A Qualitative Study on Off-topic Conversations in Agile Software Development Student Teams

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I Background and Motivation

The focus of this paper is the flow of conversation topics during meetings as a proxy for team collaboration. More specifically, we aim to answer the following question:

To what extent do meetings go off topic and what are the reasons behind it?

It's well known that Agile methodologies focus heavily on self-organisation, adaptability, and tight collaboration between all stakeholders. What is less evident however, are the exact dynamics behind fruitful and effective collaboration. A key aspect of collaboration is communication, so understanding its mechanisms is vital for teamwork improvement. These vary between teams and domains, but what all of them have in common is that everyone needs to start somewhere, and one of such starting points is a bachelor's programme.

Studying Agile practices among students helps us understand the pitfalls and hardships encountered by developing computer scientists. The results and conclusions of this study can be used by students to become more aware of their behaviours and improve them, by course organisers to improve group projects, and by meeting coordinators to improve the way they lead meetings.

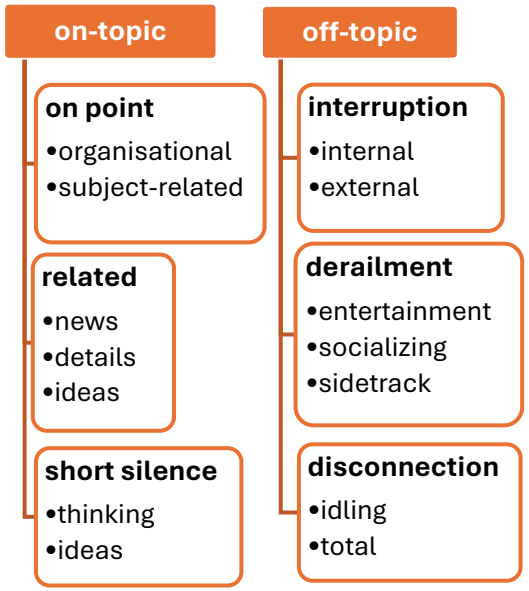
Our hypothesis was that student teams which often drift away from the meeting's topics end up taking more time to share status information and make group decisions, and create more confusion among participants than groups that deviate less from topics relevant to the meeting.

There are many existing works related to the broader topic of communication, but we have found none that offers a detailed enough view of off-topic discussions and their impact on meetings. Through our methods, we analyse the topics and level of individual attentiveness in meetings at a very fine level. This is in opposition to studies that mainly use self-reporting, which yield results at the level of meeting phases, but not individual dialogue lines.

II Thematic analysis case study

We performed a case study on CSE2000 Software Project teams. We recorded and transcribed their planning meetings. All data was collected with the informed consent of the participants using methods approved by the Human Research Ethics Committee.

Overview	Recs.	
3 teams of 5 2nd year students	A	49
4-week long observation	B	43
7 meetings analysed →	B	~47
Meet the teams	B	50
A – had meeting coordinator	C	~53
B – very technical	C	58
C – long in-person sessions	C	63



We created tabular transcripts split by sentence and tagged with a speaker and a thematic code from the figure. Concurrent conversations were hard to model, so we resorted to listening to the recording and creating lists of annotated timestamps.

Timestamps allowed us to much easily follow diverging conversations and nonverbal auditory cues.

We arrived at this hierarchy of thematic codes with inspiration from existing works and following an iterative process over multiple listening sessions.

The researchers' influence on the participants was as minimal as possible.

III Results and Discussion

- All teams borrowed elements from frameworks like Scrum, but ultimately adapted their methods to fit their own preferences. This led 2/3 teams to have a mix of both technical and planning subjects planned for meeting discussion. We did not measure any negative effect on the participants ability to stay on topic.
- The hypothesis was too loosely formulated: the **frequency** and **duration** of off-topic discussion played distinct roles. Short comedic reparks did not influence the meeting negatively when they weren't continued upon by others. They do however serve as cover for disconnected participants, allowing them to seem active without moving the meeting forward.
- In some cases, derailment made up the majority of conversation time close to the end of the meeting. When the end of the meeting was mentioned to be close, some participants lost some engagement in meeting topics, while others hurried to finish the meeting.
- Internal interruptions due to snack eating-related activities was surprisingly high. Eating was a common activity during meetings, and it sparked reactions and sometimes drawn a subset of participants in off-topic conversations.
- The presence of a meeting coordinator was felt strongly. Other participants heavily relied on the coordinator to advance the meeting and to redress derailments. In meetings without one, participants more evenly shared the task of staying on-topic, asking each other what should the next topic be.
- Meetings were split between one with predominant tangents and ones with predominant derailments. Teams that exhibited less derailments "compensated" with technical tangents.

IV Limitations and Solutions

- Our sample size is quite small compared to other similar studies. We had difficulties getting students to join our research and started data collection late. In the future, we recommend that teams are approached sooner and with more compelling arguments to join.
- All monitored teams worked under the framework and requirements of one course. This makes it hard to distinguish course-driven behaviour from the rest. We recommend a more varied sample, possibly including more projects or disciplines.