

Comparing the effect of individual and group code review activities on student engagement in an online classroom

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Motivation and Background

- Due to pandemic, first year introductory computer science course transitioned to online platform.
- Current classroom :
 - international students
 - non-native English-speakers
- Lack of student engagement is a challenge in online learning
 - exacerbates in online international classrooms

Prior Art

- Code review cognitively engage students (Hundhausen et al., 2007)
- In face-to-face classrooms, group code review resulted in
 - Less drop out rates, regular attendance
 - More collaboration (Trytten et al., 2005)

Our Solution

Individual code review activity (iCR) → **Group review activity (gCR)**

Research Question

Does participating in a gCR activity:

increase students' level of behavioral and emotional engagement without compromising cognitive engagement?

Group code review activity

- Students were asked 7-10 multiple choice questions about c++ programs
 - related to code style, internal consistency of the program
- Students first completed the questions individually, then met online to discuss in groups

Procedure

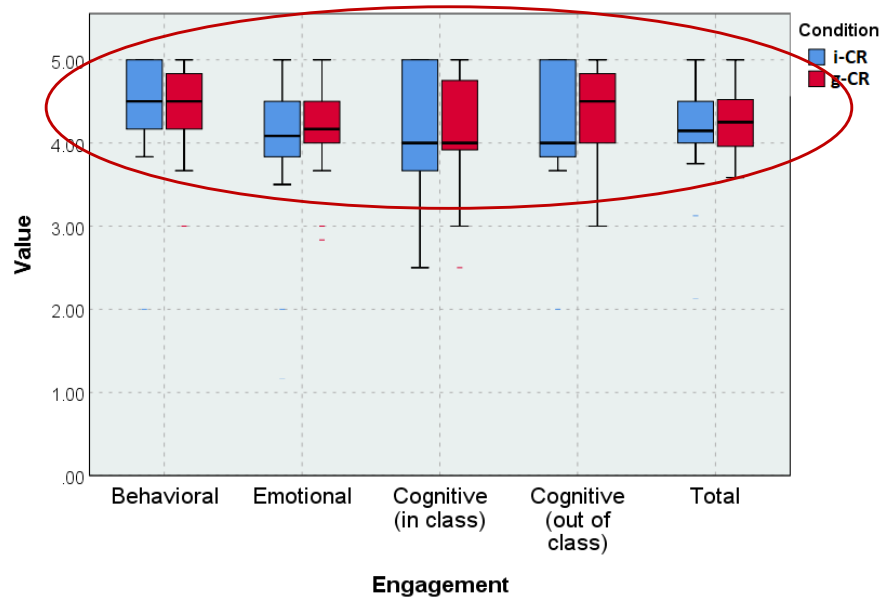
- In the beginning of the semester student groups were formed (3-4 students / group)
- Group A : 11 student groups, Group B : 10 student groups
- Within subject experimental design

group A	g-CR	i-CR
group B	i-CR	g-CR

Within Subject Experimental design : Balancing the conditions

- Students filled a validated survey consisting of Likert scale type questionnaire
 - Burch Engagement Survey for Students (BESS) (Burch et al., 2015)

Results



No significant difference in iCR and gCR groups
in emotional, behavioral and cognitive engagement

Discussion and Challenges

- Prior friendships among students
- Group formation not random
 - Students were allowed to choose classmates in the same time zone
- Students might be stressed due to pandemic ?

Questions ?

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