



# Student interaction and cognition in online role-playing discussions

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This study describes evidence supporting the effectiveness of role-playing discussion for science communication in online education and offers strategies for its implementation. The effectiveness of role-playing discussions was assessed through three measures: 1) student perceptions of the activity, 2) student interaction using the Interaction Analysis Model, and 3) level of cognition using the Revised Bloom's Taxonomy. The results demonstrated that students were highly engaged in this activity, with limited presence of off topic threads. In addition, students adjusted the cognitive level of their participation as they embodied different roles and performed at high levels of cognition. Role-playing enables rich and adaptable online discussions, facilitating peer learning in distant settings.

83%

help see that others had different perspectives

74%

made the online discussion more enjoyable

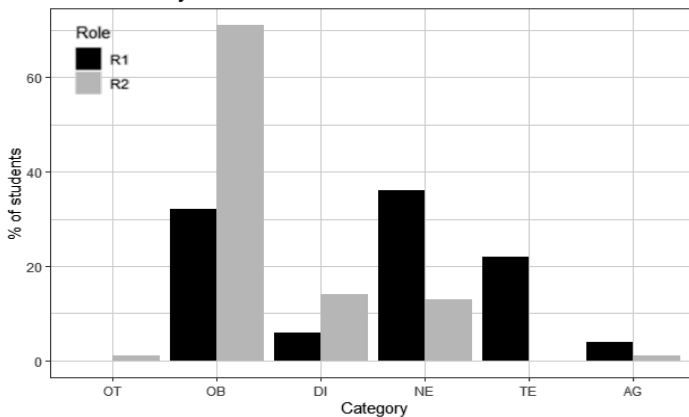
61%

more engaging than traditional small group discussions

79%

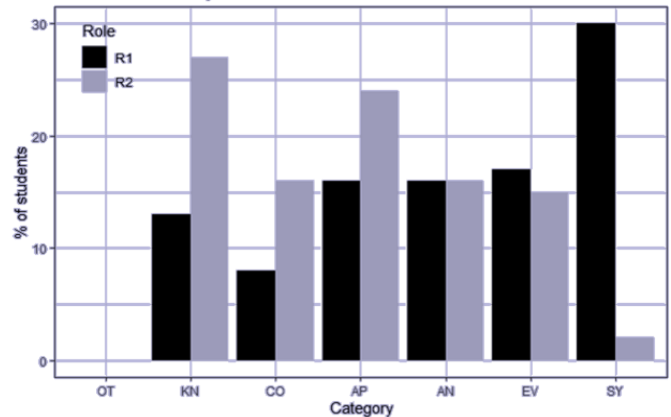
made look at the issue of hazard communication differently

Interaction Analysis Model

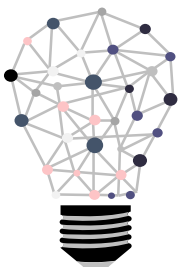


Distribution of responses based on the Interaction Analysis Model. Categories are abbreviated as follows: OT – Other, OB – Observation/agreement, DI – Discover inconsistency, NE – Negotiation of meaning/ construction of knowledge, TE – Testing and modification of proposed synthesis or co-construction, AG – Agreement statements.

Bloom's Taxonomy



Distribution of quantitative responses based on the revised Bloom's Taxonomy (BT) for roles R1 (students from this course) and R2 (member of general public). Categories are abbreviated as follows: OT – Other, KN – Knowledge, CO – Comprehension, AP – Apply, AN – Analyze, EV – Evaluate, SY – Synthesis.



The results of analyses of interaction and cognition demonstrated:

- online discussions using role-play are happening at a high cognitive level
- The instructor can control the level of interaction in the online discussion to reflect the nature of interaction that is needed
- student interactions and cognition can mimic face-to-face classroom interactions or real-life examples. The role-playing activity incorporated into online discussion kept discussion focused and relevant to the topic.

**What are the benefits and challenges of integrating social media into your own classrooms and contexts?**