Problem Discovery And Problem Solving In Unstructured Situations: Using The Pan-Pacific Enterprises Simulation With University Students

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ABSTRACT

Simulations and games provide students with real-world experiences in a safe, controlled environment. Properly designed exercises can increase the effectiveness of classroom instruction and promote higher-order learning. Pan-Pacific Enterprises: Strategic Decision Making (2003) is a problem solving and communications simulation suitable for undergraduate and graduate students. Students are given a resource allocation problem and told to solve the problem in small groups outside of class. In class, each group has the opportunity to integrate its small group solution into a company-wide strategic plan. The core problem of the simulation is that the various groups are given different goals so they arrive at different solutions. These differences provide the entire class with an ambiguous problem with no obvious solution. The class as a whole has to develop a method to integrate the sometimes conflicting solutions.

INTRODUCTION

Simulations, games, and cases have been used in educational situations for many years. They are valued for many reasons. In general, students retain class concepts and theory better when they participate, discuss, or otherwise act differently than when they passively listen or watch. Students learn more with exercises that require active learning. Simulations, games, and cases can be designed to explore decision-making, problem identification, communication, competition, and cooperation. These exercises can be designed at various levels of intensity. Stress can be a valuable tool that enables students to achieve higher levels of performance than otherwise possible. These exercises can provide strong incentives for superior performance through stressful tasks and situations.

While many simulations, games, and cases used in educational situations are valuable for teaching theory and principles, some provide more benefit than others. One group that may have limited benefits is the group of deterministic games. Deterministic games use a limited number of the many different competing models or theories to describe the real world. The limitation of these games and simulations is that they reinforce that limited subset of models or theories to the exclusion of those that are omitted. This limitation is often present in computer-based games where the limitations of programming make it difficult to include more than one model. Open-ended games and simulations allow students to consider a wider range of theories or models that describe the real world. They encourage the discovery and analysis of previously unconsidered models. This permits realistic behavior instead of game-constrained behavior in the consideration of complex problems.

This paper describes the use and educational benefits of the *Pan-Pacific Enterprises: Strategic Decision Making* simulation (Brozik & Zapalska, 2003) in both the undergraduate and graduate curricula as a tool for teaching communications skills, cooperation skills, problem identification, and conflict resolution. PanPac is an open-ended

simulation that allows students to apply a full range of theory and models to a management problem that is only loosely defined.

DESCRIPTION OF THE SIMULATION

The discipline of management is about handling conflict in organizations. The PanPac simulation provides students with a realistic business scenario that requires them to deal with organizational conflict. It is the purpose of PanPac for the students to recognize conflict and determine a solution to the scenario.

PanPac is designed to be used at the beginning of a capstone course. Students should have a basic foundation of business and analytic skills in order to get the most out of the simulation. Students are assigned to one of 5-10 functional planning groups within a multinational firm. The assigned task is to determine how to distribute three types of manufacturing facilities in each of three geographical regions. Each functional planning group is given a constraining mandate based on its functional specialty. Unbeknownst to the students, the mandates provided to each group are incompatible and result in different solutions to the problem of locating the manufacturing facilities. The real problem is for the students to communicate with each other, discover the discrepancies between their goals, and ultimately determine how best to distribute the company's manufacturing facilities.

The information provided to students is a briefing book designed to create both goal incompatibility and communications difficulties. The data provided in the production, resource, and cost tables were generated to ensure that the separate groups come up with different allocations for the production facilities. The functional goals require each group to focus on measures that are not comparable across groups. For instance, some groups are told to minimize transportation, labor, or production costs, while other groups are told to build in markets with low forecasted costs or high future demand for the product. The result is that every group is assessing performance using non-comparable measures.

There is no right or wrong answer to the main task of allocating production facilities. Whatever answer the class arrives at is the answer. The real issue is the process of arriving at that answer. The students must recognize the dilemma inherent in the data, develop common ground from which to proceed, and create a single plan for distributing the company's production facilities. The simulation provides the instructor with the opportunity to evaluate the students' communication skills and their ability to cooperate, negotiate, and identify and solve problems.

PanPac can be run in a single 75-minute class period, which provides the instructor with scheduling flexibility. The simulation can be run in a 50-minute period, but this requires that the instructor have enough experience to assure that the play moves along at a brisk pace. It can be played in classes of 20-40 students with the students divided into 5-10 teams of two to five members. With undergraduate classes the groups should be no fewer than three. In graduate classes the groups can be as small as two. In both undergraduate and graduate courses, the maximum group size should be five. The number of functional groups can be chosen to accommodate the class size and group constraints.

Students are provided with the briefing book and their group's functional area instructions several days prior to the simulation and instructed to follow the instructions listed under "Planning Process" and as provided in their functional area instructions. Each functional group is instructed to come up with a solution and be ready to justify it to their fellow students. The students' time in class is spent discovering the differences in the group plans, finding middle ground, and working toward a company-wide solution.

The instructor should provide little or no guidance that might encourage the students to either cooperate or compete with each other. Such behaviors should be allowed to arise spontaneously but should be noted by the instructor for the debriefing session. This is particularly important if such behaviors have a positive or negative impact on class performance.

At the beginning of play, the instructor charges the entire class to provide a single strategic plan for the company by some deadline; 45-50 minutes is usually enough for the class to discover the problem and come up with a

solution. The instructor must refrain from providing any other guidance or instructions. Students may request additional guidance from the instructor, in essence, asking how to solve the problem. The instructor should force the students back to the briefing book and the strategic plan mandate given at the beginning of class. The decision process may seem disorganized at the beginning, but it will eventually settle down as the students discover what they need to do.

The simulation can be allowed to run as long as desired provided the instructor reserves at least 10-15 minutes for discussion at the end. A deadline, set at 15 minutes prior to the end of class, terminates the negotiating portion of the simulation. At that time the class must provide the instructor with the company's strategic plan. Even if the class has not completed the plan, the simulation must be stopped and the class debriefed. The debriefing session focuses on the decision-making process as opposed to any tangible solution provided by the class. The instructor helps the students understand the incompatible nature of the imposed constraints, the differing group opinions, the need for problem discovery, and possible characteristics of a good solution. Students are made aware that this situation can and does exist in many organizations and that recognizing it is an important skill. They also need to know that in many cases interpersonal interactions may be more important than information processing skills.

THE DIFFICULTIES AND ADVANTAGES OF USING OPEN-ENDED GAMES AND SIMULATIONS

Open-ended, non-deterministic exercises can be a challenge for the instructor. Since there are no specified outcomes, it is necessary to focus on process, and the process is never the same. PanPac requires familiarization with the use of in-class simulations and teaching unstructured problem identification and solving. The simulation itself is deceptively simple. It looks like an operations management style linear programming problem. It really is a communications and problem solving simulation. This chameleon-like quality gives the non-deterministic simulation the ability to mimic real-world conditions.

Non-deterministic exercises place additional burdens on the instructor, but the end results of such a simulation can be quite valuable. It is possible to gauge the caliber of the students by observing their approach to the unstructured problem. This provides information that can be used throughout the term relative to the manner in which material can be presented to the students. The exercise also provides a framework on which course material can be structured. Since the exercise is common to all students, it can be used as a touchstone for later presentations and discussion.

Another advantage of open-ended simulations is their flexibility in introducing stress into the environment. Stress and discomfort are valuable learning tools. A person who is comfortable has no reason to change his or her behavior. Discomfort and stress can induce a person to learn and change behaviors in order to return to a comfortable state. The structure of PanPac allows the instructor to vary the level of stress to fit the needs of the students. No matter how comfortable the students become, more stress can always be applied, and more learning can be achieved.

USING PANPAC IN THE CLASSROOM

The simulation *Pan-Pacific Enterprises: Strategic Decision Making* was run in three classes at the beginning of the semester. One class was a graduate-level policy and strategy course, and the other two were undergraduate strategic management courses. While there was some difference in the level of performance between the graduate and undergraduate sections, it was a more a matter of intensity than different behavior. The comments that follow are equally applicable to both graduate and undergraduate students.

The management of the in-class exercise and debriefing are important. Students must come to realize that they need to solve the problem. They must know that every facet of the simulation is being evaluated and that the instructor will *not* provide assistance. The instructor can facilitate the student experience by following the rule "never do anything for a student that a student can do for themselves, and even if the task is beyond the student, provide no assistance." This will force them to think, improvise, and find their own answers. Students who object to being required to work beyond their demonstrated capabilities can be reminded that the real world will make the same

demands. When done at the beginning of the semester, this can set class expectations for student responsibilities for the rest of the term.

The debriefing is the time to examine communications, decision-making, problem solving, and identify learning outcomes and opportunities. Three main areas should be considered in the debriefing: distinguishing symptoms from problems, group communications, and group dynamics. The simulation is designed to disguise the real problem of conflicting functional goals. This makes it important for the instructor to examine how problems are identified. There are many symptoms of organizational and communications problems. One common symptom is that the students "will experience difficulty communicating." Once the problem of communications is brought up, the instructor can focus on why communications were difficult, how to recognize the barriers to communications, and how to resolve communications difficulties. Another problem that should be brought up is the incompatible goals. Each group was assigned a goal that was incompatible with those assigned to other divisions of the company. If discovered, the class should learn how to resolve incompatible goals, understand the characteristics of good goals, and learn how to design better goals. If not discovered, the class will need to reflect on the effect of incompatible goals. Finally, group dynamics should be examined. Cooperative and competitive behaviors should be explored in the context of organizational performance.

INSTRUCTOR OBSERVATIONS FROM PANPAC

The simulation was conducted in three different classes, and in each case there were three different observers. The use of multiple observers is highly recommended. The observer tasked as the leader must assure the smooth running of the simulation. Other observers are free to watch the room from different angles and identify different behaviors. It is difficult, if not impossible, for one person to see everything that is happening between groups of up to 40 individuals. The observers became involved with the debriefing and added their insights to the discussion.

The students generally approached the situation as if it were an operations management problem. They discovered during the in-class portion that they were incorrect. Students began to experience stress as they realized their linear programming solutions would not fit together, and they wanted the instructor to help them. This help was not provided. As the deadline approached, the instructor "turned up the heat" by reiterating the deadline and commenting on the high level of performance that was expected of managers in the company. A few references to "The Apprentice," inadequate performance, or being fired were used to increase the stress level further. Such stress can help an individual focus on the task at hand, but in most cases it caused students to panic.

The students tended to stay clustered in their own group for the first few minutes. If they did not spontaneously start working with the other groups, a reminder of the task and deadline got them started. In cases where a single reminder did not work, a countdown to the deadline was begun.

Various communications methods were employed. Students began by verbally discussing the various group recommendations. Some tried to draft a plan on paper. These methods failed to communicate all information to the entire group. For the greater part of each session in each class, the students were not listening to each other. Even when another group was given the floor for the express purpose of presenting its individual solution, at least half of the class continued to work in their small groups and ignored the information being given. Wider dissemination of the available information would have helped with problem identification.

One efficient communications technique was for the students to use the chalkboard to broadcast their plans. This method of information transfer showed if they read and understood the briefing book. It also indicated the divergent nature of the group solutions. Information control issues emerged, particularly in groups trying to influence the outcome. Some groups monopolized the center of the chalkboard, taking most of the space. Other groups deferred by fitting their presentations in the remaining space. Some groups erased previous groups' results. There was no coordinated effort to consolidate the existing data into a cohesive whole that could be used by all participants.

It is important to note the method of data presentation. Some degree of standardization is desirable so that group solutions can be compared. As students started to realize they had different solutions resulting from different goals, they tried to compromise, force a solution, or find better decision-making criteria. While solutions based on compromise or force are acceptable in this simulation, neither method produces an efficient result in real businesses. The exploration for better decision-making criteria is more desirable. The debriefing addressed the issue of better decision-making criteria.

Leadership and group member roles emerged during the simulation. Some people respond to ambiguity and uncertainty in ways that are different from their day-to-day behaviors. One or more dominant Type-A leaders appeared and tried to direct the group toward a particular solution, usually the one he or she developed. Other students became passive and withdrew their expertise from the group. The instructor had to use some probing questions to get the withdrawn students to reengage in the simulation. Students must be made to understand that a dominant player need not be correct and that it is everyone's responsibility to develop the best solution possible.

In one class, a core of students made up of one representative from each of the various groups formed a circle around which the rest of the students gathered. This core worked to resolve the apparent discrepancies in the group constraints without considering all relevant information. The remaining class members would make suggestions that were ignored by the core group. Eventually the students outside the "inner circle" began to develop their own solution.

All classes got bogged down arguing for one solution over another without being able to articulate a sound reason for any proposed solution. Specific and directed questions probing for sound reasons were unable to reorient the class toward resolving goal conflict. In all three classes, the issue of corporate profitability was never considered. As the groups approached a solution, they were asked if the solution is likely to be profitable for the corporation, and they did not know the answer.

At the end of the session, one of the observers played the role of the company "president" and requested a final solution from the group. A solution was presented, but none of the solutions represented a true consensus opinion of the class. When individuals were questioned whether or not they thought the plan was any good, many said it was not. In each session, the president then began to play "bad cop". Based on observations from all the observers, there was a list of problems that had been identified during the exercise. Items that were specifically noted included the failure of the groups to communicate even when they were in the same room, the quality of the preparation of numerical exhibits, and lack of effective leadership. Each of these problems was identified in detail, and individuals were called upon to defend their actions. When alibis were made, they were quashed. Everyone in the class was held individually and communally responsible for a failed operational plan.

The purpose of this activity was to get class members upset. More senior students often believe that they know almost everything, and this simple exercise showed them that they did not even understand some of the basics. Within a five-minute period, students who felt satisfied with the solution were angry that they were not being praised for their work. Students who were confused were having their shortcomings spelled out without mercy. No one came away unscathed. This is another application of stress, possibly the most important one in the game. By creating stress at a time when students expect to wind down, the debriefing session had more learning potential.

After the president succeeded in getting the whole class on edge, he left the room. This allowed the primary instructor to be the "good cop" and consolidate the learning goals from the simulation in the debriefing session. When there are no outside observers to play the "bad cop" role, the instructor must find a place between the two roles that creates stress and then uses that atmosphere to reinforce learning.

At the conclusion of the president's criticism, the simulation was ended with a distinct statement "the simulation is now over". This conclusion is necessary to compartmentalize the simulation. It will also help students realize that this criticism is part of the simulation, not part of the evaluation.

THE DEBRIEFING PERIOD

There are two important reasons for a complete debriefing following this simulation. The first is to provide closure to the students. PanPac is a stressful simulation that tasks the student's emotions as much as it tasks their intellect. Closure is essential if the students are to move from emotional engagement to intellectual detachment and analysis. The second reason for the debriefing is to identify and reinforce student learning. Immediate reflection on the simulation will help students understand and learn lessons from the experience. Unlike the criticism which concludes the simulation, the debrief is exploratory in nature. During the debrief, the instructor should try to help students explore the design and intentions of the simulation.

Debriefing Topics

The main topics to debrief are problem identification, problem solving, criteria for a good solution, communications, and employee response to criticism. To help students understand the issues of problem identification, the instructor must work from the primary organizational goal of allocating productive resources within the company. Organizational problems exist when there are barriers to achieving organizational goals. Seeing those barriers is the first step to fixing them. The debriefing generally started by asking each group to provide its solution to the resource allocation problem. Each solution was recorded on the chalkboard for everyone to see, and the obvious inconsistencies were identified. Students were asked why those inconsistencies existed. The students then discussed the reasons for the inconsistencies and determined that they resulted from the incompatible goals imposed by their functional focus. Students need to understand that large businesses are complex, rapidly adapting, social organizations where goal incompatibility is common. They need to realize that this is one of the biggest problems they will face as managers. If the groups did not get this far in the simulation, the instructor can help them identify the symptoms of goal incompatibility in terms of what they did not understand and what they felt.

With the problem identified, problem solving should focus on the various techniques the group used or could have used to solve the problem. Such techniques include forced solutions, compromises, or redefinition of the goals. The characteristics of each should be compared and contrasted so that the class understands the costs and benefits of each approach. Recognition of each approach and its characteristics should be emphasized so that it can be identified in an organizational context. Managers should know when some employees are imposing their will on others, when employees are withdrawing, and optimal ways of getting employees to work toward goals that are beneficial for the organization.

While PanPac has no solution, this is rarely the case for a real world organization. The instructor should ask the students for their criteria for a good solution in the real world. Issues such as ethical conduct, organizational survival, and profitability top the list as essential characteristics of a good solution. The instructor can point out that there are extensive differences in beliefs about ethical conduct in society today. Organizational survival depends on long term success in satisfying consumer needs. Satisfying consumer needs is ultimately focused on profitability. Finally, the instructor can ask the students to formulate a set of criteria for good solutions that can be used to judge organizational goals in other contexts.

A discussion of the group's difficulty communicating should focus on symptoms and solutions. Students should be asked what they felt when working within and between groups and how they handled communications difficulties. They must understand that communications difficulties are generally symptoms of other hidden problems. Methods for overcoming communications problems should be explored. The students should be asked to identify for themselves and each other the barriers to communications and how communications might be improved; some solutions might include the use of audio-visual methods of communicating. They should be asked how to determine if a lone individual possesses information important to the situation or organization and to reflect on the various hidden problems that may lie concealed beneath communications problems.

PanPac is a business scenario. Businesses operate with a well-defined purpose and expect their managers to pursue those purposes efficiently. The failure to criticize inefficient managerial conduct would be itself inefficient. Business students need to know that future employers will hold them accountable for their failures as well as their

successes. Just as taking credit for luck is not a sign of strength, taking responsibility for failure is not a sign of weakness. Every group that participated in PanPac reacted adversely to criticism. One group became defensive and hostile. Another made up excuses. Such responses may be expected in academia but rarely are tolerated within business. Exploring student response to criticism, even unjust criticism, is a valuable exercise because it can identify better responses than hostility or excuse making. One such response is to identify organizational barriers to the assigned task so that similar barriers can be eliminated in the future. They will also learn to recognize their own responses to stress so they can develop personal coping responses.

There Is No Answer

During the simulation, many students ask for the "answer" or "solution" to the simulation. It is essential for the instructor to communicate that there is no answer. The instructor should communicate that purpose of the simulation is the decision making process not the decision-making outcomes. To help the students understand the futility of focusing on outcomes, PanPac can be compared to another simulation they might recognize, the Kobayashi Maru. The Kobayashi Maru is a fictional simulation from the movie *The Wrath of Khan* (Bennett & Sowards, 1982). In the movie, the Kobayashi Maru is a test of leadership and character disguised as a tactical exercise. It is described in the movie as the "No-Win" situation. PanPac was designed to be for business what the fictional Kobayashi Maru could or should be for military leadership.

STUDENT FEEDBACK ON THE PANPAC SIMULATION

Students were given 11 questions and asked to write short essays describing what they learned from the simulation. The specific questions are listed in Appendix A. Their comments reveal what they learned during the simulation.

Preparation

Preparedness is important to successful recognition of the communications problems. Groups that fail to prepare for the simulation, for instance those that do not come with a prepared strategic plan, are at a significant disadvantage going into the simulation. The simulation is designed to make well-prepared students struggle. Its effect on ill-prepared students can seem almost cruel. While adequate preparation is essential, it should not be addressed prior to the simulation. Students will make their own investment in preparation. The simulation simply requires them to own the responsibility for that preparation. The lack of preparation should be soundly criticized within the simulation and lessons learned can be addressed during the debriefing.

Students must read and comprehend the material in the briefing book and their functional group goal prior to class. The briefing book is three pages of text and two-and-a-half pages of tabular data. The resource allocation task to be performed is clearly stated. While no attempt to obfuscate the task was made, it is frequently misunderstood or overlooked by many groups. The constraints for each functional group are about one-quarter page each. The time necessary to understand the task varies from about 30 minutes to several hours. Student groups that remember linear programming can generally program and find a solution in anywhere from 30-60 minutes. Algebraic solutions can be manually computed in about the same time.

Many students observed the importance of being prepared. One student who came unprepared stated "I am not sure I ever totally knew what the purpose of the simulation was until it was over." A number of other students reflected that they could have prepared more extensively. A prepared student commented, "I was baffled by the number of people that did not follow the instructions…"

Communications

The simulation requires minimal use of technical skills and extensive use of interpersonal and communication skills. Instructor comments during the debriefing reinforced this. When asked about the lessons learned, students generally emphasized the importance of organizational teamwork and effective communications.

Several students noted that managers require more interpersonal and communications skills while rank and file workers generally need more technical skills. This is the usual division of labor in the modern corporation. Others noted that while managers need some technical ability, they are not generally asked to do highly technical tasks. That is what the technical folks are for. For managerial tasks, communications may be the most important skill.

Stressful Situations

The method of running the in-class portion of the simulation is to mimic a high-pressure corporate board meeting. The instructor (or observer) assumes the role of the Chairman of the Board of Directors. The students are the middle managers. They are told they will be evaluated on both the end result as well as their process. The instructor observes the various groups asking pointed questions where the students are struggling in an attempt to get them to think critically about the process. While this can be very stressful and frustrating to the students, many rise to the occasion.

Students responded to this method of conducting the simulation in a variety of ways. One outspoken student provided several retorts and expletives reflecting general frustration. While appropriate for neither business nor classroom, several students sympathized while commenting on the necessity to remain calm even in pressure situations. Other students commented that the pressure situation was not commensurate with the calm, respectful, learning environment to which they had grown accustomed. Handling student frustration is a difficult and sensitive issue. Student expectations of benign nurturing in the classroom environment may aggravate the stress present in the simulation.

Problem Recognition

Several students who had taken previous classes with one observer immediately recognized the simulation as a "wolf in sheep's clothing" because of that individual's reputation with games. Many other students, without this inside information, never recognized the problem or recognized it too late. Others recognized the problem early but were unable to convey that knowledge effectively to the others in the class.

Realistic Situations

In organizations, groups are frequently assigned the task of making recommendations for their managers. Managers want to be sure groups make good decisions. PanPac is designed so that the students have to rely on themselves. One student offered the comment that the simulation was probably designed to mimic the pressure of the real world. Others noted that the instructors would not provide assistance. The only source of assistance was from group members and the class as a whole.

Insufficient Student Preparation

One interesting trend comes out of the student feedback. Many students admitted honestly that they failed to prepare adequately for the simulation. This lack of preparation manifested itself in one of two ways. Students either blamed the instructors and simulation for being vague and hard to read, or they took responsibility for their lack of preparation.

While this was obvious to the instructors running the simulation, it was interesting that some students were forthright. The instructor's responsibility is to make sure that the consequences to students are similar to those in the real world where employees are reprimanded for inadequate performance. Part of this feedback can be accomplished during the simulation and in the debriefing. The remainder of the feedback should be administered throughout the semester. Revisiting inadequate and insufficient student performance in PanPac can be used to motivate students to exert sufficient performance for assignments throughout the semester.

INTEGRATING PANPAC THROUGHOUT THE SEMESTER

PanPac's value as a learning experience continues throughout the semester if the instructor can integrate it into the course learning objectives. The importance of understanding a situation through intense background preparation, distinguishing symptoms from problems, problem diagnosis and recognition, developing and evaluating alternatives, and implementing solutions are important objectives that must be understood each time a manager is faced with an unstructured problem. These objectives can be applied to both short and long cases in courses dealing with business strategy, business and society, and business ethics.

Simple references to PanPac can help students understand the difficulties faced by real managers dealing with similar unstructured problems. "Remember in PanPac when you had trouble perceiving the problem…."; Reminders such as: "Remember in PanPac when you had difficulty communicating…."; "Remember in PanPac when you felt…."; can help students viscerally understand the difficulties faced by managers dealing with limited resources, insufficient time, and uncertainty.

CONCLUSION

Pan-Pacific Enterprises: Strategic Decision Making provides a number of benefits to students. It is a communications exercise that will challenge the best of communicators. It provides an ambiguous problem that will challenge the best problem solvers. It requires only the most basic of technical skills. It is ideal for use in capstone and integrative classes to either start the semester or complete a course of study. The ability of students to come up with a good plan is really immaterial to the success of the simulation. Students can learn many valuable lessons even if they cannot provide a solution at the end.

During the course of the semester, each class that participated in PanPac also participated in numerous cases analyzing business problems. Every opportunity was made to use the lessons learned from PanPac in these cases. Students will viscerally remember the difficulty communicating and the resulting stress of PanPac and be able to understand why managers may have a difficulty making decisions in situations where resources, time and information are constrained. In effect PanPac becomes a metaphor for understanding real world business problems and constrained decision making.

The use of PanPac in three different classes proved to be a good experience. Students were made active participants in their own education, and the lessons learned during the simulation were carried throughout the term. Simulations and games can be integrated into the class structure to provide an alternative educational mode. PanPac demonstrates that the value of these exercises can last throughout the term.

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APPENDIX A: DEBRIEFING QUESTIONS

1. How much time did you devote individually to solving your group's goal as specified in the handout?
2. How much time did you devote as a group to solving your group's goal as specified in the handout?
3. After preparing for the in-class group integration, were you confident of your group's solution?
4. Did your confidence in that solution change during the in-class discussion?
5. Did you rely exclusively on the materials in the briefing book and your group's handout? If not, what other information and what other factors influenced your decision?
6. Based on your experience in the simulation, which type of skills do you think are more important when working for a company, technical skills or interpersonal skills?
7. Based on your experience in the simulation, which type of skills do you think are more important when running a company, technical skills or interpersonal skills?
8. At what point did you start to suspect that PanPac was really a "problem recognition & definition" exercise? When did you know it?
9. What are the other purposes of this exercise? (list all that seem applicable)
10. As a future manager, what lessons should you take away from this exercise?
11a. Given what Steven Kerr (Kerr, 1975; 1995) said about rewards, what strategic issues are illustrated by the PanPac Exercise?

or

11b. Participation in the PanPac simulation suggests that corporate incentives for success might have been designed badly? Elaborate on this notion.

All students answered questions 1-10. Question 11a was given to graduate students who read "On the Folly of Rewarding A, while Hoping for B" (Kerr, 1975, 1995). Question 11b was given to undergraduates who had not read that paper.