# 2006-1590: FROM THE CLASSROOM TO THE BOARDROOM: THE USE OF ROLE PLAY IN GRADUATE EDUCATION

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# From the Classroom to the Boardroom: The Use of Role Play in Graduate Education

## Introduction

A variety of innovative student-centered instructional methods are being increasingly applied in non-technical fields to enhance learning. However, in the engineering field, the primary instructional methods continue to follow the traditional teacher-centered approach to teaching and learning. Although useful for imparting information, these types of methods do not readily facilitate open discussion and the free expression of student opinions. Nonetheless, adult learning theories assert that the involvement of the adult learner is critical for effective classroom learning. Engineering educators as well as corporate technical trainers are therefore seeking ways to implement teaching and learning experiences that provide more "hands-on" experiences for learners. Such student-centered instructional methods allow the instructor to emphasize open discussions and encourage innovative expressions of student opinions.

To increase the involvement of adult learners in a graduate-level engineering course at Virginia Tech, the course designers selected experiential learning as the primary instructional strategy and role play as the primary instructional method. Role play was implemented in this course for three reasons: 1) to enhance interaction between the adult learners and the instructors, 2) to engage the adult learners in discussion, and 3) to simulate real world experiences for the learners.

This paper discusses the implementation and impact of role play in a graduate engineering course, Training System Design. It then evaluates the results of an on-line survey the students completed to evaluate their experience participating in a role-play designed course, and concludes with recommendations for implementing additional role play in graduate courses.

## Role Play

Role play is an educational method in which participants take on a particular role, emulating a true-life setting, in order to achieve certain educational objectives.[5] For many years, role play has been used extensively in several disciplines such as nursing, clinical psychology, and management. This educational method, which is somewhat comparable to rehearsal, provides a less structured setting for learning interpersonal skills, developing abstract thinking, sharing new material and experiences, and supporting individuals who make a mistake.[2,4] Role playing also allows an instructor to help students learn to make responsible choices in complex situations.[2] Despite the advantages of role play, there are some valid concerns about using it in a more traditional educational setting. Two major concerns, for example, are the slower learning curve for participants, as well as the time and resources needed to set up a role play environment for learning.[1, 3]

Use of Role Play in the Training System Design Course

Course Description and Design

This course was initially designed to prepare engineering students to make effective training and development decisions within their organizations. Specifically, the course emphasized conducting training-needs analysis, training design and development, training technology, and procedures to evaluate training effectiveness. The course customarily began with an introduction of some fundamental principles of performance to help analyze the causes of performance problems. It then addressed topics of adult learning and training principles, and how to apply these topics to individuals, teams, and organizations.

During the first classroom session of the revamped role-play designed course, the usual lecture-type setting was converted into a corporate environment for the role play. A fictitious for-profit company, EduSource, was created whose mission was to develop executives interested in higher level positions (namely, as Chief Learning Officers), and which also offered a corollary internship program known as the Chief Learning Officer Intern Program (CLOIP). The CLOIP workshops were held in a conference room to simulate a boardroom-styled atmosphere with access to all the latest technologies (e.g., internet, teleconferencing, and video conferencing). Three instructors and 11 students were assigned their role-play characters within the CLOIP. The instructors acted in the leadership positions (the president, the chief learning officer, and a graduate of CLOIP), while the students served as interns in the program. Consistent with the original course learning objectives, the primary learning objective of the CLOIP was to ensure that the interns gained experience on how to design and develop training programs using a socio-technical system designed perspective. The use of role play allowed the students to participate in a real-world learning environment.

To enhance the role play scenarios and facilitate subsequent course assignments, an executive from industry served as the Chief Executive Officer (CEO) of ACME, Inc., another fictitious company. The CEO was responsible for assigning the teams semester projects and serving as a course resource. The course was organized to provide student interaction with the CEO of ACME at least twice a month via conference calls or in person during the course workshops. Additional interaction via e-mail was also promoted. At the end of the semester, students seeking employment opportunities were encouraged to submit resumes to the industry executive.

Learning Objectives

The learning objectives for the modified course were developed for the sole purpose of determining whether learning had actually occurred in the role-play setting. Successfully completing the course was equated with the ability to complete the following learning objectives:

- Identify principles of human performance and work performance;
- Conduct an organizational analysis of performance problems and solutions;
- Explain the principles of adult learning and how professional adults go about learning;
- Explain the role of training in the strategic planning process;
- Analyze training needs;

- Apply a systems approach to develop a unit of instruction for a comprehensive workplace training program;
- Prepare and deliver a unit of training using current technologies and methods;
- Apply the Kirkpatrick training evaluation model to effectiveness and outcome assessment.

Student Evaluation

The students were evaluated on the following tasks:

- Group assignments, which consisted of weekly in-class exercises centered on the course topics,
- Contributions to an online discussion board whereby students were required to answer questions or make comments on a given topic,
- Entry into a weekly reflection journal, designed to document the student's pre-reading ideas or beliefs based on personal experience, readings, discussions from the previous class sessions, or ambiguous issues discussed during the course,
- A group semester project (3-4 students per group), which consisted of developing a plan to implement training in a fictitious business unit and an example of a complete training module to train employees in a new skill.

Course Feedback

The course evaluation was conducted through an on-line course survey at the end of the semester. The 11 graduate students enrolled in the Training System Design course completed the course evaluation. To test the reliability of the survey, a Cronbach's alpha for each survey construct was calculated. Table 1 displays the Cronbach's alpha for the different sections of the survey. A Cronbach's alpha above 0.70 represents a reliable scale. Table 2 displays the survey questions and results of the evaluation. The survey consisted of 22 Likert-type questions related to the course's learning objectives, the use of role play, and the course's deliverables. Three open-ended questions about the students' role-play experience were also included in the survey.

Table 1. Cronbach's alpha for survey constructs.

| Survey construct | Cronbach's Alpha |
|---|---|
| Course learning objectives | 0.89 |
| Use of role play | 0.78 |
| Course deliverables | 0.39 |

Table 2. Survey Questions and Results

Section A – Learning objectives

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| 1. I know how to identify principles of human performance and work performance. | 10% | 40% | 20% | 30% | 0% |
| 2. I know how to conduct an organizational analysis of performance problems and solutions. | 30% | 40% | 20% | 10% | 0% |
| 3. I know how to explain the principles of adult learning and how professional adults go about learning. | 20% | 60% | 20% | 0% | 0% |
| 4. I know how to explain the role of training in the strategic planning process. | 30% | 50% | 20% | 0% | 0% |
| 5. I know how to analyze the training needs of an organization. | 40% | 60% | 0% | 0% | 0% |
| 6. I know how to apply a systems approach to develop a unit of instruction for a comprehensive workplace training program. | 50% | 40% | 10% | 0% | 0% |
| 7. I know how to prepare and deliver a unit of training using current technologies and methods. | 20% | 50% | 20% | 10% | 0% |
| 8. I know how to apply Kirkpatrick's training evaluation model to training programs. | 40% | 40% | 10% | 10% | 0% |
| 9. I know how to develop a business case for training. | 20% | 70% | 0% | 10% | 0% |

Section B – Use of role play in the Training System Design course

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| 1. I liked the use of role play in the course. | 10% | 50% | 20% | 10% | 10% |
| 2. I liked being an intern in the EduSource's Chief Learning Officer Intern program. | 30% | 30% | 30% | 0% | 10% |
| 3. I liked interacting with outside industry executives. | 40% | 40% | 10% | 10% | 0% |
| 4. I liked having class in a boardroom environment. | 60% | 30% | 10% | 0% | 0% |
| 5. I liked having refreshments at each class session. | 70% | 20% | 0% | 10% | 0% |
| 6. I liked the use of conference calls during class sessions. | 30% | 60% | 0% | 10% | 0% |

Section C –Training System Design deliverables

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| 1. Completing the reflection journals contributed to my knowledge domain about training systems. | 20% | 20% | 30% | 30% | 0% |
| 2. Participating in the discussion boards contributed to my knowledge domain about training systems. | 10% | 50% | 20% | 20% | 0% |
| 3. Participating in the in-class exercises contributed to my knowledge domain about training systems. | 70% | 10% | 20% | 0% | 0% |
| 4. The workshop lectures contributed to my knowledge domain about training systems. | 40% | 30% | 20% | 10% | 0% |
| 5. Completing the organizational training plan contributed to my knowledge domain about training systems. | 70% | 20% | 10% | 0% | 0% |
| 6. Completing the business case contributed to my knowledge domain about training systems. | 60% | 20% | 20% | 0% | 0% |
| 7. Completing the training module contributed to my knowledge domain about training systems. | 40% | 50% | 10% | 0% | 0% |

Section D - Open-ended questions

1. What were the strengths of using role play in the Training System Design course?
2. What were the weaknesses of using role play in the Training System Design course?
3. What suggestions do you have to improve the use of role play in the Training System Design course?

Discussion

After tallying the responses, it was determined that all of the learning objectives for the course received ratings above 50%. Moreover, the learning objectives directly related to the semester project and in-class exercises received ratings of 70% and above. Overall, the students in this role-play course reported that they were able to complete the following learning objectives with notable consistency, as demonstrated by the high associative percentages:

- Conduct an organizational analysis of performance problems and solutions (70%)
- Prepare and deliver unit of training using current technologies and methods (70%)
- Explain the principles of adult learning (80%)
- Explain the role of training in the strategic training process (80%)
- Apply Kirkpatrick's training evaluation model to training programs (80%)
- Apply a systems approach to develop a unit of instruction for a comprehensive workplace training program (90%)
- Develop a business case for training (90%)

It should be noted, however, that only 50% of the students reported that they understood how to identify principles of human performance and work performance. This learning objective received the lowest rating. Unlike the other course topics, human performance and work performance were not a required deliverable for the semester project. Therefore, the students may have not gained a good understanding of these concepts because they did not have to apply them in their semester project.

The overall success of the course as demonstrated by the high ratings is attributed to the use of role play to deliver knowledge about theories and concepts, as well as having the students apply these concepts and theories to the semester project and in-class exercises. Role playing enabled the students to share their personal experiences, while affording the instructors the opportunity to offer constructive feedback on the in-class exercises and semester project based on their knowledge and experience in the field.

This study also revealed that the majority of the participating graduate students generally enjoyed the role play environment. Sixty percent of the students (those who "strongly agreed" or "agreed") liked role playing as an intern in EduSource's Chief Learning Officer Intern Program, and 80% of the students liked interacting with an outside industry executive (the CEO of ACME, Inc.). Even more persuasive, 90% of the students liked having course workshops in a boardroom environment, which exposed them to real-world technologies such as conference calls and video-conferencing.

Conclusions

As noted earlier, there are several drawbacks associated with using role play in a more traditional educational setting. For example, the use of role play as an instructional method requires more preparation and planning as compared to a traditional lecture-type course. This preparation involves developing realistic industrial scenarios with well-delineated roles for the instructor and students to enact throughout the course. After developing a scenario for role playing, appropriate

case studies must be gathered or developed to create in-class exercises for the instructor and students to role play and apply in order to determine the relevance of the course topics. The case studies and in-class exercises must be logical and with sufficient detail and information so the students can easily recognize the essential links between the course topic and the case studies and in-class exercises.

Another possible deterrent to incorporating more role play in the classroom setting is the importance of involving industry in both the planning and execution of the course. To simulate a more realistic corporate environment, relationships with organizations in industry can be essential when developing class exercises or projects. Moreover, industry employees can contribute to role play scenarios in meaningful ways by incorporating actual projects from their workplace. This type of industrial involvement not only exposes the students to experts in industry, but also opens the door for later employment opportunities.

To ensure the success of role play as an instructional method, it is also extremely important for students to attend every class, complete assigned readings before class, and take an active part in all in-class and on-line discussions. Based on course evaluations, the major strengths of implementing role play in this graduate course were the in-class exercises and group learning opportunities. The in-class exercises motivated the students to remain attentive during the course, while the use of role play provided the opportunity for students to share their personal experiences. One drawback mentioned by many of the students was that the course utilized fictitious scenarios for the role play activities—they would have preferred real industrial problems. Thus, in the future, course instructors should explore opportunities for industrial involvement by providing real-world problems for the students to solve.

Based on course evaluations and the results of semester projects, the course objectives were clearly met through the use of role play as a more student-centered instructional method. As evidenced by their semester projects, the students were able to demonstrate their ability to develop a plan to implement training in a business unit and design a complete training module to train employees in a new skill. Using role play enhanced the students' interest in the course and afforded opportunities of how to apply training concepts in the corporate environment. The students obviously enjoyed the use of role play as an instructional method, developed the necessary skill set to design effective training programs, and highly recommended this course to other engineering graduate students. With the necessary planning and preparation, the use of role play in a graduate engineering course can be successfully implemented to provide a more productive student-centered approach to teaching and learning.

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