectively when difficult situations arise?

A successful tutor intervention is likely to include effective feedback, suggested as a 'necessity for learning'²⁰ and as 'central to medical education'.²¹ However, medical students appear to be dissatisfied with feedback²² and tutors and students often disagree not only about the definition and meaning of effective feedback, but about whether or not any feedback was provided in a particular learning setting.²³ Interactions involving feedback often evoke strong emotions and the delivery of negative feedback, highlighting deficiencies in student performance, induces feelings of anxiety and depression.^{19,24} By contrast with moderately effective interventions outside the tutorial, the public nature of tutor feedback to individual students is likely to heighten such emotional responses and may help to explain why in-tutorial interventions fail to address most of such incidents. Similar interventions in response to incidents involving group dynamics were somewhat more successful. Perhaps the group can share 'blame' for such incidents, although, paradoxically, this same tendency to diffuse responsibility has been shown to reduce the overall effectiveness of the intervention as students may think that it is someone else's responsibility to deal with a problem.²⁵ Our results suggest that the most effective interventions in incidents involving individual students may be those initiated by the group. This underscores the importance of creating tutorial environments in which students take responsibility for addressing problems. The low frequency of groupinitiated interventions suggests that tutors could do more to create such environments.

The present research identifies *where* and *when* specific tutor interventions are advised, depending upon the type of incident being addressed. We do not, however, know *what* is to be said during the intervention. Characteristics of prescribed *effective* feedback include starting with positive comments, focusing on specific behaviours, suggesting ideas for improvement and delivering feedback in a concise and specific manner.^{20–22} Faculty are encouraged to participate in workshops designed to introduce such feedback techniques,^{20,26} but their impact on the success of tutor interventions is unknown.

This study is limited by the fact that it is based on selfreported data and, therefore, is prone to recall and attribution errors. Furthermore, interventions were deemed successful or not solely according to the opinion of the tutors. The quantitative data should not be extrapolated to the majority of tutors or tutorial groups. Such precision and representativeness would require a much more inclusive sampling and survey method, perhaps based on the typology presented here. Moreover, the tutor population was highly selected. We believe, however, that counting the incidents and interventions has provided some important insights, namely: that even our highly experienced and highly rated tutors have plenty of failures in dealing with problems; that commonly prescribed interventions have high failure rates, and that 'hold on to the philosophy'¹⁹ (i.e. the group should solve its own problem) is a promising strategy that could be facilitated and tested. A similar investigation of students' perceptions of the nature and effectiveness of student- and group-initiated interventions versus those initiated by tutors may provide insights that help both parties resolve these distressing incidents.

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