

***Submission to special issue: "Problem-based learning (PBL) and psychology"***

**The discursive construction of group cohesion in Problem-based learning tutorials**

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**Abstract**

Research has shown that educators may be reluctant to implement group work in their teaching due to concerns about students partaking in off-task behaviours (Alley, 2005). However, such off-task interactions have been shown to promote motivation, trust, and rapport-building (e.g. Bickmore, 2003). This paper details a study in which student groups were video recorded as they engaged in problem-based learning (PBL) tutorials, with the aim of examining the detail of social interaction within such settings. Eighty-five hours of data were collected from nine groups across two UK universities, with discursive psychology being used to analyse how group cohesion is constructed through off-topic talk such as gossiping and teasing. Two case studies are detailed in which we demonstrate how cohesion is established through a process of collective action against the 'other': highlighting the differences between "us" and "them", and how this can impact on group dynamics therein. There is often a discrepancy between self-reported and observed behaviour in groups and so the more we know about what actually happens in such environments, the better placed we are to support student learning. The paper concludes with recommendations on how analyses of social interaction and the management of psychological issues in PBL tutorials can inform the use of PBL as a teaching and learning approach.

Problem-based learning (PBL) is a student-centred pedagogy that encourages independent learning, collaborative knowledge construction and intrinsic motivation (e.g. Dolmans & Schmidt, 2006). Students learn through the process of problem solving: working with others to share ideas, clarify differences, and construct new understandings (Frykedal & Hammar-Chiriac, 2011). There is, however, a difference between 'real' and idealised PBL (Provan, 2011), and research has shown that educators can be reluctant to introduce the approach into their teaching, for fear that, when left alone, groups can veer off-topic and not get any work done (e.g. Jennings, 2006).

This subject of going "off-topic" has not been given much attention as it is usually a by-product or finding of more general research into different aspects of the tutorial process (e.g. Cavagnetto, Hand & Norton-Meier, 2010). Although going off-topic is intuitively undesirable in groups, research has shown that such non-pedagogical interaction can actually present benefits such as serving as motivation (Cade, Lehman & Olney, 2010), helping students feel more at ease in a group (Hembree, 1990), and even as a memory cue (Hamann, 2001). In addition, off-topic behaviours can allow students to construct a broader range of classroom identities (Pomerantz & Bell, 2011; Stokoe, 2000) and can promote trust and rapport-building (Bickmore, 2003). It is this facet of off-topic interaction that is the focus of the current paper: demonstrating how engaging in off-topic interaction can construct cohesion in groups.

### Group cohesion

Historically, cohesion has been considered the most important variable in small groups (Lott & Lott, 1965), but it is also an extremely complex entity to evaluate, with much controversy regarding how to define it (e.g. Budge, 1981; Greer, 2012; Keyton, 1992). Descriptions range from feeling "strong ties" (Granovetter, 1973), "connectedness" (O'Reilly & Roberts, 1977), and "sticking together" (Mudrack, 1989) within a group, to being committed and interpersonally attracted (Beal, Cohen, Burke, & McLendon, 2003), and having uniformity and mutual support between members (Hogg & Vaughan, 2008). Cohesiveness, therefore, can be thought of as both a descriptive term but also a

psychological term to describe the individual psychological processes underlying the cohesiveness of groups.

Mudrack (1989) argued that cohesiveness is a property of the group, and yet the group as a distinct entity is beyond the grasp of understanding and measurement. Therefore, in order to measure cohesiveness, research is focused on individuals (i.e., the tangible part of a group) to draw conclusions about the group. Herein lies a problem though: it makes sense to say that a group is cohesive, but not necessarily that an individual is. One of the underlying difficulties of cohesiveness research revolves around the fact that the term 'group cohesion' has an inadequate conceptual basis (Cota, Evans, Dion, Kilik & Longman, 1995) and varies across disciplines (Carron & Brawley, 2000), and as such research has tended to be in applied areas where it is measured by an outcome performance (e.g. Kjormo & Halvari, 2002; Patterson, Carron & Loughhead, 2005).

There has been little past research looking at group cohesion specifically within the PBL setting, although Dolmans and colleagues have proposed that evidence of social loafing in groups is demonstrative that there is a *lack* of cohesion (Dolmans, Wolfhagen, van der Vleuten & Wijnen, 2001), while Hendry, Ryan and Harris (2003), report that such a lack of group cohesion can inhibit the learning process in PBL. As such, there is a real need to investigate group cohesion from an interactional perspective, as theorists have pleaded for more empirical attention to be paid to the detailed interactions by which such intra-group processes can evolve in groups (e.g. Chiochio & Essiembre, 2009). This is the focus of the current paper, as past research has tended to home in on the educational aspects of PBL (e.g. De Grave, Dolmans, & Van Der Vleuten, 2002; Hack, 2013; Virtanen, Kosunen, Holmberg-Marttila & Virjo, 1999), with less attention being paid to other group processes that are taking place. While understanding the educational impacts of PBL is of course of utmost importance, it is vital too to consider the more 'social' aspects of group interaction, such as how off-topic interaction can construct cohesion within a group, and how this can impact on a group's dynamics therein.

## Methodology

### *Participants*

The interaction analysed in this paper is taken from a larger corpus of student PBL tutorials which were video-recorded from October 2012 to December 2013. Thirty-one students comprised nine groups from two UK universities, totalling eighty-five hours of data from undergraduate psychology and interdisciplinary science students (for details regarding specifically the groups featured in this table, see table 1, appendix 1). No demographic data was obtained from any participants such as their ages or gender, but in consenting to take part in the study, participants revealed that they were at least eighteen years old. Informed, written consent was given by all participants, including consent to use static images and video recordings in research publications and presentations, due to the nature of the data and necessity to analyse close-up peer interactions, and the project gained full ethical approval at university level. In order to record the tutorials, groups either set video cameras up themselves (as in extract 2), or the researcher did so (as in extract 1), depending on how their class was structured. Data was collected on memory sticks, before being downloaded onto a password-protected computer within the researcher's institution, and kept in a locked office with only the named researchers having access to recordings. The video data was transcribed to words-only detail in the first instance, with those extracts chosen for further analysis being subjected to Jeffersonian transcription notation (Jefferson, 2004; see appendix 2). In the interests of brevity, only two extracts are analysed in this paper, and were selected as they contained interactions that were representative of a phenomenon recurrent across the data set: namely, cohesion being constructed through group engagement in off-topic talk.

### *Analytical procedure*

A discursive psychological approach was used to analyse the data (Edwards & Potter, 1992; Wiggins & Potter, 2008). The approach draws on the ethnomethodology of Garfinkel (1967) and the conversation analysis of Sacks, Schegloff and Jefferson (1974), focusing on how psychological phenomena are constructed and made consequential in interaction. Discursive psychology does not





gossiping has been identified as making up a significant part of the off-task talk that individuals engage in when working in small groups (e.g. Tholander, 2003), it is of interest to investigate how exactly how this type of talk is produced, and how it serves the function of constructing cohesion within the group. Fundamentally, the gossiping in this extract is due to the discrepancy (as we soon find out) between the perceived amount of makeup Susannah is wearing in the picture, compared to how little she claims to have on.

To begin, we see Jocelyn activate her phone (line 7), which while in the usual PBL group context may not be considered appropriate, here it is made relevant here due to the aforementioned 'news enquiry'. Following this, Jocelyn assesses that Susannah is "wearing so much eye make up" whilst picking up her phone and turning the screen so her peers can see the image (lines 9-10). This physical action serves the dual purpose of validating Jocelyn's claims about the makeup (as her peers can see for themselves), and as an invitation for them to respond to the image. In their 1991 study of the structure of gossip, Eder and Enke demonstrated that the first response to an initial evaluation strongly influences subsequent responses, and indeed we see alignment from the rest of the group in a way that demonstrates affiliation with Jocelyn (Stivers, 2008) and adherence to the gendered activity of gossiping as something that females do (Marwick & Boyd, 2011).



Clockwise L-R: Jocelyn, Ally, Jackie, and Nadia

At line 19, Jackie impersonates Susannah by pulling her hair back – presumably in a similar fashion to the image – and uttering, “oh no make up”, before laughing. Ferreira (2014) suggests that such acts – dramatizing reported speech of the target – elicit laughter through making fun or ridiculing. Here, Nadia laughs (line 21) and Jocelyn utters “I know” (line 22), indicating that Jackie’s turn was recognised as a form of mockery towards Susannah. Intragroup dynamics literature suggests that individuals feel connected to others through a sense of shared characteristics, interests and values (e.g. Bruhn, 2009), and so in agreeing with and supporting each other, the group demonstrate their ‘togetherness’ against the outsider.

From line 24, the conversation moves to highlighting specific features of the image that the group use to account for their position. The way in which this is done – Ally and Jocelyn collaboratively assessing various aspects of the image – is reminiscent of Pomerantz’s (1984) work looking at how participants in a conversation respond to assessments. At line 32, for example, Ally notes that Susannah’s “eyes are totally done”, before, in the next turn, Jocelyn stops what she was going to say in order to upgrade Ally’s assessment by stating, “yeah she’s got full makeup on her eyes” (line 33), emphasising the word “full” to demonstrate her orientation to Ally’s prior turn and exemplify collaboration with her.

At line 35, the interaction develops from simply discussing Susannah’s looks to a more holistic assessment of what “she” is like as an individual. Ally declares “she’s so judgemental of other people” (line 41), suggesting that ‘being judgemental’ is a particular personality trait of Susannah, formulated as being something undesirable since it immediately followed Jocelyn’s turn in which she negatively active voiced her. Past research has shown that when groups home in on negative attributes of outsiders, or ways in which they are different, they indirectly enhance group coherence and promote an in-group identity (e.g. Ladegaard & Cheng, 2014). In discursively constructing Susannah as “judgemental”, Ally simultaneously establishes a positive sense of self and a negative evaluation of the out-group member; a process labelled as “othering” by various researchers in the field (e.g. Jaworksi & Coupland, 2005; Otkar, 2001).

As such, although distracted from the PBL task, gossiping has been shown to serve a function for the group at this point in time. Past research has suggested that such gossiping activities are an integral part of friendship talk which functions to maintain good social relations within a group, and can signify group membership (Coates, 1998; Pilkington, 1998). Here, we see how through their collective action against an outsider, cohesion emerges as a display of 'togetherness' through constructions of 'we versus them' (or 'she', here), and how it evolves as a situated, local phenomenon, with participants displaying their shared understandings about absent others. In speaking reproachfully about her, the group demonstrate both solidarity with one another, but also a lack of solidarity with Susannah; classed as a "moral balancing act" by Bergmann (1993).

In the second extract, we see another example of group cohesion being constructed through the collective action against an outsider to the group, and demonstrating how displays of 'we versus them' constructs cohesion. Here, there are two groups of interdisciplinary science students in the same room. Although it is this Rachel, Donald and Phillip's recording session, another group (Euan and Stuart) can be heard in the background, although the groups are working independently.

#### Extract 2

51 Rachel: oh .hh  
52 ((types on laptop))  
53 (2.0)  
54 Rachel: £I forgo(h)t Ste(h)ve  
55 Donald: [((smiles)) (hhh)  
56 Phillip: a heh heh  
57 Rachel: hih hih (.) hih  
58 (0.5)  
59 Phillip: [((smiling, air quoting))  
60 [forgo:t  
61 Rachel: £hh no I actually did [hih hih  
62 Donald: ((removing earphone)) [heh heh (.) Euan's  
63 (inaudible)  
64 ((3.0: Phillip, Donald and Rachel laugh heartily))  
65 ((until this point, Euan and Stuart had been  
66 conversing together but separately from group 1))  
67 Euan: what  
68 Rachel: £.hhh  
69 Donald: on the Facebook ((turns back to laptop, puts in  
70 earphone)) it's nothing  
71 (0.5)  
72 Donald: ((in 'Italian' accent)) °it's nu:hthing it's  
73 nu:hthing°

74 (0.8)  
75 Euan: what does it say on Face↑book  
76 (1.5)  
77 Donald: never you mind Euan  
78 (1.0)  
79 Euan: no ah-ah actually want to know  
80 Rachel: well you'll see if you look at the- your tags on  
81 Facebook  
82 (13.0)  
83 Euan: post the ↑deets  
84 (0.5)  
85 Rachel: £hm hm  
86 Phillip: ((not looking up from laptop)) details  
87 Donald: aheh aheh a[heh  
88 Phillip: [I guess  
89 Rachel: £no your insect repell[ents  
90 Donald: [£"deets"  
91 Phillip: £(hhh)

This second extract provides another example of how group members take collective action against an outsider, and in doing so construct cohesion between themselves. To begin, from lines 51 to 61, the conversational focus is on Rachel omitting a member of the group's class when posting a Facebook comment. As we join the group, Rachel laughs as she informs her peers that she "forgot Steve" (line 54). Her peer Phillip questions the validity of Rachel's forgetting, as he 'air quotes' – a device used to direct a hearer's attention to a specific entity intended by the speaker (Lampert, 2013) – whilst repeating the word "forgot", and as such demonstrates to Rachel his dubiousness over whether she actually forgot or left Steve out on purpose. The way in which Phillip does so, however, is littered with markers – such as smiling, laughter, and elongating the word (Clark, 1996) – which work to demonstrate that what he is saying should not be taken seriously, and as such creates a jovial teasing environment (Yu, 2013).

Although the third group member, Donald, has only so far been minimally involved in the interaction between his peers (line 55), at line 62, he removes his earphone and engages with them, to say something about Euan, who is not part of the group, but is in the room. Due to the quality of the recording – and the background conversation taking place between the members of the other group – we do not actually hear what Donald says, however, we know that it was not directed *at* Euan

but rather *about* him. Goodwin (1981; 1984) discusses how gaze behaviour can serve the function of displaying attention and (dis)engagement in conversation. Here, Donald's gaze solely towards his own group members suggests that Euan's engagement is not of relevance to the interaction, despite him being the subject of the story.



*Clockwise L-R: Phillip, Donald, and Rachel*

Following Donald's utterance, he and his group laugh, which coincides with the ceasing of the other group's interaction. At this point Euan asks the group "what"; possibly because he heard his name being mentioned, or possibly in response to the group laughter. Donald responds to Euan by stating, "on the Facebook", indicating the source of the laughter (presumably then that there is something to do with Euan on the class Facebook site), but then downplays it by classing it as, "it's nothing" (line 70). This demonstrates an obvious differentiation between how Donald interacts with in-group members compared to those outside the group. Within his own group there is evidence of laughter, joking and sharing stories. However, when an outsider became involved in the interaction – as Euan did at line 67 – there was a clear shift in the interaction, with Donald displaying more dismissive behaviours through orienting back to his laptop, putting his earphone back in, and telling Euan that, despite mentioning his name, it is "nothing". This lack of engagement with Euan but shared

understanding between his group serves to simultaneously enhance cohesion with the latter but maintain distance with the former.

At this point, Donald reiterates the unimportance of what he previously said (lines 72-73). This is not attended to by Euan, however, who continues asking what was said; expanding his line of questioning to, "what does it say on Facebook" (line 75). This is formulated as the first part of an adjacency pair, with conventional conversational interaction suggesting it requires a response (Schegloff & Sacks, 1973). Donald does respond, but in a dispreferred manner; orienting to Euan but in a way that does not answer his question and as such is problematic for the ensuing interaction because Euan still has not received a response. As such, he demonstrates for the third time that he "wants to know" (line 79), and this time Rachel responds, not giving him the answer, but telling him how he can find out (that he will see if he looks on Facebook).

This demonstrates how cohesion is produced as a collaborative accomplishment between the members of Donald's group to the exclusion of those outside the immediate group interaction. Donald and Rachel display their alignment with and allegiance to each other by not revealing to the outsider why they were laughing; ultimately "sticking together" which has previously been considered a defining feature of group cohesion (e.g. Mudrack, 1989). In doing so, Euan is dismissed; his request to know why the others were laughing is being treated as unimportant. Following this is a lapse in interaction, which we soon find out is due to Euan accessing his said "tags" on Facebook, and verbalising to the group what he found (i.e. "post the deets").

At this point, where Euan may have previously been dismissed (lines 70-77), he is now teased. Although a tricky concept to define, the link between teasing and cohesion has been widely demonstrated (e.g. Keltner, Capps, Kring, Young & Heerey, 2001; Nesi, 2012; Pichler, 2006). Gockel and Kerr (2015), for instance, highlighted that group cohesion is enhanced through group members' shared amusement at the expense of someone else out-with the group, which certainly relates to long-held group dynamics literature that advocates that members of groups are likely to see themselves as superior to others, and as such, form bonds based on this shared unity (Tajfel & Turner,

1986). Here, Euan's uncertainty around the word "deets" – and the fact it is explained to him – is oriented to with laughter from both Rachel and Donald, before being made into a joke by Rachel who likens it to the brand 'Deet' insect repellent. The fact that Rachel prefaces her utterance with, "no" indicates sarcasm, which is responded to with laughter from Phillip (line 91), and an imitation, presumably of Euan, by Donald (line 90). In doing so, the group again work together to construct Euan as an outsider, in that he is not 'in' on the joke.

Tholander (2002) discussed how teasing can serve as a socialisation practice in that boundaries are affirmed, and here we see that through the joint dismissal and teasing of Euan, the members of group one demonstrate their solidarity. Wagner and Hollenbeck (2015) write about cohesion in a group stemming from sharing a common enemy; although it is perhaps an exaggeration to class Euan as such, as a member of a different group, he is potentially competition for group one. In taking this collaborative action against him then, group one demonstrate their unified response and in constructing Euan as a bit of a joke, elevate their own status as a cohesive group (e.g. Brewer, 1979).

### **Discussion**

The above extracts illustrate what happens within PBL groups when the conversation veers off-topic. In the first analysis, we saw how group cohesion was constructed through the gossiping about another, non-present student. In demonstrating collective action against an outsider through speaking reproachfully about her, the group establish cohesion through constructions of 'we versus them'; demonstrating both solidarity with one another, but also a lack of solidarity with Susannah. In the second extract, group cohesion emerged through the joint construction of an outsider as being a bit of a joke; laughing at him, dismissing him, and teasing him. The in-group members worked closely together to transgress the outsider, with cohesion being formed through joint amusement constructions. As members of strongly cohesive groups are more likely to participate readily (Dyaram & Kamalanabhan, 2005), it is important that groups take opportunities to engage in such cohesion-building interactions.

However, classing such social talk as being "beneficial", as we have done, is fraught with tension. Although there are benefits from such group interactions as gossiping and teasing, it is important to consider too the less positive outcomes. In extract 1, cohesion was demonstrated through the process of gossiping about an outsider to the group. While all group members contributed to the discussion, they did so with varying levels of 'gossipiness': for instance, one group member's embodied practices suggested a lack of engagement with such talk; actively picking up her pen and writing while her peers were engrossed in the collaborative (de)construction of their absent colleague. Said group member eventually joins in with the interaction; possibly because it is what this group do, and so in resisting taking part, she demonstrates transgressing group norms and as such must make amends to avoid future problems (such as, for instance, being cast as sticking up for the out-group member). The university tutorial has long been identified as an arena for varying identities to be displayed (e.g. Benwell & Stokoe, 2002; Christian, Bagozzi, Abrams & Rosenthal, 2012; Stokoe, 2000), and gossiping in particular has been classed a gendered activity (Dreby, 2009). In not partaking in such activities, therefore, the student would leave herself vulnerable to exclusion.

In extract 2, although group cohesion may have been established through the joint dismissal/teasing of an outsider, we must acknowledge how this may have affected said outsider. Such interactions can be inherently damaging as there is a trade-off between establishing cohesion in a group (good) but through the ridiculing of one individual (bad). Here, one (external) student was the butt of the joke, and although this served a function for the in-group, this is likely to be detrimental for the target. Teasing has, for instance been linked to lower self-esteem (e.g. Mottet & Thweatt, 1997) and threats to a recipient's identity (e.g. Schnurr & Chan, 2011) which could feasibly occur here. It is therefore difficult to promote such gossiping and teasing activities, because although they may demonstrate some benefits to the group's dynamics, the drawbacks seem to outweigh these.

While PBL has long demonstrated its worthiness as a pedagogical approach, it is crucial to consider the intragroup dynamics that may affect its success, but that are often outwith the control of facilitators and tutors. Although not demonstrated here, in the vast majority of the eighty-five hours

of video data compiled for this project, if a group's talk was non-pedagogical when the facilitator entered the room, it quickly halted and re-focused on the task at hand. This is of interest, and an area to be further explored as it displays that although knowing they are responsible for their own learning, students still demonstrate their adherence to the teacher-pupil dyad in that when the 'teacher' is present, it is not appropriate to be gossiping about another student, or teasing a fellow class member, at least in front of them. This suggests that students self-police themselves: recognising that such behaviours are not socially acceptable, or at least not in the PBL group context, despite promoting – as we have seen – group cohesion. This in turn, then, suggests that student groups may not be aware of the benefits of engaging in such social talk, and something which should be considered further.

As with all research, it is important to consider the limitations of this study. One critique may be that it is less important to analyse what students talk about in groups when it is non-pedagogical, and that such research should focus on the academic side of PBL. However, it is unfeasible to assume that any working group – not just students – will stay completely task-oriented for the entirety of their group session, and as such there is a need to see what happens within these 'off-topic' moments; not necessarily to stop them from happening, but so we can support and enhance the socialisation and thus group identity that comes from being part of a group. In a climate where working in groups is still unfavoured by many students due to concerns over, for instance, social loafing (e.g. Pfaff & Huddleston, 2003) it is important that educators promote the benefits of group work. As detailed by Olivera and Straus (2004), groups that display cohesion – stemming from concerns for the group's well being rather than expected rewards – will develop stronger task motivation, and as such presumably reap the benefits that come from working in cohesive groups. However, in order to do so, groups need to take the opportunity to engage in such cohesion-building interactions, although, as noted, it is not as straightforward as this.

In conclusion, this paper demonstrates the interactions that can occur when veering off-topic in PBL work. Although tutors may feel it is their responsibility to direct student groups back to the task at hand if they have veered off, this may not always be the best course of action to take, as there can

be interactional advantages for groups if they are allowed the freedom to socially chat, although there are also potential drawbacks for individuals both within and outside the group. Doing so can promote cohesion within groups, which is fundamental for success and longevity; particularly in PBL sessions that last over the course of a semester. However, as we have seen, such cohesion-constructing interactions have the potential to be inherently damaging. This is an area that requires further research as it can be ambiguous and subjective as to whether cohesion has actually been established, and so it is perhaps more informative to think of cohesion as being constructed as an interactional practice; as something that we *do* rather than something that we *are*, to serve a particular purpose at that moment in time. Therefore, in analysing the turn-by-turn interactions that take place within PBL, we are learning more about the group processes therein (both positive and negative) which in turn leads us to obtaining a better understanding of what PBL is, and how we can support students as they engage with it.

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## Appendices

### Appendix 1: Group information

Extract	Class	PBL experience	Number of hours recorded from this class	Group composition
1	Final year 'Conceptual and Historical Issues in Psychology'	Within past two years, up to 34 hours of PBL split	2 hours: 2 weeks @ 1 hour per week in timetabled slots	4 females, self-formed

		into blocks across different classes		
2	Final year 'Interdisciplinary Science'	PBL used across all years of degree	7.3 hours: 4 sessions, for varying lengths, negotiated by the students outwith university curriculum timetable	1 female, 2 males, institution-formed  (Group in background: 2 males, also institution-formed)

*Appendix 2: Jefferson notation system*

<i>((action))</i>	non-verbal action
(.)	Just noticeable pause
(1.0)	Timed pause
.hh	In-breath
wor-	Cut-off word
>word<	Faster speech
WORD	Louder speech

°word°	Quieter speech
<u>word</u>	Emphasised speech
£word	"smiley" speech
wo(h)rd	(h) denotes laughter bubbling within word
wo:rd	: denotes stretching the preceding sound
Speaker A: word=	= denotes no discernible pause between two speakers' turns
Speaker B: =word	
Speaker A: word [word	Overlapping talk
Speaker B: [word	

\*Adapted from system developed by Jefferson, printed in J.M. Atkinson and J. Heritage (eds.) (1984) *Structures of social action; studies in conversation analysis* (pp.ix-xvi). Cambridge University Press.