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What factors impact successful collaboration in virtual learning environments? A study of Massive Open Online Course (MOOCs)

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Previous studies on MOOCs show that such virtual learning environments fail to provide social interaction and knowledge exchanges between MOOC participants, which also contribute to high attrition rates (Jordan, 2014). Projects and tasks based on group work are an important element for engaging students in collaborative learning. Collaboration among globally dispersed students can be an important element of the emerging online or blended learning environment pedagogy. It allows isolated students to interact with their peers and extend their individual learning beyond watching videos and taking multiple-choice tests. However, few MOOCs integrate collaborative learning so far, e.g. (Wen, Yang, & Rosé, 2015). Literature reports a multitude of factors that impact group work performance and satisfaction e.g. (Razmerita & Kirchner, 2015; Taras et al., 2013) but also group resistance (Turel & Zhang, 2011) or the intention to join group work in a MOOC (Razmerita, Kirchner, Hockerts, & Tan, 2018). However, little is known about which factors contribute to successful collaboration in a MOOC.

General questions

Group work can substitute for the lack of interaction with teachers and lack of direct contact with other participants in the course, by fostering the interaction between participants and social-collaborative learning. Questions relevant for group work in MOOCs might be raised:

- What factors contribute to a perceived successful collaboration in a virtual environment like MOOCs? And what factors hinder perceived successful collaboration?
- How can students be helped to collaborate and learn effectively through group work in a virtual learning environment like MOOC?

Issues

MOOCs that integrate group work often end up with dysfunctional teams due to drop-outs or insufficient fit of group members (Staubitz & Meinel, 2017). Understanding the factors that affect satisfaction with virtual group work in a MOOC helps to further define guidelines and interventions to support virtual group work.

Concerns

We collected data from participants at the end of a Social Entrepreneurship MOOC, in Spring 2015. Data was collected from both participants who engaged and those who did not engaged in group work. From them 138 students who answered the questions regarding group work experiences, especially, how satisfied they were with group work. On a Likert Scale from 1 (very bad) to 5 (very good) the mean value of satisfaction was 3.5. We used regression analysis to investigate which factors contribute to a higher satisfaction with group work in the MOOC. Investigated influence variables were attitudes toward group work, the improvement of knowledge processes, negative experiences, group heterogeneity and peer norms, group work self-efficacy, received support from the group, future expectations for group work, usage of e-collaboration tools, stress and depression as well as group work outcome. Among the 57 variables, the following were significant influence factors ($R^2=.970$):

- I have enjoyed group work collaboration.
- Overall team members have contributed roughly equally to the teamwork.
- I have been able to count on my group members to help me when I faced difficulties.
- Group work collaboration has enabled me to learn new things.
- I have experienced difficulties due to lack of leadership in MOOC group work.

We are looking for feedback from the Unconference participants particularly on the following subjects:

1. How can collaboration be fostered in virtual learning environments? and in particular:
2. How can we support virtual collaboration via group work in a MOOC and how to overcome inherent challenges (e.g. lack of trust, lack of coordination issues)?
3. How guidelines for successful virtual group work could look like?

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