

The Role of Perceived Popularity on Collaborative Learning: A Dyadic Perspective

Rob Gommans^{a, b}, Eliane Segers^a, William J. Burk^a, & Ron H. J. Scholte^a

^aBehavioural Science Institute, Radboud University, Nijmegen, The Netherlands

^bCentre for Child and Adolescent Studies, Utrecht University, Utrecht, The Netherlands

Introduction

Collaborative learning is increasingly being implemented in classrooms as a potentially effective way to improve learning and promote prosocial behavior (e.g., Cohen, 1994; Fawcett & Garton, 2005; Johnson & Johnson, 2009).

Placing children in groups or pairing them with peers at random does not always lead to effective collaborative learning. The **effectiveness of collaboration** depends on factors such as motivation, quality of interaction, structure of the collaborative task, and (dis)similarity between group members on various individual characteristics (e.g., Salomon & Perkins, 1998; Slavin, 1996).

An **individual characteristic that may affect collaboration effectiveness is peer status**. Peer status is related to peer interaction and interaction is a key component of collaborative work. To date, however, the role of peer status is rather understudied in the context of collaborative learning, despite previous research in this area that showed peer status effects on collaboration effectiveness (e.g., Matthews & Kessner, 2003; Murphy & Faulkner, 2000). The present study focused on the effects of **popularity**, a reputational peer status, on collaboration effectiveness in terms of **knowledge gain** and **collaboration quality**.

Goals

1. What are the effects of one dyad member's popularity on the other dyad's member knowledge gain?
2. Does self-reported collaboration quality predict either dyad member's knowledge gain?

Method

Participants

264 10-to-12 year-old elementary school children, 11 classrooms, 3 elementary schools, grades 4 to 6 ($M_{age} = 11.15$; $SD = 0.90$; 50.5% boys)

Materials

69 boy dyads and 63 girl dyads collaborated on a **WebQuest** about bullying or about the pollution of the North Sea during three sessions (S1-S3) of approx. one hour between assessment time T1 and T2. A WebQuest is a computer assignment within a sheltered Internet environment (Segers & Verhoeven, 2009).

Method (cont'd)

Measures

- **Knowledge test** (12 true/false and 6 open questions about the WebQuest)
- **Popularity** (sociometric nominations, most/least popular, standardized)
- **Quality of collaboration** (satisfaction, dominance, and mutual listening)



Procedure

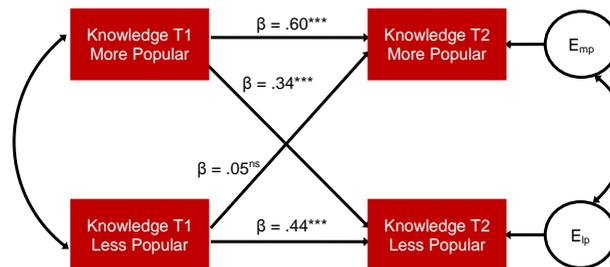
- Computerized questionnaire (except quality of collaboration)
- 6 to 9 weeks between T1 and T2

Results

Research questions were investigated using **Actor-Partner Interdependence Models** (APIMs; Kenny, Kashy, & Cook, 2006), distinguishing dyad members on the basis of their relative popularity: more popular (MP) & less popular (LP).

Goal 1

- **Actor effects:** Knowledge test scores were moderately stable for each dyad member ($\beta_{mp} = .60$ and $\beta_{lp} = .44$, $p < .001$).
- **Partner effects:** More popular (MP) dyad members' knowledge test scores at T1 positively predicted less popular (LP) dyad members' knowledge test scores at T2. Partner effect in the other direction was non-significant.



Note: Chi-square difference tests did not indicate any significant differences between boy and girl dyads or between dyads completing the two WebQuests

Results (cont'd)

Goal 2

- **Actor effects:** LP members' reported degree of **mutual listening** predicted increases in their own knowledge at T2 ($\beta = .15^*$, $p < .05$).
- **Partner effects:** MP dyad members' reported **dominance** negatively predicted LP members' knowledge test scores at T2 ($\beta = -.21^{**}$, $p < .01$). MP dyad members' reported **mutual listening** positively predicted LP members' knowledge test scores at T2 ($\beta = .15^*$, $p < .05$).

Discussion

Results showed that the **less popular (LP) member's knowledge test score improved at T2** when the more popular (MP) member's performed better on the knowledge test at T1. This could be due to MP members having **more opportunity** to share their knowledge, since they are considered to be **more influential** in the process (e.g., more listened to, better able to invoke conformity) than LP members (see Sandstrom, 2011).

In addition, MP members are also likely to be **more effective in transferring their knowledge** to LP members, given their **higher communication skills** and experiences for instance with regard to resolving disagreements as suggested in previous research (e.g., Murphy & Faulkner, 2000).

Enhanced communication is an important indicator of collaboration effectiveness, given the significant partner effects of MP members' reported dominance (neg.) and mutual listening (pos.) on LP members' knowledge gain. **Less dominance** and **more mutual listening** ensures **equal participation** (Fuchs et al., 2000) and increases the chances of the LP member to participate sufficiently in the process.

Conclusion

1. Knowledge of the more popular (MP) dyad member at T1 predicted knowledge gain of the less popular (LP) dyad member.
2. Mutual listening had a positive effect on the knowledge gain of the LP member, whereas dominance of the MP member negatively affected the knowledge gain of the LP member.

For more information or a reprint: r.gommans@bsi.ru.nl