Online IDEAL Role-Play to Increase Problem-Solving Skills and Higher-Order Thinking in a Teacher Education Course

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Author Biography

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Goal of the Activity

Ever since I started teaching online courses, I primarily used the discussion board for delivering course activities. However, because the linear design of online discussion boards causes passive reactions to peers' postings, I struggled to find ways to prevent students' rote and mundane responses to peers' postings on the discussion board. In an effort to develop students' problem-solving and reflection skills, I employed the IDEAL approach for role-playing based on Bransford and Stein (1993)'s IDEAL approach. This approach consists of: 1) **I**dentify problems and opportunities; 2) **D**efine goals; 3) **E**xplore possible strategies; 4) **A**nticipate outcomes and act; 5) **L**ook back and learn.

Description of the Activity

To strengthen students' problem-solving skills through social interaction, students were asked to identify the problems, solutions, and implementations of their practice. In the syllabus, the professor (author) assigned the students roles to play each week and asked them to post the weekly discussion topics based on the steps of the IDEAL approach advocated by Bransford and Stein (1993). Each group developed case studies related to the content covered in the course. Members rotated to a different role for each case study.

Assigned roles were:

> **Team Facilitator:** The team leader facilitated the team activities, coordinated the online meetings, led the efforts for all to review, and edited the final draft of the solutions report. Then this person developed a succinctly written yet thorough and engaging synopsis report of the team's analysis of the case study.
> **Problem Identifier:** The problem identifier asked for input about the problem that they faced in the classroom and solicited an improvement plan from them.
> **Strategy Analyst:** The strategy analyst searched the instructional strategies in peer-reviewed articles, online resources or the textbook and secured an agreement from the group to use one or two strategies in the real-life classroom.
> **Solution Implementer**: This person implemented the suggested strategy in her/his own classroom and shared the results of implementation with the group members in a video format.
> **Reflection Debriefer:** This person collected the reflection notes from the implementer and incorporated the implementer's reflections with her/his own for the entire case study in Folio discussion.

Data on How this Activity Meets the Author's Goal

One major finding of the study was that online discussion design with role-play promoted higher mental operation compared to the discussion methods without a role-play approach (Guawardena, Lowe. & Anderson, 1997). In Guawardena, Lowe and Anderson's (1997) study, indirect support was used to improve the quality of discussion, but my study asked for high mental operation by using the IDEAL approach. Even though Level IV (testing and modification of proposed strategies or co-construction) still rated as low as 4%, both Level III and Level V rated at a much higher percentage in my study compared to the Guawardena, Lowe and Anderson (1997) study.

Table 1 Comparison of percentage of higher-order thinking and collaborative learning incidents

Phases	Guawardena, Lowe and Anderson	Kim
Level I: Sharing and comparing of information	93%	35%
Level II: Discovery and exploration of dissonance or inconsistency of advanced teaching strategies	2%	23%
Level III: Negotiation of meaning/co-construction of knowledge	2%	15%
Level IV: Testing and modification of proposed strategies or co-construction	2%	4%
Level V: Metacognitive statements/applications of newly constructed meaning	2%	31%

Students' Feedback on Role-Playing

The majority of participants in this study highly praised the IDEAL role-play activity. One of the graduate students, Sally, noted that the problem-solving discussion "provided meaningful activities" to her. She appreciated the interaction opportunities that the problem-solving discussion offered throughout the semester. She reported that "We got together at the beginning of the semester to choose three or four topics to work on. We brainstormed together and talked about it throughout the semester as a team."

Students exchanged email addresses and phone numbers at the beginning of the semester, then regularly exchanged emails and text messages throughout the semester. The text messages consisted of reminders about deadlines and discussions of instructional strategy successes and problems. Imani also shared her experiences of interacting with classmates: "I tried it [the instructional strategy we chose to implement] out with my students. It is not working. We need to come up with other ways of doing it." She believed that team play was key to success in learning through online discussion.

Instructor Reflection

I learned that future educators are able and capable to develop the problem-solving skills through using algorithmic, collaborative role-playing in the context of online forums where instructors create engaging, goal-oriented discussions and students build a framework to address issues by identifying problems, locating solutions, implementing potential answers to problems, and reflecting with peers for the coherent changes. I witnessed that students naturally gained a frame of reference to a problem after they worked through the problem-solving steps to complete case studies several times. When students were faced with a problem in their classroom, they spontaneously went to the IDEAL problem-solving cycle.

As an instructor, it was a rewarding experience to observe students actively engaged in discussions, in contrast to many studies that found such engagement difficult to achieve in online discussion forums due to its linear nature of interaction. It was more meaningful to me because the engagement was generated not by instructor-led topics but by the student-created topics that were closely relevant to their classroom teaching.

Another important factor for engagement in discussion was group accountability for case studies. This encouraged students to expand their communication channels beyond the discussion board within the Learning Management. Students even started using personal text messages, emails, and telephone calls to discuss plans, logistics, problems, deadlines, and their cases outside the online classroom. Communication methods and content discussions became more divergent, engaging, and frequent than those of online discussions. Role-playing activity incorporated with the IDEAL approach allowed students to learn ways of solving problems, which is requisite to the teaching profession filled with ill-structured problems.

References

Branford, J. D., & Stein, B. S. (1993). *The IDEAL problem solver: A guide for improving thinking, learning, and creativity (2nd ed.).* New York, NY: Freeman.