OPERATION LOST PARADISE: A Low-cost Classroom Simulation for Medical Stability Operations in Medical Education

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ABSTRACT

DODI 3000.05 "Stability Operations" and DODI 6000.16 "Military Health Support for Stability Operations" both state that Stability Operations and Medical Stability Operations (MSO) respectively "shall be given priority comparable to combat operations and be explicitly addressed and integrated across all Military Health System (MHS) activities." In current operations, inexperienced military medical officers are increasingly asked to perform at a high level in stability operations requiring interaction with international government (IGO), non-governmental (NGO), and interagency personnel to achieve the mission. Traditional medical school curricula at The Uniformed Services University and other medical curricula at specific military service schools have only addressed MSO minimally, if at all, while maintaining their traditional focus on medical support of combat operations. Additionally, traditional curricula have relied on lecture based teaching methodologies to address this important content area, which has been shown to have low efficacy and unreliable outcomes for long term retention and application in the field. These effects combined with the inherent difficulty in teaching attitude based learning objectives result in military physicians being ill-prepared for the challenges faced in MSO deployments.

OPERATION LOST PARADISE is a low-technology, low-cost solution to for interactive medical education using a classroom based simulation that addresses IGO-NGO-Interagency-Military coordination in the operational environment. The exercise is modeled after the popular party game, “How to Host a Murder Mystery” and uses a novel application of role-play on a negotiation platform to guide students through critical learning objectives in an adult discovery learning experience. This presentation will describe in detail the methodology, lessons learned, and initial outcomes assessment of the OPERATION LOST PARADISE exercise for military medical student education at the Uniformed Services University of the Health Sciences. This methodology has applicability across the full spectrum of military, governmental, and civil organizations for training and preparation for Stability Operations in all disciplines and is a feasible approach to effective training in today’s cost-constrained training environment.

ABOUT THE AUTHORS

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Karen E. Marcellas, PhD is a Principal Instructional Designer and Fellow Technologist for Concurrent Technologies Corporation (*CTC*). Dr. Marcellas has over ten years of experience in analyzing, designing, developing and evaluating educational and instructional products to ensure the highest quality of instruction. Her experience includes front-end analysis, audience analysis, content design, course evaluation, and conducting research on instructional interventions. She has an M.S. in Instructional Systems from Florida State University and a Ph.D. in English Literature from Princeton University. At *CTC* Dr. Marcellas has been involved with many instructional and educational technology initiatives at National Defense University (NDU) and the Uniformed Services University of the Health Sciences (USUHS).

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BACKGROUND

The Uniformed Services University of the Health Sciences (USU) is the Nation's federal health sciences university and its F. Edward Hébert School of Medicine provides a traditional four year medical school curriculum with the unique mission of preparing graduates for careers as military medical officers. The School of Medicine delivers a standard medical curriculum but superimposes on it a unique four year syllabus that focuses on operational military medicine, officership, and organizational challenges unique to the military. The graduate of the School of Medicine is expected to be a balanced and competent physician, officer, and medical operator.

Like many undergraduate medical programs, the USU Operational Military Medicine (OMM) curriculum has historically relied heavily on lecture-based teaching methodologies. Recent efforts in a comprehensive curriculum reform project at USU coupled with the fact that military medicine topics are not addressed on national board examinations (and thereby hold a lower priority in the students' individual study plans) have highlighted the need to improve teaching methodologies in an effort to capture the students' attention and improve long-term retention of critical lessons which will assist them in upcoming deployments—which for most students will occur a decade later.

Simultaneously, current military operations and the National Defense Strategy have demanded changes in priorities in training and skill sets for medical officers in the deployed environment (Rumsfeld, 2005 and Gates, 2009). The "long war" will require taking new approaches to international problems, increasing interaction with international leaders at the national and local level and placing priorities on international and interagency coordination. "We face a clash of arms, a war of ideas, and an assistance effort that will require patience and innovation" (Gates, 2009). Many of these problems are encountered by relatively junior officers and with medicine as a strategic instrument, junior medical officers are finding themselves engaged in international, interagency, and non-governmental organization (NGO) coordination efforts with very little advance preparation for these stability operations. In 2005, DoD Instructions 3000.05 and 6000.16 declared that "Medical Stability Operations [MSO] shall be given a priority comparable to combat operations" and "be explicitly addressed and integrated across all [Military Health System] MHS activities including doctrine, organization, training, education, exercises, material, and leadership." (DoDI 6000.16) While USU was addressing Medical Stability Operations in a lecture series, it was clear that the curriculum needed to be modified in order to align the OMM priorities with these newly established DoD priorities.

OPERATION LOST PARADISE was the first of several experiments in educational methodologies employed in the OMM curriculum at USU and was specifically targeted to address preparation for MSO This exercise met with a tremendous amount of success, motivating further innovations in educational design and causing the faculty to reconsider how material is delivered in the curriculum.

Purpose

The purpose of this paper is to describe in detail the methodology, lessons learned, and initial outcomes assessment of the OPERATION LOST PARADISE exercise for military medical student education at USU. This methodology has applicability across the full spectrum of military, governmental, and civil organizations for training and preparation for Stability Operations in all disciplines and is a feasible approach to effective training in today's cost-constrained training environment.

Teaching Methods and the Evolution of an Idea

There has been a tremendous volume of discussion in the educational literature about the effectiveness of various teaching methodologies in higher education. Despite the increasingly commonly accepted notion that *lecture-based* teaching methods do little for student retention and test performance (Stuart, 1978; Green,

1928; Lake, 2001), *lecture* remains among the most commonly used methods in higher education (Shoenfelt, 1991; National Survey of Student Engagement, 2010) and is also the mainstay of teaching at the USU. This is probably to a large degree due to the relative economy of the large group format. *Lectures* have the inherent advantage that a single faculty member can address a large number of students and provide the ability to share large amounts of information in a finite time window (Lake, 2001).

Anecdotal and formal student feedback in the USU military medicine curriculum, however, reinforced the need to re-examine the teaching methods used in the OMM curriculum. There was a disconnect between feedback from students (neutral to negative) and visiting faculty members (positive) about their satisfaction with the quality of the lecture series. This incongruence led us to re-evaluate the teaching methods and ultimately led to a comprehensive restructuring of the military medicine courses.

Priorities centered on problems with retention and student interest levels of traditional *lectures*. While traditional *lectures* provide an efficient means to deliver facts (knowledge), teaching important skills and the attitudes that are critical to success as medical officers is exceedingly difficult in the *lecture* format. *Lectures* simply do not reflect the complexity of real-world situations (Bochennek, 2007). More to the point, *lecture* as a method has been shown to be the least effective method for achieving goals across the full spectrum of educational objectives including knowledge acquisition, knowledge retention, attitude change, interpersonal skills, problem solving skills, and participant acceptance (Shoenfelt, 1991; National Survey of Student Engagement, 2010). Van Ments claims that non-experiential methods such as *lecture* "cannot change attitude" (Van Ments, 1999). It has been long established that attention levels during lectures are short lived (Stuart, 1978) and Green, in 1928, made a compelling argument that students could learn at least as effectively by self-study as evidenced by test results (Green, 1928). Lake corroborated this when he found a very weak correlation between lecture attendance and grades (Lake, 2001) and military medicine students at USU followed the same pattern. With lecture attendance routinely under 20%, there was no observable difference in test scores between those who attended and those who did not.

Accordingly, when we needed to address the gap in education for MSO mentioned earlier, our attention turned to the employment of active, student-centered learning methods. A new exercise was proposed, but before designing this exercise, we would spend some time looking at the best employment of teaching methods in order to address the problems already described. Additionally, we knew that we needed to focus less on *knowledge* and more on *skills* and *attitudes*, as these were the things that were more likely to "stick" for the remote deployments our graduates would be facing. Due to a number of changes in graduate medical education and medical licensing requirements, students' first deployments are now typically delayed until after they have completed a 3-5 year graduate medical education (GME) program or "residency" after medical school. When looking at a second year course in medical school, this means that it may be over eight years before the student deploys to the field environment in support of troops. In that time, knowledge requirements may change, and facts can be forgotten (and, perhaps more importantly easily referenced). But attitudes and skills will remain critically important, and the Military Medicine faculty generally agreed that we needed to re-focus on this arena in order to provide the best preparation for our graduates.

Studies looking at Continuing Medical Education (CME) activities had indicated that interactive techniques (discussion, role-play, hands-on practice) were significantly more effective in producing change in outcomes and behavior in physicians (Davis, 1999). When comparing teaching methods, Shoenfelt demonstrated that *role-play* and *sensitivity training* were the leading methods for accomplishing attitude change. His data further suggested that *role-play* was also the leading method for problem-solving skills, interpersonal skills, and retention, with *simulation* sharing the lead for retention (Shoenfelt, 1991). *Role-play* as a method seemed to fit well into the attitudinal and skill-based objectives we wanted students to attain in our new exercise. Students normally enter USU at about age 22 and are therefore generally lacking extensive life-experience in general and deployment experience in particular, which requires that the educational methods not rely heavily on a previously acquired experience base of the students. *Role-play* provides its own experiential base which helps the student to cope with handling human situations and uncertainty (Van Ments, 1999), allows for risk-free practice of skills (Nikendei, 2005), and is particularly well suited for teaching the interpersonal skills and communications needed in Stability Operations. *Role-play* games often reach a high level of communication and complexity (Bochennek, 2007) and the opportunity for immediate feedback following *role-play* is of high didactic value (Nikendei, 2005).

Role-play is believed to be effective in changing attitudes and in creating highly memorable lessons

(Van Ments, 1999). Others have indicated that classroom sessions which utilized *role-play* were scored significantly higher in terms of student performance and satisfaction than those without *role-play* (Nikendei, 2005). Van Ments advised that *role-play* is best used in teaching where the "tutor wants students to experience and become involved in the situation they are studying and to formulate their attitudes towards it" (Van Ments, 1999). Accordingly, given the previously described delay for USU students in implementation of skills during deployment and the need to address student attitudes toward field skills in general, the experience offered by *role-play* would be a critical benefit of this teaching methodology.

It was, by now, very clear that we wanted to incorporate some element of *role-play* into the exercise, but other teaching methods also held merit. There has been a large push in medical education towards *problem-based learning (PBL*) in which cases are presented, discussed, and analyzed. PBL has been shown to produce better examination performance (McParland, 2004) while others have argued that there is no convincing evidence that *PBL* improves knowledge base or clinical performance (Colliver, 2000). Yet there is equally compelling evidence that *PBL* has the potential to produce significant improvements in attitude toward the material (McParland, 2004).

Another potential teaching method is that of *games. Games* have been shown to provide improved test scores and student interest in medical education (Meterissian, 2007). Several different type of games in medical education have been described including dice and luck games, outlay games, thinking games, quiz/communication games, role-play games and simulations, and dexterity games which have all had successful outcomes (Bochennek, 2007). Games have a unique ability to put an individual "on the spot" and the anticipation of the resultant stress provided has been objectively shown to encourage active preparation (Meterissian, 2007).

If the goal in exercise design is student engagement, there may be no other better method than gaming. But all games may not be successful in transferring knowledge. On the other hand, "a boring game that is not played because it does not cause excitement *cannot* transfer knowledge" (Bochennek, 2007).

Whether *game*, *role-play*, *discussion*, or other method, there seems to be little doubt that small-group interactive learning sessions are superior to *lecture* for objectives related to attitude and reflection. Students working in small groups are better able to generalize from observations, are superior at application, and achieve a higher level of critical analysis (Lake, 2001). Interactive learning activities would be expected to produce better outcomes in practical application than fact-based non-interactive teaching and testing modalities (Lake, 2001; Williams, 2001).

The best possible approach, then, would seem to be the combination of several of these methods into a single activity that took advantage of the better features of each. While combining interactive methodologies in the large group has been demonstrated to be successful (Cavanagh, 2011), little has been written about combining methodologies in the small group. Given the nature of the learning objectives we were after with our new exercise, which mirrored Van Ments' advice with near perfection, we made the decision to combine *role-play* with other methods into one exercise. We determined that a *game/simulation* which simultaneously utilized *role-play* and *PBL* would have the best potential for transforming our lackluster student feedback while simultaneously transferring genuinely useful and enduring lessons to the students. This is the idea out of which OPERATION LOST PARADISE emerged.

DESCRIPTION OF THE EXERCISE

Overview

OPERATION LOST PARADISE is a classroom exercise designed to teach principles involved in MSO. While traditional didactic teaching methods and self-study/reading are adequate to provide students of stability operations the basic required knowledge, it is difficult to teach the attitudes required for successful conduct of operations in a complex international, interagency operational environment through lecture alone. OPERATION LOST PARADISE uses a combined methodology of *game/simulation PBL*, role-play and negotiation to:

- Introduce attitudes required for successful conduct of operations in a complex international, interagency operational environment
- Break down pre-conceived ideas about stake-holders and their agendas and capabilities
- Encourage interactions amongst these groups in the field.

The exercise is modular in design and can be easily adapted to the needs of a wide variety of organizations including military groups of all disciplines (combat arms to medical personnel), government agencies, non-

governmental organizations (NGO), civilians, and private industry.

Learning Objectives

OPERATION LOST PARADISE is designed to produce attitudinal changes toward various stake-holder groups in MSO and to expose students to the issues associated with interagency and international coordination in stability operations. It focuses on Cultural Competency, intra-organizational dynamics, and personal interaction skills, and it embeds core MSO knowledge into all aspects of the exercise.

Design Goals

In creating the OPERATION LOST PARADISE practical exercise, we strove to represent all aspects of Kolb's experiential learning model, which is typically represented by a four stage learning cycle in which the learner 'touches all the bases':

1. **Concrete Experience** - (a new experience of situation is encountered, or a reinterpretation of existing experience)

2. **Reflective Observation** (of the new experience. Of particular importance are any inconsistencies between experience and understanding)

3. **Abstract Conceptualization** (Reflection gives rise to a new idea, or a modification of an existing abstract concept)

4. **Active Experimentation** (the learner applies them to the world around them to see what results)

(Kolb, 1984)

Embracing Kolb's philosophical emphasis on experience in learning, LOST PARADISE focuses on creating an experimental environment in which students would have a multiple-stage simulation which accurately represented the complex systems from the real world in a simplified model that presented issues in a concrete process (Bochennek, 2007) in order to insure that students achieved a solid grasp of key elements which they would gave through experimentation and conceptualism in the abstract.

It was essential to insure that the exercise captured students' enthusiasm in order to maximize retention (Cavanagh, 2011) and we wanted an element of competition and surprise (Bochennek, 2007) to maximize the emotional impact and personal buy-in of the students.

The exercise would combine technical skills procedures and communications skills (Nikendei, 2005) and provides an abstract collaborative learning environment in which students would be exposed to a broader spectrum of alternative perspectives and ways of thinking (Cavanagh, 2011). In doing so it stresses achievement of a high level of experiential learning (Bochennek, 2007), good attitudes toward the exercise, and improved critical thinking skills through active student participation (Cavanagh, 2011).

In order to address the very concrete nature of the USU student body's mode of thinking, it was important to insure that the exercise provided a concrete structure that students could easily engage with. The exercise was designed to focus on one or two central ideas (Cavanagh, 2011) in order to limit the content to a manageable scope that students could master in a finite amount of time. Likewise, a constructivist approach to developing the learning environment would be important for this exercise in order to provide organization of the experience and assist the students in bringing the abstract experience into concrete understanding. Constructivism views learning as a process in which the learner actively constructs or builds new ideas or concepts based upon current and past knowledge or experience. Because learning in the constructivist view is so entwined with one's experiences, a primary role of the teacher is creating learning environments, in which students' learning experiences are authentic representations of real practices in applied settings (Carey & Dick, 1990). Ormrod (2003) who states, "learning involves constructing one's own knowledge from one's own experiences," (p. 227) continues by positing that constructivist learning, therefore, is a very personal endeavor, whereby internalized concepts, rules, and general principles may consequently be applied in a practical real-world context. Ormrod (2003) also states that in constructivism the faculty member acts as a facilitator who encourages learners to discover and construct knowledge by working to solve real life problems or examples. In providing adequate structure (while maintaining the abstract), we could be assured that we would "lose" few students and that students would be able to draw on their own [limited] experiences in order to build understanding (Cavanagh, 2011) and reach beyond the information actually provided (Kearsley, 2011) as they begin the transition from student to medical officer.

A reflection assignment and review/debrief would be required (Bochennek, 2007) in which the experience would be transformed into permanent lessons for the student.

EXERCISE DESIGN ELEMENTS & TOOLS

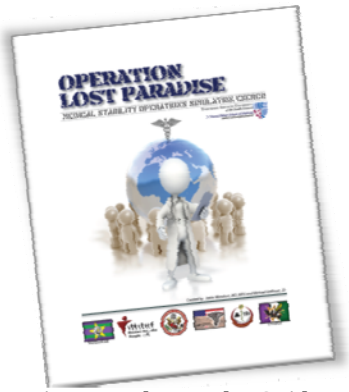

Figure 1. The Faculty Guide

The Faculty Guide

The integration of faculty along with subject matter experts is a critical element of the exercise. Details of the exercise, along with very specific guidance for participating faculty are provided in a comprehensive faculty guide, which is available on request from the author. While the best way to understand the exercise is to participate in it as a faculty member, as Kolb's experiential learning model would predict, this paper provides a brief description of the elements that make up the exercise.

Modularity

OPERATION LOST PARADISE is designed in a modular manner to provide flexibility in its implementation. Any individual iteration of the exercise may have different needs which could drive the inclusion of tailored learning objectives. Changes in objectives could be identified because of particular student body experiences, changes in law, or even current events. Time constraints may demand a simpler exercise, or if time allows, a more complex scenario may be desired. The time available, educational goals, student body, and complexity can all be carefully modulated by the selection of scenario, stakeholder groups, negotiation matrix, and roles in order to create the desired effect.

Role Play

This exercise uses a discovery learning approach that hinges on role-play. Students are assigned to one of several stake-holder groups (Figure 2) and adopt an identity as a "card-carrying" member of this group. A two-part role card (Figure 3) is issued which gives the student the basic background and agenda of the group on one side while describing his individual role on the other side. Individual roles are stereotypical personalities which may be encountered within the group and are intentionally designed to amplify these caricatures to exaggerate the intra-organizational conflicts that may arise. Organizational role information provides separation from real-world biases about organizations which may interfere with learning.

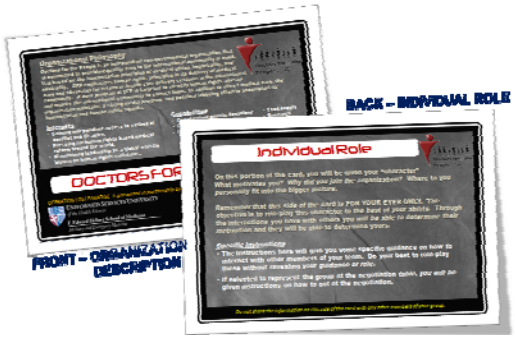

Figure 2. Individual Role Cards

Props

To assist students in getting into character, props are provided to help identify each of the stakeholder groups and assist students in temporarily shedding their real personas for the duration of the experience. They are there to improve the quality of role play and antidotal feedback says it has aided tremendously in the emotional buy-in. The intent is to connect the academic learning with the limbic axis in a way that translates into long-term learning. The use of similar props or "costume" items has been described in medical education where students wear doctor's attire during role-play based skills labs (Nikendei, 2005). With similar purpose, in OPERATION LOST PARADISE, they are used to intensify the role-play to improve the overall educational experience.

Stakeholders

Several notional stake-holder groups (Military, Interagency, Non-governmental Organizations(NGOs), and International Governmental Organizations(IGOs), and Local National Civilians) are created from the ground up including vision statements, graphics, logos, and "costume" to endorse a cross-cultural learning environment and allow students to observe directly the intra-organizational and inter-organizational dynamics inherent in Civil-Military operations. The facilitators include Subject Matter Experts who have experience with the real-world analogues of the various stake-holder groups, and they provide guidance and perspective throughout the exercise.

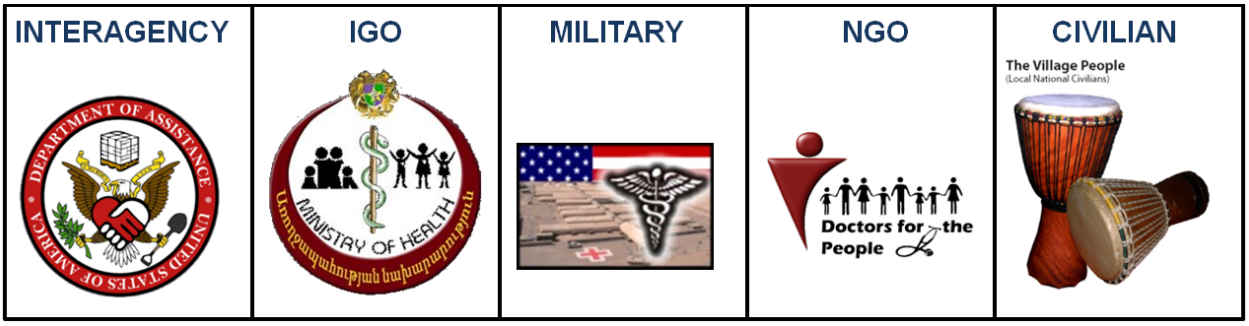

Figure 3. Stakeholder Groups

These stake-holders are intended to be used in a plug-and-play manner in order to meet the intent of tailored learning objectives for any given iteration of the exercise. Based on the situation used (or newly created), the exercise director may want to use as few as two of these groups or all of them. The ideal small group size for each stake-holder group s is 4-5 students per group, but as designed the exercise will accommodate up to eight students per group.

Note: Special care was taken in the development of these notional stake-holder groups to avoid reference to ACTUAL organizations, groups, units, and nationalities. This was done for two reasons. The first was to keep the experience in the abstract, focusing on principles versus specific dynamics of working with an individual organization. The second was to avoid inadvertently casting negative stereotypes towards specific organizations based on potentially inaccurate role-play. The exercise's intent is not to teach them how to work in or with a specific organization, but rather to increase awareness and respect for the contributions that each of these groups make toward bettering humanity and to pull students above their pre-conceived notions and stereotypes of what each organization may be about.

Factions

A set of four "factions" represents a fractionated country along tribal and social lines similar to that seen in most nations. *FACTIONS* are assigned to students using a standard deck of playing cards (a customized deck similar to the role-cards is under development) where each card suit represents a different *FACTION* (Figure 4) and the rank of the cards represents the strength of affiliation with that faction (e.g. A King or

Suit: / Faction:	♥ Ganiks	♦ Nathite	♣ Malvani	♠ Ke-ví	Wears the Faction Button?
King-Ace *(Council)*	You are on the official tribal council, and are well respected as key leaders in the community. You are recognized throughout the country as a leader and have regular media appearances advocating for your faction. You adhere STRICTLY to all traditional practices of your culture and are seen by outsiders as extremists and are poorly understood.				Yes
Jack-Queen *(Zealot)*	Family stakeholder-Primary sense of identity and source of family wealth is exclusively connected to your heritage. You adhere STRICTLY to all traditional practices of your culture and are seen by outsiders as extremists and are poorly understood. You play a key role in your local community.				Yes
6-10 *(Believer)*	Either employed by or agrees that the cause is just. You may or may not earn your living through the community, but generally try to support those of kindred heritage. Willing to work with the other groups, but you would not join. You do your best to be sensitive to other belief systems and ethnic backgrounds.				Only at the Round Table
2-5 *(Follower)*	Some association with or knowledge of the cause. Would not take risk for the cause unless other rewards were involved. You may even find your connection with this heritage a nuisance and would readily disavow your heritage if necessary.				No

Figure 4. Factions Matrix

Queen might be one of the national recognized leaders of that *FACTION* while a deuce might be someone who is reluctantly affiliated through his family lines but embarrassed to admit it).
FACTIONS is an optional layer for the exercise which provides a means to add complex cultural dynamics into the exercise. This module is intended for more sophisticated audiences or repeat iterations of the exercise. It specifically targets cultural competency learning objectives by adding a cultural layer of agendas and conflicts on top of the basic stake-holder group dynamics.

Negotiation
A negotiation platform is employed to provide cognitive structure (Kearsley, 2011) to the exercise which primarily otherwise resides in the abstract realm.

Students are given a period to interact within their stake-holder groups by brainstorming and developing negotiation strategies. They are then taken to a negotiation table or "Round Table Summit" where they are able to see how organizations interact with each other and experiment with their own strategies.

The structure added by the negotiation process addresses a problem observed in the majority of medical students who exhibit particularly concrete thought patterns and frequently have difficulty addressing abstract situations that do not have clear-cut "right" or "wrong" answers. Negotiation serves as "the glue" to hold the exercise together and provides a substrate for the core learning objectives and keeps things moving so that students do not stagnate. Although negotiation skills are an important secondary learning objective for military officers, this process is a means to an end and not an end unto itself for this exercise.

Negotiation Worksheets

Worksheets are provided to facilitate the student small group work. They are divided into two sections ("before the Negotiation" and "After the Negotiation") which present a series of structured provocative questions to kick-start the students' group discussion and move them in the desired direction to avoid time wastage.

Scenario Sheets

A brief single page scenario sheet is provided to students to set the stage for the exercise. These are intentionally sketchy to keep the student focus on the interpersonal interactions and remain in the abstract. Four scenarios are provided in the faculty guide, but they can be easily modified to create additional scenarios to meet different needs for the exercise

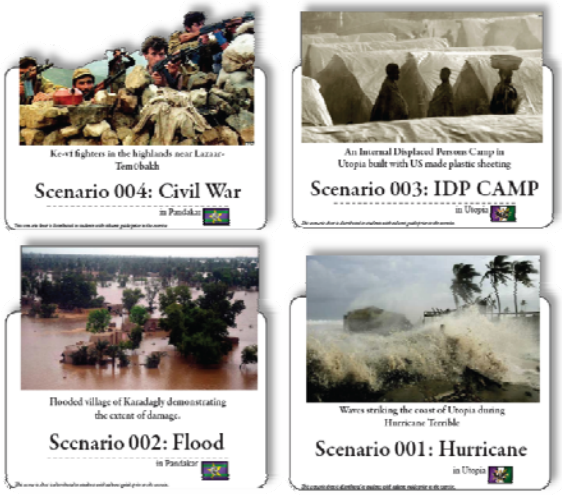

Figure 5. Scenarios

Interactive PowerPoint Playbook Slides

A set of PowerPoint "Playbook" slides is provided that uses a series of Visual Basic macros to pre-program the flow of the entire lab. These slides provide faculty standardization during all phases of the exercise and automated flow of the negotiation process while simultaneously adding to the ambience.

Debriefing and Reflection

Towards the end of the exercise each small group is tasked to prepare a formal debriefing which is presented to the larger group of students after the negotiations are over. A worksheet facilitates their work, but the brief is primarily focused on their key strategies and eye-opening moments that occurred throughout the exercise. This initial reflection piece is intended to bring their initial discoveries out of the abstract into the concrete realm to provide immediate "take-home" results.

During the debriefing, faculty are cast in a facilitator role and are encouraged to follow established best practices for facilitation, such as keeping students focused on the learning activity and providing support and reinforcement. The faculty are reminded to allow the students to create their own session without letting it deteriorate into a "teaching moment" or "lecture" controlled by the faculty member. This debriefing does however, provide an effective environment in which faculty may provide guidance and mentorship to the students where needed.

OUTCOMES

It was quickly evident that OPERATION LOST PARADISE was different than other training events. . To begin with, students were clearly engaged. Even the ones with the *bad* attitudes were fully engaged and were active participants in the learning environment. Anecdotal student feedback was overwhelmingly positive.

Overall, students expressed a sense of "A-HA" "I understand what [you] were after" stating that Lost Paradise "was extremely effective." From a course director's perspective, this was success enough. It appeared from this anecdotal evidence that students honestly began to gain an awareness of the complex operational environment that they would soon be entering. There was no question in observing the activity that it was effective in breaking down stereotypes and improving their attitudes and appreciation of the contributions to humanity made by the other (non-military) stakeholder groups and at the same time an appreciation for the humanitarian role that the military plays in stability operations. Examinations revealed that students also developed a solid grasp of basic principles and knowledge associated with interagency coordination objectives—better than when this material was presented in lecture format.

Even though our students have very little life-experience observing the previously described dynamics in the real world, and generally do not have the background to have been exposed to them, the exercise allows students a facilitated extrapolation of the real life experiences which are reproduced with amazing fidelity in the behaviors, dynamics, and cultural features routinely seen in interagency and NGO coordination. The additive effect of props and role-play with the other structural elements of the exercise has been profoundly effective in producing a positive, engaging, and fun learning environment.

This year, we conducted a formal Pre/Post survey study design to evaluate knowledge acquired during the exercise. Overall students walked away with a decreased level of confidence in addressing complex issues on the battlefield, indicating better understanding of the complexity of the environment and indicating the desired effect (decreased over confidence in individual abilities). Open-ended response indicated considerably more developed thought process in reference to situations likely to be encountered by military medical officers. There was also significant improvement in the maturity of responses proffered after the exercise as compared to before. It was clear that confidence in negotiation skills increased and that students developed a decreased reluctance to seek advice and counsel in ethically challenging situations through the exercise. All of these are desired effects. While these results are very preliminary, they are encouraging.

Plans are underway to conduct more rigorous assessment of attitude change and cognitive effects of this exercise in the upcoming year.

DISCUSSION

Student engagement in the classroom is critical to the success of the curriculum. The use of role-play is an effective tool in accomplishing this goal. By capturing student buy-in in the exercise through enjoyable game-play, students are expected to perform better and get more out of the experience (Nikendei, 2005). This positive student engagement allows the exercise to tap into an entirely different level of learning that escapes the traditional didactic approach seen in the standard university setting.

We agree with Nikendei and others that role-play through simulations such as OPERATION LOST PARADISE is an effective way to combine multiple skills, with knowledge-based, and attitudinal learning objectives into a single high-yield learning activity. Simulations such as this also have the additional merit of increasing student confidence (Cooke, 2008) and exposing students to a wide spectrum of perspectives and skill sets which are difficult to teach with traditional classroom methods.

Role play is a low tech, low cost alternative to high-fidelity simulations which are equally effective but prohibitively expensive. It is also scalable to a large variety of scenarios and large number of students (Nikendei, 2007). With training budgets increasingly shrinking, and time constraints on training increasing, maximizing both time and cost for education is critically important.

OPERATION LOST PARADISE creates an immersive environment where students are able to gain experiential learning in abstract areas at low risk, which is an important element of the use of role play in education (Nikendei, 2005). High level communication skills which are critical for physicians (Moser, 2009) are attained through the role-play and interpersonal interactions that are created by this realistic simulation which covers a large area of academic ground in a short amount of time.

The flexibility of this exercise design lends itself to use in a wide variety of contexts and environments.

Our hope is that this methodology will find applicability across the full spectrum of military, governmental, and civil organizations for training and preparation for Stability Operations and inter-organizational coordination in all disciplines and will provide effective means for breaking down barriers to effective coordination through enjoyable interactive training experiences. It will also encourage participants to think in a more critical and reflective way about stability operations, the participants in the operations, and their own strategic role in the complex environment of stability operations.

CONTRIBUTORS

Michael Hoffman, JD is co-author of the OPERATION LOST PARADISE faculty guide. He contributed to essential elements of the simulation design and core concepts of the educational design. He is an Assistant Professor with the United States Army Command and General Staff College at Fort Belvoir, VA and also holds faculty appointments as associate faculty, The Johns Hopkins Bloomberg School of Public Health, and Assistant Professor at the Uniformed Services University of the Health Sciences. He is an attorney with over 30 years of civil and military experience in the field of international law, human rights, and humanitarian protection and has published extensively on these topics.

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