Responsible Conduct of Research

Role Plays

Whistleblowing Data Management

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Using Role-Plays in Ethics Education
Role-playing can be a powerful learning experienceand stimulate lively discussion and debate. However this active learning technique, which most people are unfamiliar with, can also make participants feel awkward and uncomfortable at first. The key to its use is to introduce and frame the technique to any group before starting.

Note to Moderator:
After the workshop participants should receive as a handout the section labeled "Resources." That section also includes a summary of the role-play.

Introduction (2-3 minutes)
We generally start a session by talking about the technique and why we use it. We often label it as "experiential" or "active" learning as we talk about it. This introduction can be done relatively quickly and will improve the participation and comfort level of the group.

Points we make include:

- Role-playing is a type of active learning technique. As such, it promotes deep learning, long-term retention and can be very memorable and powerful
- Participants might feel awkward at first, but they are encouraged to participate as fully as possible. The more authentically they engage in their role the more they will learn
- There are no "right" answers in role-plays
- Participants are not being graded
- The purpose of the exercise is to provide an active learning experience in a safe setting where ethical issues can be explored without being about a real problem
- Because role-plays (or simulations) are participatory, educators believe that the information learned will be retained longer and will be more easily accessible in the future if it is needed
- This training will help participants be prepared to recognize and address ethical problems. By grappling with the sorts of ethical problems that arise regularly in professional life in this safe, non-threatening role-play setting, participants can think through the problem and gain some skills and tools to use should they ever encounter such a problem. We think of this as an "inoculation model." By practicing these conversations you become "vaccinated" and thus better able to resist confusion and anxiety when questions of ethical research arise
- These scenarios are based on real situations that real people encountered (You cannot make this material up)
- After the role-play we will discuss the experience. We also will discuss the outcome of the real-life situation upon which the role-play is based, where possible
- For anyone who is truly too uncomfortable to try it out, we have an observer role. The observers are expected to take notes as they watch others do the role-play and then to provide comments back to the other participants in their group at the end of the process.

Instructions (3-5 minutes)
After introducing the technique, we give the group instructions and an overview of the procedures.

1) Materials should have been copied in advance on different color paper, so the roles are easy to distinguish. For example, the professor role might be on blue paper, the student on yellow paper, and the observer role on green paper. **Participants know only what is in their own roles, and have no information on what is in the other roles; that comes out as the session proceeds. Decide in advance whether you will be distributing the discussion starters with the roles. If you are, the discussion starters for each role (and only that role) should be on the same color paper as the role.**

2) Ask participants to divide into groups of two (professor/administrator and student) or three (professor, student, and observer). Each group must have one each of the two main roles (professor/administrator and student).

3) Announce that everyone will start together and end together. (This keeps the noise level down while directions are being given.)

4) When partners have been selected, hand out the roles and discussion starters. Participants are not obligated to use the discussion starters, but it does make the exercise less daunting for many.

5) Verify that every group has two or three people and that each one has a different color paper.

6) Ask participants to leaf through their materials: each should have role information and a role-play starter. Using the role-play starters is optional, not required. They are provided to help those who need a little guidance to ease into the role-play.

7) Announce the amount of time available. 10-15 minutes is plenty of time for these short scenarios.

8) Provide a bit of time for individual preparation. Suggest that participants make notes of what you want to find out, and what your first sentence will be.

Optional step:
If time and space permit, it can help focus the role-plays and make sure all aspects of the scenario are covered if you verbally review the key points of the scenario and the participants' role. To do this, take one group — all of whom are playing the same role — out into the hallway and keep the other together in the classroom. If there is only one discussion leader, appoint one member of one of the groups to read the role information aloud to the group while the discussion leader works with the first group. When the leader finishes

briefing the first group, leave that group to discuss the role among themselves and go brief the second group and answer any questions they might have.

9) Start the role-play. Walk around the room, listening to various groups to get a sense of topics discussed and how the activity is proceeding. Stop the process after it appears that most have exposed the main dilemma and have spent a little time talking about how to approach it.

10) Make sure at the end of the session that participants receive the "Resources" sheets as a take-away handout.

Discussion (30-45 minutes)
After the role-play the moderator should lead a discussion. Follow the discussion guidelines provided following the role-play. It's also useful to plan for a few concluding remarks at the close of the session to consolidate the discussion.

Tips for Leading Discussions
Opening questions and guidelines for leading a discussion are provided below.

- After the role-play, discussion usually takes off on its own in light of the experience. However, if no one speaks right away, don't worry.

- After you ask the opening question, let at least 10 seconds go by to give people a little time to volunteer. When you are at the front of the class 10 seconds feels like eternity, but that amount of time allows participants to begin to gather their thoughts and work up the nerve to respond.

- If the discussion is really lagging at any point, a useful technique can be to ask participants to discuss whatever the proposition is with their neighbors. This "buzz groups" approach can build up enough confidence that people will start talking.

Role-Play Discussion Guidelines: Moderator

General questions to ask:

After the role-play is over and the groups come back together, ask the participants what was going on in this interaction. Work to elicit the whole story, by alternately asking those who played each role what their concerns were:

- For those playing the student, what were their concerns?
- Ask those playing the faculty member how they understood the situation.

Then summarize for the group the essential facts of the two main roles. If there were recurring themes in the groups you picked up while the role-play was under way, work those into your discussion. Ask the group how closely the two versions that emerged in discussions match. If they do align, what was the most helpful in eliciting information and establishing trust, leading to a useful and constructive discussion? If they do not match (you may have some groups in each category), what kept the two versions from aligning? Was information missing? What kept it from coming out?

Other questions to ask:

- What were the most helpful things that were said?
- What do people on each side wish the person on the other side had asked or said?

It can be helpful to make a two-part list on an overhead or chalkboard while you are eliciting information, nothing the concerns of the faculty member and the concerns of the student.

If you had any observers, ask them what they saw going on; see if anyone picked up signals the participants missed. What were they? What difference might it have made if the missed signal had been caught? Ask the group to identify the issues that are presented in this role-play.

Specific questions to ask:

It also can be useful to ask what each participant *might* have done earlier to head off problems.

- What could the faculty member do (for example, set expectations and boundaries clearly or supervise the lab more closely)?
- What might the *student* do in this situation?
- Is there someone else to whom the student might go for advice?

What issues are raised here? What policies apply (tailor this discussion based upon the local policies at the institution or in the department where the workshop is taking place).

Follow with a brief explanation of FFP (Fabrication, Falsification and Plagiarism), and what steps the local policy requires. If time permits, go through the steps in "How to Blow the Whistle and Still Have a Career Afterwards" (Gunsalus, Science and Engineering Ethics).

Has the student taken every reasonable precaution?

Principles that apply to whistle-blowing: *(NOTE* THESE NEED TO BE REVIEWED!!)

- Data should be carefully collected and kept

- Compliance obligations relating to funded research and financial reporting also should be carefully collected and kept.
- Whistle-blowing, which refers to reporting suspected misconduct, should be done in a cautious and responsible way.
- Ideally, whistle-blowers should never be afraid to come forward with questions of misconduct, as they should be supported by their institutions and fellow researchers. However, there are many reasons why someone would want to avoid bringing forward an allegation of misconduct.
- Whistle-blowers (even the term has negative connotations) risk their future careers, reputations, and often experience psychological distress, among other possible negative consequences.

If time permits, go through the steps in "How to Blow the Whistle and Still Have a Career Afterwards" (Gunsalus, Science and Engineering Ethics). Has the student taken every reasonable precaution?

Close with a summary of the real story, which is told below, following the role-play summary.

RESOURCES
Role-Play Summary

This role-play involves data mismanagement in a research lab. The graduate students suspects that the post-doc fabricated experimental results, which is a form of research misconduct. The realization or suspicion that someone has engaged in research misconduct is one of the most difficult situations researchers face. However, someone who has witnessed misconduct has an obligation to act and report this behavior. Reporting the misconduct, which also known as whistle-blowing, should be done in a cautious and responsible way. Ideally, whistle-blowers should never be afraid to come forward with questions of misconduct, as they should be supported by their institutions and fellow researchers. However, there are many reasons why someone would want to avoid bringing forward an allegation of misconduct. Whistle-blowers risk their future careers, reputations, and often experience psychological distress, among other possible negative consequences. Even the term whistle-blower has negative connotations.

If you ever suspect research misconduct, you have an obligation to report it. However, you should make sure that you handle the situation in the best possible manner for the sake of your career and the other people involved. If handled correctly, it is possible to report research misconduct and still have a successful career afterwards (Gunsalus, 1998). Also, any paper discovered to have incorrect information should be retracted and errata should be issued for the benefit of other researchers.

Real Story

After the professor finally understood what the student was saying and overcame the idea the student was lazy or stubborn, the professor verified the student's reports about the supplies and malfunctioning equipment. Then the professor consulted with the appropriate authorities on campus. A research integrity inquiry and then an investigation followed. Although a suspicious fire in the lab destroyed the post-doc's original notebooks, the investigation concluded that the post-doc had fabricated the results. The human dynamics of this situation were very awkward: the faculty member was embarrassed and felt he had lost face; and the student had conflicting emotions. The head of the department was extremely helpful in working with each to help them realize they were on the same side, and each had been the victim of the post-doc—in short, that they were in it together.

The finding was reported to the federal funding authorities, who also imposed a sanction on the post-doc. The original paper was retracted, and the professor was counseled to supervise his lab more closely. Although it took some effort, the relationship between the professor and former student (now a professor) was repaired, and they are still professionally close today. There was a difficult period for everyone, however. The other students in the lab were also upset and unsettled: the department asked an emeritus professor to spend some time being available as a sounding board for the students.

Although the incident was embarrassing and painful for many people, the lab members all survived the incident and went on to productive careers in science. The post-doc dropped out of grad school but later went to medical school.

Whistle-blowing Resources

Gunsalus, C. K. (1998). How to blow the whistle and still have a career afterwards. *Science and Engineering Ethics, 4*, 51-64.

University of Illinois Office the Vice Chancellor for Research
http://www.research.uiuc.edu/ai/

Office of Research Integrity
http://ori.dhhs.gov/

Responsible Conduct of Research Resources

Columbia University
http://ccnmtl.columbia.edu/projects/rcr/

Committee on Science, Engineering, and Public Policy, National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, *On Being a Scientist: Responsible Conduct in Research*, National Academy Press, Washington, D.C., 2nd ed., 1995.
http://www.nap.edu/readingroom/books/obas/

ORI Introduction to the Responsible Conduct of Research,
http://ori.dhhs.gov/publications/ori_intro_text.shtml

Online Ethics Center, National Academy of Engineering
http://onlineethics.org

Research Ethics Modules, North Carolina State University,
http://www.fis.ncsu.edu/Grad/ethics/modules/index.htm

Macrina, F. L. (2005). *Scientific Integrity: An Introductory Text with Cases* (3rd ed.). Washington, D.C.: American Society for Microbiology Press.

North Carolina State University Open Seminar
http://openseminar.org/ethics/screen.do

Shamoo, A. E., & Resnik, D. B. (2003). *Responsible Conduct of Research*. New York: Oxford University Press.

Professor Role

What follows is an outline of your role. You will need to improvise to some extent – be creative but try to stay within the bounds of what seems realistic.

You are a professor who just received tenure: you have conducted successful research projects, written influential papers and received awards for your work. When you started, your research group was very small, and it has grown rapidly since then. Now that you lead a large group with ten graduate students and two post-docs, you do not have the time to check everyone's work on every project. You have good students who are well trained and conscientious.

You are about to meet with a student in whom you are very disappointed. You asked the student to reproduce some preliminary results produced by your star post-doc that your lab has already published. Reproducing results is important because it confirms previous work. This helps students improve their lab skills, even if these students are unlikely to be named as authors on this series of papers. Until recently, you had a good opinion of this student's skills and work ethic.

This student seems unwilling to put in the time and effort to complete the task promptly. You assume that the unwillingness to work hard is because the student thinks the task you have assigned is boring and unnecessary. It may even stem from jealousy or from a fundamental misunderstanding of how research is conducted. Students earn the right to have others help them in the future by doing non-glamorous supporting work for you and the post-doc now. Because this student has been so lazy and slow, you had to assign a second student to work on this routine confirmation. So far, neither student has finished the task. You are frustrated and impatient.

You don't want to be too hard on the student, but the student must start working harder immediately. In your meeting, you need to balance several goals: advancing the student's education; ending an unproductive attitude; and motivating the student to complete the task soon and well.

Prepare for your meeting with your student.

Professor Role-Play Notes:

- ✓ You believe the student is not trying hard enough to replicate the post-doc's results
- ✓ You want to make it clear you are disappointed
- ✓ You want to set clear expectations: the student must contribute to the work of the lab
- ✓ You have not had time to check everyone's work on every project

Plan for your meeting:

- ✓ Write questions that you will ask the student
- ✓ Follow-up questions that you might ask
- ✓ Questions that the student might ask you, and your answers

Role-Play Starter

Professor: *Hello … Please come in …*

Grad Student: *Thanks … You wanted to talk about the experiments that I have been running …*

Professor: *Yes … I'm curious as to why it is taking so long to reproduce the results that our post-doc has found … All you have to do is repeat the same procedures …*

Grad Student: *I don't really understand why they aren't working either … I documented everything I did in my notebook, and I know I didn't miss anything …*

Professor: *I'll look at your notebook after our meeting … but have you considered the time and effort that is required of graduate students working for a large research lab? … It involves doing a lot of work that may seem unimportant to you now, but it will benefit you in your future …*

Grad Student: *I really do understand … I've been trying very hard to reproduce the results, and I do not understand what's wrong … so I have investigated a number of reasons as to why the experiments have not been working …*

Professor: *Have you fixed the problem yet?*

Grad Student: *I don't think the lab had enough materials to run the original experiments …*

Professor: *What? That's very strange … Have you talked to the post-doc about this?*

Student Role

What follows is an outline of your role. You will need to improvise to some extent – be creative but try to stay within the bounds of what seems realistic.

You are a second-year graduate student in a large research group. You like and respect your adviser and have been very happy in this group. Your research adviser just received tenure last year. Your adviser published an early paper in a major scientific journal and then received an award from an important federal agency. The group has grown rapidly with your adviser's success.

For months you have been trying to reproduce experimental results obtained by a post-doc in your group. Your lab has already published the post-doc's results as preliminary findings in a journal article that is getting a lot of attention. You have worked very hard to replicate the work: you have run the experiments many times, and you have watched the post-doc to see his techniques. You are sure you are doing the work correctly and still you are getting nowhere. Your adviser keeps asking you to finish and seems angry about the amount of time you are taking. You have never had anyone angry with you like this before. Your adviser recently assigned another student in the group to do the same work, and that student is also mad at you for diverting her work.

You are now sure that it is not possible to obtain the results reported by the post-doc. You do not feel comfortable confronting the post-doc yourself. The stress is keeping you from sleeping. You have an appointment with your adviser to discuss this mess. You have reviewed your notebooks to make sure that it is in good order and that you have properly documented everything you have done. You are sure you haven't missed anything.

Additionally, you don't think it would ever have been possible to do the work in your lab: your lab never had enough of the materials to complete the work that was reported in the journal article. You even checked with the department's business manager, and according to the university's electronic purchasing records, no one either inside or outside your group has ordered these materials in a few years—except for you when you started this project. Furthermore, you have found out that the equipment necessary for at least one part of the experiment was not working in the month when the post-doc said he did the work.

You don't know what to do. You do not want to believe the post-doc made up the results but you don't know what else to think. That would be horrible for your adviser and your lab. Your adviser is not very strict in reviewing notebooks and supervising the lab, so you hope that there is some mistake that will explain the inconsistencies.

Prepare for your meeting with your adviser.

Student Role-Play Notes:

- ✓ Your professor and this lab have an excellent reputation
- ✓ You are sure you ran the experiments correctly
- ✓ You documented everything you did while running the experiments
- ✓ You're confused about the lack of research materials and broken equipment and afraid the confront the post-doc

Plan for your meeting:

- ✓ Write questions that you will ask the student
- ✓ Follow-up questions that you might ask
- ✓ Questions that the student might ask you, and your answers

Role-Play Starter

Professor: *Hello … Please come in …*

Grad Student: *Thanks … You wanted to talk about the experiments that I have been running …*

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Professor: *Have you fixed the problem yet?*

Grad Student: *I don't think the lab had enough materials to run the original experiments …*

Professor: *What? That's very strange … Have you talked to the post-doc about this?*

observer role

Observer Role

- *Read both roles on the following pages.*
- *Watch the interview and take notes.*
- *If the conversation appears to be stopping early, encourage discussion on topics that still haven't been addressed.*

What is the student trying to convey?

What is the professor trying to achieve in this meeting?

Did the student "read" the signals from the adviser well? What cues did you see?

Did the professor "hear" the student well? What signals of this were there?

What questions do you think could/should have been asked that were not? What do you think could have been said that was not?

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