

Group Perception vs. Group Reality

Exploring the Fit of Self-Report and Log File Data in the Process of Collaboration

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Introduction

- Collaboration and communication in diverse (virtual) teams are considered to be crucial skills in the 21st century (Binkley et al. 2012).
- Virtual collaborative learning requires a great deal of effort from group members as group processes (e.g., task-related communication, coordination of group activities) need to be regulated (Järvelä et al. 2016).
- Analyzing student contributions to collaboration helps to investigate effectiveness of collaborative learning.
 - The predominantly used self-report data on learning might be biased by inaccurate recall or judgement and distortions (Winne 2017).
 - Log file data can add different perspectives and contribute to a more holistic picture (Binkley et al. 2012). This can help
 - teachers provide immediate interventions and
 - increase a groups' awareness of their collaboration processes.

Research Question

Do groups in a VLE differ regarding the collaborative time on task and the group members' perception of the collaboration over time?

Method

Participants and Design

- Participants were $N = 1917$ (73.4% female) first-year psychology students.
- The task included the summary of a scientific paper.
- Weekly surveys on group collaboration were conducted.
- 213 groups with at least 7 (out of 8) active students were analyzed.

Measures

- Self-report data: Students indicated how much time they spent on task-related communication.
- Log file data: Collaborative time on task was based on log data = $\frac{T_{gw}}{T}$.

Log file data is a valuable add-on to self-report data to better understand the dynamics of virtual group work.

The relation between perceived collaboration and the groups' actual collaboration seems limited.

Groups overestimate the time spent on task-related collaboration, especially those that collaborate less overall.



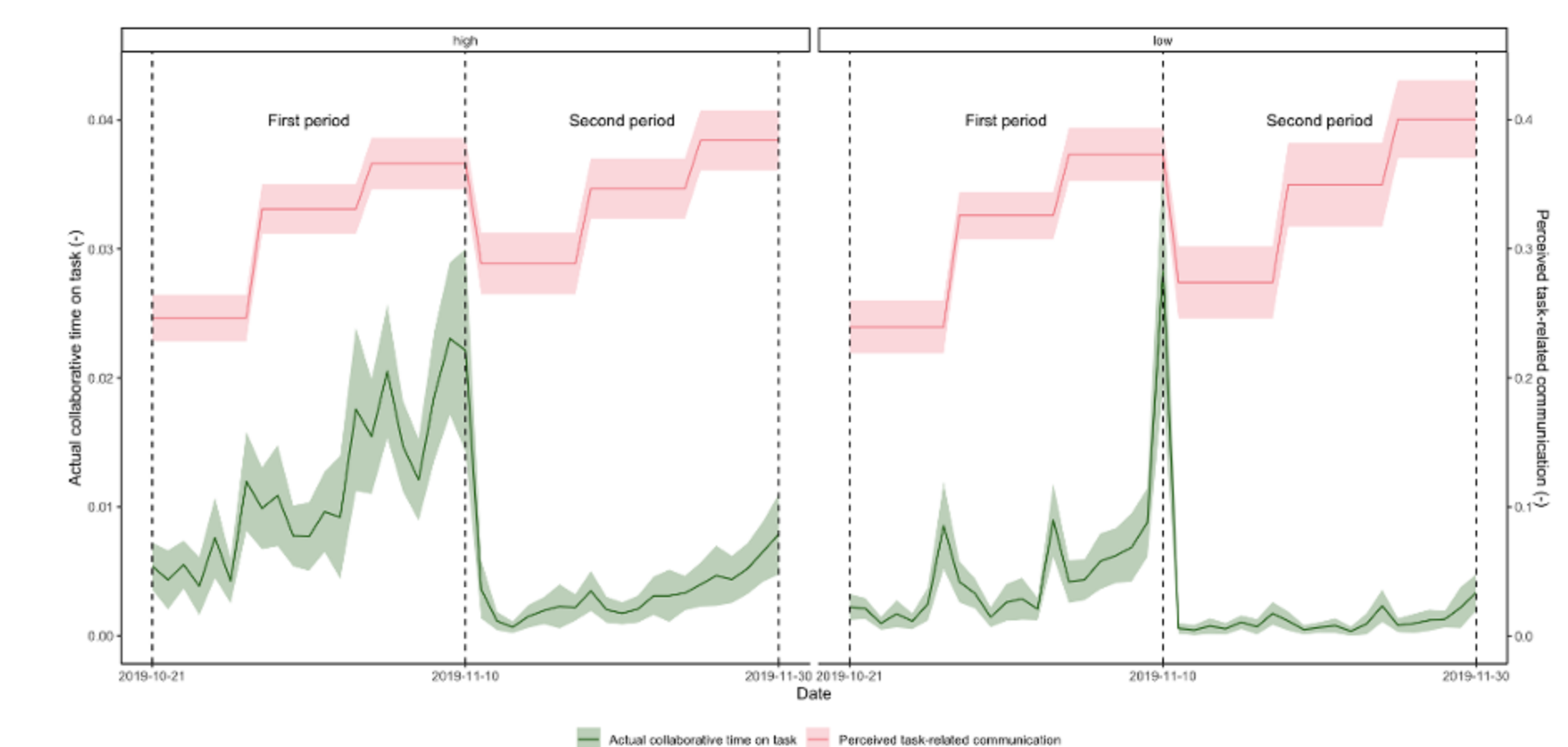
Results

Repeated-Measures MANOVA

- Dependent variables:
 - perceived task-related communication
 - collaborative time on task,
- within-subject factor *time*,
- between-subject factor *type of group*.
- Significant main effect for type of group (Wilk's $\Lambda = .401$, $F(2,210) = 156.52$, $p < .001$, $\eta^2 = .599$),
- significant main effect for time (Wilk's $\Lambda = .187$, $F(10,202) = 88.05$, $p < .001$, $\eta^2 = .813$)
- significant interaction effect for time \times type of group (Wilk's $\Lambda = .552$, $F(10,202) = 16.37$, $p < .001$, $\eta^2 = .448$).

Post-hoc Tests

- Significant differences were found for:
 - perceived task-related communication over time ($F(4.51,951.97) = 55.34$, $p < .001$, $\eta^2 = .208$),
 - collaborative time on task over time ($F(3.09,652.63) = 124.63$, $p < .001$, $\eta^2 = .371$).
- The significant interaction effect for time \times type of group was only found for actual collaborative time on task ($F(3.09,652.63) = 29.21$, $p < .001$, $\eta^2 = .122$).



Perceived task-related communication and actual collaborative time on task of groups with high vs. low actual collaboration time.

Discussion

- The relationship between the perceptions of relevant collaborative processes and actual collaborative time on task seems limited.
- The perceived and actual time spent on the task increased towards the first deadline of the assignment.
- Log file data can be considered as a valuable additional source for investigating collaboration.
- Future work should consider further collaboration measures (e.g., socio-emotional communication) and
- collaboration that occurs outside of the digital learning environment.

References

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