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A novel approach for practitioners in training: A blended-learning seminar combining experts, students and practitioners

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Abstract: A joint student and professional practitioner seminar used distance technology to allow remote experts to present to, and remote practitioners to participate in, a university-based learning experience. Participants were professional practitioners from the US Fish and Wildlife Service who were mandated to receive training and on-campus graduate students in environmentally focused programs who were enrolled for credit. Seminars providing training in high-demand or cutting-edge topics may be especially valuable to practitioners outside the university in business, agency, or organization positions, if they can attend as distance learners. Such classes create opportunities to bring students and professionals together to interact with expert presenters, who may present from distant locations. Presenters model expert thinking for students and engage them in discussions in which they practice such thinking. Students gain additional insight into their field of practice by observing interactions between practitioners and presenters, as well as by working directly with practitioners, in discussions and, potentially, in assignments. As a result, at little cost to any participant, students are engaged in authentic learning that is not regularly available in a classroom setting and practitioners gain access to a series of experts as well as access to student views and, potentially, student work. Instructors must relinquish considerable control of some aspects of the learning environment, but as mediators can increase the value-added aspects of sharing the class with professionals. Professional programs seeking to prepare students for professional practice often combine both more traditional classroom learning and experiential learning during thesis preparation, service learning or internships. Seminars such at this provide a valuable addition to this mix.

Keywords: professional training, reflective practice, distance teaching and learning, cognitive apprenticeship, experiential learning, decoding

I. Introduction.

The training of practitioners, traditionally undertaken through apprenticeships, and the training of scholars, traditional undertaken through university degrees, come together in the training of professional practitioners. Practitioners-in-training are scattered throughout the academy in schools of business, public administration, engineering, nursing, social work, education, law, design, as well as in professional programs in the applied sciences. Practice—the experience of *doing* of things—has long been recognized as distinct from and important to content-based education (Dewey, 1938).

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Professional practice requires integrating factual information with a nuanced appreciation of the context in which that information is to be brought to bear. The ability to apply the appropriate information in the appropriate way has been considered a form of art (e.g., Schön, 1987). Perhaps for this reason, professional practice is often considered part of the "hidden curriculum," a phrase first used to connote a wide range of behaviors and mores that are not taught explicitly (e.g., Snyder, 1970) and that may be less easily seen and adopted by some student than by others, depending on their backgrounds. Although much of the hidden-curriculum debate focuses on concerns for students disadvantaged and discouraged by unspoken rules, among educators in medical and pharmacological fields in particular, the phrase describes aspects of professional practice and behavior that may not be made explicit in academic training, in parallel with Schon's (1987) discussion (Bradley, Steven, & Ashcroft, 2011; Jaye, Egan, & Parker, 2005; Masella, 2006). Another conception of this need to learn by practicing is the notion of *cognitive apprenticeship* (Collins, Brown, & Newman, 1989). Collins et al. (1989) defined apprenticeship as "embed[ding] the learning of skills and knowledge in their social and functional context" (p. 454). Ideally, the training of practitioners results in students who have a good start in this art and sufficient understanding of the undertaking to direct their own learning and advancement, as Schön's phrase, *reflective practitioner*, suggests.

The teaching needs that Schön set out in *Educating the Reflective Practitioner* are echoed in Pace and Middendorf's *Decoding the Disciplines* (2004). Although Pace and Middendorf discuss training students to become experts in academic disciplines, an analogous process that might be called *decoding the practices* is clearly called for in training practitioners and indeed is an apt paraphrase of the approach advocated in Schön (1987).

Traditional university courses teach requisite academic skills and subjects, but in isolation these lack the context and synergy needed in order for student to become practitioners. Internships, project-based classes, and service-learning classes provide opportunities to work with one or more communities of practitioners and these may or may not provide explanations of practice or opportunities for reflection concerning practice. As a faculty member (author1) and an agency practitioner (author2), we created a graduate seminar designed to provide training, in a cutting-edge topic, simultaneously to graduate students in a traditional classroom and practitioners from a federal agency who attended remotely. In bringing these two groups together in a seminar we created what Lave and Wenger (1991) have termed a *community of practice*: a group that comes together to focus on gathering and sharing knowledge on particular aspects of practice in a professional field. *Situated learning* (Lave & Wenger, 1991; Resnick, 1989), *cognitive apprenticeship* (Collins et al., 1989) and *experiential learning* (Kolb, 1984) are all aspects of cognitive learning that stress the importance of experience and authenticity for effective learning.

In this case study, we discuss the value-added aspects, beyond standard course content, that this combination afforded graduate students who were in training to become professional practitioners. We describe the aspects of experience and authenticity our course format provided and explore ways to increase opportunities for reflection in future iterations. We discuss the course practices and outcomes in the context of distance learning and blended learning and describe the role of instructor-facilitators in enhancing the learning opportunities of the course and in maintaining a sense of presence for all participants.

II. Background and Methods.

In 2007, the US Fish and Wildlife Service (FWS) directed its various regions to provide training to many of their regional wildlife managers and biologists on the topic of climate change. The mandate specifically directed that training was to include more just a handful of staff, so that an in-depth understanding of climate change would rapidly become widespread in the agency. Region 3 (the Upper Midwest) sought to provide such training in a way that would avoid contributing to climate-change by transporting staff, possibly repeatedly, to some common learning site. To that end, author2, from Region 3, contacted author1 at the School of Public and Environmental Affairs at Indiana University to investigate the possibility of a combined seminar that would train both graduate students from the university and agency personnel from the Region. In addition, we sought to eliminate most expense and travel (and its accompanying impacts on climate change) by having experts present from their home locations. Similarly, although one practitioner who lived nearby usually attended the class in person, the remaining practitioners participated individually and in groups from across the Region via electronic and telephone connections. Figure 1 diagrams the resulting synchronous learning environment.

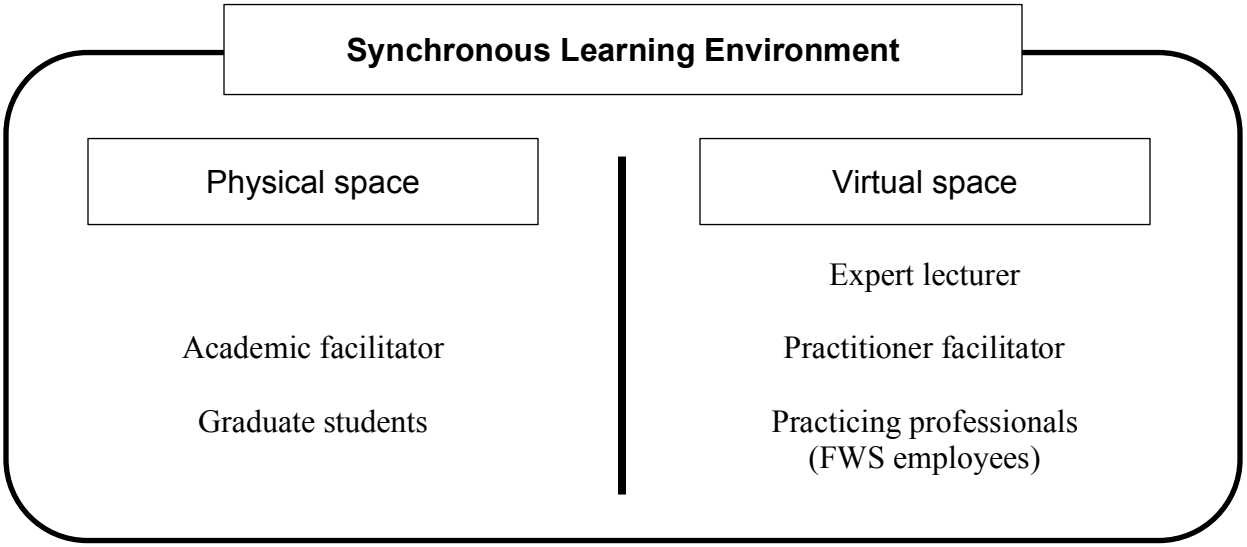

Figure 1. Components of the blended-learning seminar. The physical space was an on-campus classroom. The virtual space was an Adobe Connect session with a toll-free conference telephone line to permit synchronous question-and-answer and discussion. An expert lecturer led lecture-discussions remotely; the facilitators, together, guided discussions.

To accommodate the FWS practicing professionals, the class met once each week, for 2.75 hours. Typically, an expert speaker discussed some aspect of climate change for the first 1.25 hrs, including discussion with students and practitioners which we both facilitated. After a 15-min break, the last 1.25 hr was used for a discussion, again facilitated by both of us, of primary literature we had chosen to complement but not duplicate the expert's material. Distant expert speakers used Adobe Connect and a toll-free telephone line provided by the FWS to share PowerPoint presentations with the classroom and with remote practicing professionals who participated from a distance. Facilitators used the same system to present the reading under discussion in the second part of the class.

AdobeConnect is a desktop-sharing program that allows users to exchange control of the screen. Distant experts could control their PowerPoint and other materials themselves. There is also a Chat window that allows participants to type questions or comments during presentations without stopping the flow of the presentation. We encouraged presenters to use the setting that put their presentation on the full screen while instructor-facilitators used the setting that showed presentation and Chat. In this way, presenters were not distracted and facilitators could interject with questions from Chat or from the classroom at appropriate pauses. Reading discussions, being less formal, used Chat less, with distant participants commenting over the telephone.

Each speaker was given a short training session in the week before their presentation to assure that software issues were minimized and to discuss the logistics of speaking "blind" – without visual contact with the audience. Due to their other duties, the number of practitioners varied from week to week. The phone link was piped into the classroom through an audio link with the toll-free line, and remote attendees and expert presenters used speaker-phones.

Author1 attended all classes in the classroom, serving as a facilitator and coordinator during expert presentations and as facilitator during discussions of primary literature. Author2 attended all classes on the phone link and facilitated and amplified practitioner comments and discussion. Remote participants contributed to discussion either by telephone or by typing questions into the Chat window. Due to the large and varying number of practitioners attending, we did not use video of participants at all during the class.

The format required front-end time to learn the online technology and set up the slate of expert speakers, but most other aspects of the course occurred at a moderate pace throughout the semester. Overall, the time needed to prepare and present the course was not more than and was possibly less than would have been required for a traditional lecture/seminar combination.

Our primary aim in developing the seminar was to provide students and practitioners alike with information about impacts of climate change on fish and wildlife conservation, through presentations by experts from academia, agencies, and NGOs. We hoped that having both students and practitioners in the audience would enrich discussion and that each audience group would benefit from the knowledge of the other. Seminars, owing to the importance of discussion, already involve collaborative learning. Because this format was, so far as we know, entirely novel, we did not know how learning in this format might differ from more traditional academic seminars. In particular, we were aware that differences among the audience subgroups, both in their prior knowledge and experience and in their methods of experiencing the course, might affect the modes of learning and the nature of the knowledge learned.

We, the authors, spoke weekly during the course, discussing and reflecting on the nature of the interactions and learning observed as the course progressed. We realized that the learning environment we had created was providing a useful window for our students into the world and practice of our practicing professionals, as well as into climate-change science. We began to ask professionals who were commenting during question-and-answer and discussion periods to explain the contexts in which they applied climate-change science and the aspects of their work that raised questions about climate change, in order to enrich this practitioner-oriented aspect of the class without taking substantial time away from the primary topic. In addition, we sought to capture information about the nature of the practitioner-oriented learning that our students were experiencing. This scholarship-of-teaching-and-learning aspect of the seminar was not planned at the outset; rather, we acted on an unexpected opportunity in order to learn how our format added value to student and practitioner experiences.

With human-subjects approval, we surveyed students, expert speakers, and participants at the end of the course, asking for demographic information, previous experience with web-based or distance education through a variety of Likert-scale and open-ended questions addressing the experience of the course. Some questions were designed to assess logistical aspects of the course (e.g., for speakers, ease or difficulty of presenting without receiving visual cues from the audience); others asked participants to comment on the potential benefits or costs to learning associated with the course format. Relevant portions of the student and expert surveys are included in appendixes. We will provide details on the perspectives of the practicing professionals in a future publication.

III. Results.

We focus here primarily on results associated with introducing graduate students to their community of practitioners.

A. Participation.

The class (n = 28) included one undergraduate student in environmental management and 27 students pursuing Master's degrees in environmental science (MSES), MPA degrees with a focus on environmental policy and natural resource management or sustainability, or dual MSES/MPA degrees. One local agency practitioner often joined the class in the classroom. Another 10-80 practitioners (approximately, depending on the day) joined the class remotely, using the agency telephone line and Adobe Connect software. A handful of practitioners were regular participants but most only attended sessions of particular interest; all practitioners had occasional absences due to conflicts with work schedules.

B. Recruiting expert speakers.

Expert speakers universally responded positively to invitations to speak to the class and typically cited both the minimal time commitment and the opportunity to address practitioners in the primary federal agency tasked with wildlife conservation as attractive aspects of the invitation. All of our first-choice outside speakers who did not have time conflicts accepted invitations to speak (n = 12). Most made their presentations from their offices, but one presented from home, and another presented while on sabbatical leave in Europe. Of nine speakers responding to the speaker survey, all indicated they were somewhat or extremely likely to consider a distance-learning/ distance-teaching format for future classes. Eight were somewhat or extremely likely to consider an agency-university mix.

C. Student responses regarding interactions with agency practitioners.

Of 27 students responding to "Do you believe that a collaborative agency/university approach to learning helped you learn about breaking issues more than a traditional classroom approach Y/N" all answered yes and 25 provided additional comments. One student wrote *"Provides insight into 'real' world issues agencies are facing and challenges they are trying to overcome."* Another offered *"We get to hear what agency officials deal with every day. If we want to work for them, this is helpful."* The following themes appeared repeatedly in comments:

● Better understanding of how climate change information is being used in the real world/outside perspective (*n* = 13),
● Opportunities to interact with professionals (*n* = 8),
● Better understanding of agency issues (*n* = 5), and
● Usefulness for future interviews/employment (*n* = 2).

D. Agency responses regarding student interaction.

Of 54 agency personnel responding to "Is attending such a seminar with university students a plus, a minus, or a neutral aspect of the experience?" 19 ranked it a plus, 17 were neutral, and three ranked it as a minus. Positive respondents overwhelmingly mentioned students' fresh or different perspectives (11of 14 who provided comments). Others mentioned the opportunity to bring science into the agency, and recruiting opportunities with students.

E. Logistics.

Invited to speak specifically about any aspects of expert presentations that were lost in distance teaching formats, 11 of 27 students providing survey responses had no comments on this question, eight noted a loss of visual cues such as body language, three indicated they found the experience less personal, and one mentioned awkward interruptions (possibly due to the rare technology glitch).

Five of nine experts had not previously used web-based training or seminar software and four of ten had never participated in a web-based seminar or training session. For eight remote speakers responding to the question, scores for difficulty of use of the software on a scale of 1 (easy) -7 (hard) ranged from 2 to 5.5, with an average of 3.9—almost exactly the middle of the scale.

IV. Discussion.

A. A community of learning and a community of practitioners.

Opportunities for cross-training in this format ran in all directions among graduate students, practicing professionals and experts, as is appropriate for communities of learning and practice. Most of the graduate students were in programs in applied ecology and in environmental policy, rather than in wildlife ecology, and they brought that wider training to their discussions in class. The practicing professionals, primarily wildlife biologists and planners, often took time to clarify the role and responsibilities of the FWS, the relationship between the public and the FWS, and the constraints under which the Service operates, in order to provide experts and instructor-facilitators with context for their questions. If context was important but unclear or absent in a question or comment, facilitators often asked professionals to provide additional information. Experts ranged from purely academic to very applied and thus varied in their familiarity with environmental policies, with the FWS, and with attitudes of the public towards wildlife-related issues. Thus, while experts provided knowledge in their area of specialty, they were often recipients of knowledge concerning application of the information they provided.

Students enrolled in the seminar class clearly found that the student/practitioner mix provided opportunities for learning that were substantively different from those in traditional

university seminars. Their comments focused specifically on aspects of the class that provided a view into the community of practitioners that they were being trained to join and on the opportunity to begin to make contacts in that community. Agency participants were encouraged to consider whether they had projects or information needs that students could address in their term papers; two students wrote such papers. One student was hired by FWS. His first post was at a national wildlife refuge that had had personnel among the practitioner participants for the course.

The most common means of introducing students to communities of practice involve active experiential learning in situations such as internships, service-learning, and project-based classes. The MSES and MPA programs at Indiana University require two of these (an internship and a project-based capstone class) of all students. Both of these approaches put students directly in contact with practitioners but, in both cases, contact may involve only a single office or a single practitioner.

The format discussed here did not have as its primary purpose creating practitioners from graduate students. Nevertheless, it gave students an opportunity to hear and interact with practitioners who held many different positions, from several states and from two different branches of a major federal agency. In addition, the involvement of practitioners likely improved our ability to attract very high-quality speakers, thus fulfilling one of our primary goals. By creating, simultaneously, a *community of learning* and a *community of practitioners* that were jointly interactive, we provided students with an unusually rich opportunity at no extra cost to them and essentially no extra cost to the university (the use of a distance-learning classroom to support the telephone connections to speakers and practitioners).

Survey results clearly showed that students saw and appreciated the agency perspective. This behind-the-scenes look into agency operations provided aspects of *decoding practice* by allowing students to observe reflective practice as practitioners discussed how respond to climate change in their various positions. Thus, by bringing practitioners to the students, remotely, our format brought *situated learning* into the classroom (Lave & Wenger, 1991). More importantly, opportunities to watch experts interact with practitioners provided students with deeper understanding of the relationship between research and practice and the processes by which research informs practice.

Pace and Middendorf (2004), in *Decoding the Disciplines: Helping students learn disciplinary ways of thinking*, speak to the problem of creating experts from naive students and develop a model of identifying learning bottlenecks and making visible to students the thinking that experts do in any given discipline. In this, they address the problem posed by Collins et al.'s (1989) discussion of *cognitive apprenticeship* and Lave and Wenger's (1991) discussion of *situated learning. Decoding* a discipline or practice is accomplished by breaking the thinking or practice down to its component pieces and modeling each step for the students before asking them to practice that type of thinking and, later, to practice doing, on their own. The teaching approach we describe here is not a full decoding solution to bottlenecks in training professionals in that it lacks the overt step of explicitly describing practice and allowing students opportunities for guided practice. Rather, our format adds extensive interactions with practitioners, which give students the opportunity to observe practitioner approaches and narrative decoding of practitioner thoughts, to a teaching environment that is already rich with learning possibilities.

B. Adding reflection.

The seminar-discussion format gave students opportunities for reflection, but not at the level suggested for reflective practice. Benefits of reflection could be increased substantially by constructing a course/community of practice with an explicit goal of reflection. Both experts and practitioners could be asked to explicitly decode aspects of practice in the discussion, when possible. In addition, students could undertake assignments that promote reflection (such as focused reflective journals) and that apply what they hear about practice from experts and practitioners in course-related projects and assignments. With sufficient advanced planning, agency-sponsored projects could become part of the class so that a truly experiential component could be added. Two of our students had such experiences, but our timeline did not permit developing such opportunities for all students. Our initial format allowed students to take important steps from *knowing* to *understanding* practice in their field (Wiggins & McTighe, 2005); the modifications we suggest here would allow students to deepen that understanding and would provide opportunity for assessing and validating this kind of learning.

C. Blended and distance learning.

Our format uses distance methods in order to expand the variety and number of people involved in the experience. Both experts and practicing professionals attended almost exclusively in virtual space—as distance teachers and learners. During expert-led discussion, the three segments of the learning community—expert, practicing professionals, and graduate students—were all at a distance from one another. Readings were made available on-line but were primarily peer-reviewed literature that did not originate in an on-line format. Students submitted reading discussion questions through the course-management system, but then met with the instructor in class for reading discussion that included distant practicing professionals. Except for reading the discussion readings, all class components were synchronous. Thus, our format fits Milne's (2006) wider definition of blended learning: "a course or program that is accessible by distance and on-campus students simultaneously (supported by videoconference, for example).

Narrower definitions of blended learning (e.g., in Garrison & Vaughan, 2008) focus on the opportunities for reflection that arise from asynchronous uses of online material. The usual nature of a graduate seminar is of synchronous discussion, and our practicing professionals faced time constraints that also made the synchronous format attractive. However, in the asynchronous reading of peer-reviewed articles and creation of discussion questions, our format also partook of this narrow definition. Graduate students' questions reflected their variety of backgrounds and interests, and graduate students used the opportunity to ask their learning colleagues among the practicing professionals to reflect on the impacts of climate-change issues on resource management and policy in practice

D. Facilitating a multifaceted learning experience.

The seminar posed unique challenges to us as instructors and facilitators. A new expert spoke every week, so we, as instructor-facilitator and practitioner-facilitator, provided continuity and an ongoing *sense of presence* for both graduate student and practicing professional participants. Sense of presence is important for engaging distance learners (Lehman & Conceição, 2010), and we were careful to communicate regularly with distance learners by email to provide them first

with information and support for setting up the software and then to provide information on upcoming speakers and readings. This regular communication allowed practitioners to stay in touch with the class even if they participated only rarely, and we had no problems associated with uneven participation.

Even with a consistent physical facilitator presence in the classroom, some students missed the visual contact with the experts. Some noted that it helped them to see a photo of the speaker projected before the start of class, and one speaker included a photo at the start of her presentation, to introduce herself visually to the audience.

Some challenges were merely logistical. Because presenters could not see students, they could not respond to a raised hand or a quizzical or confused expression. Similarly, the instructor-facilitator could not visually signal to expert presenters that students were or were not familiar with particular concepts. We encouraged presenters to focus on their presentations, and allow the facilitators to monitor the Chat area of the Adobe Connect screen where participants typed questions during presentations. As a result, the responsibility for managing the flow the presentation rested entirely on the facilitators, who became meta-communicators in this context, communicating about communication cues.

After the formal presentation, the question-and-answer discussion presented different challenges. Both students and practitioners had questions. In addition, there were opportunities for facilitators to ask experts to expand on answers for the benefit of students and practitioners. Similarly, facilitators often asked practitioners to expand on practitioners' questions or answers either to receive the best benefit of expert knowledge or to provide clearer insights to students regarding the nature of agency interests. During these interchanges, the facilitators had to be comfortable with letting control of the flow of discussion rest as much as possible with the participants while remaining alert for opportunities to nudge topics or speakers briefly to enhance learning of many kinds.

Collison, Elbaum, Haavind, and Tinker (2000) described the roles ('guide on the side,' instructor, and group-process facilitator) and range of voices (generative guide, conceptual facilitator, reflective guide, personal muse, mediator, and role player) available to moderators in online settings. Although our setting was more complex, these roles and voices are apt for it as well. During expert presentations, we acted primarily as facilitators of the group learning experience, occasionally stepping into the role of 'guide on the side' to highlight overarching themes and connections to other presentations or to readings. As guides, we used the voices of generative guide (to facilitate discussion), conceptual facilitator (to clarify questions to experts and answers to graduate students and professionals), and reflective guide (to encourage deeper investigation of a point during question-and-answer discussion.

The sessions that focused on discussions of readings were often dominated by student and facilitator interactions as agency personnel were less able to prepare and tended to listen (at most) during these sessions. In this context, we acted most often as 'guides on the side' of discussion and sometimes simply as traditional instructors when elaborating on the content of a reading. The voices of generative guide, conceptual facilitator and reflective guide were all useful to us as these discussions ranged from topics with which participants were familiar and engaged to topics that were less familiar or more complex. As guides, we not only invited consideration of the reading in isolation or in relation to expert presentations, but also often posed questions to prompt graduate students to consider the relevance of the reading to practitioners such as their professional co-participants.

The agency perspective was available to graduate students both in expert presentations and in readings discussions as both of us participated in both kinds of sessions and both of us have worked with and for multiple federal agencies. Further, some of the students had internship or employment experience with agencies and could contribute agency perspective from these experiences. Nevertheless, agency issues were typically a smaller part of discussions of readings than of discussions with expert speakers.

E. Limitations of the format.

The reality of agency work is that time rarely suffices for the work at hand, especially in an era of straitened financial circumstances. As a result, top-down prioritization of class activities is important to bring agency practitioners into the classroom. Deadlines, meetings, and other responsibilities create a constant tension for agency personnel, however much they may value the opportunity for learning. Our second iteration of an agency-university seminar had no accompanying directive from a regional director and attendance rarely exceeded a scant handful of agency practitioners, despite the importance of the topics to FWS work and the excellence of the speakers.

The opportunity to address a major federal agency was clearly attractive to expert speakers and suggests that facilitators of similar efforts should try to ensure some base level of agency buy-in and participation. In the case of the first iteration, top levels of the agency clearly indicated that training was to involve many people; such cases are likely to be rare, however. More often, it may be easier to ensure agency participation by spreading the impacts among staff members by matching personnel to the topic or topics most closely associated with their work. Such matching was likely going on during the course we have described here, accounting for some of the variability in numbers of participants. The format is sufficiently flexible that agency participation need not be a constant, but could be linked to particular topics.

Where long-standing relationships exist between agencies and universities, experiences of this sort could be negotiated well in advance and the ties between students and staff could be increased. Students were very enthusiastic about the opportunity to research issues of interest to the agency for their research-paper assignments. Such projects increase the experiential aspect of a course and provide students with closer contact and deeper understanding of the practitioner role. Where such relationships do not exist, the opportunity to leverage the university's ability to attract top speakers and to make use of student workers to fill information needs can be incentives to create or strengthen agency-universities ties. Changes in policy and regulations and advances in technology and practice create demand for learning in agencies that must respond to the changes. Such changes thus create opportunities for applying this format to the benefit of both practitioners and practitioners-in-training.

Even in the best circumstances, seminars such as this one cannot provide the duration or depth of practitioner interaction of an internship or major project-based experience. The process of transforming graduate students into practitioners is generally a long one, and cannot be entirely encompassed within the academy. However, classes in the format we describe here build on familiar class types (lecture-discussion and seminar) and make available to students a community of practitioners with little additional cost, while leveraging university resources on behalf of the participating agency.

Technological constraints on distance learning and teaching are continually diminishing. In addition to Adobe Connect, other proprietary software such as Skype now supports conference

calls and could be used for classes like this one. Class size is limited primarily by the facilitators' willingness to try to support discussion among the all participants and by any limitation on the number of callers into the conference or Skype line. If students are to use the distance option when they are home ill or travelling, then a short training session at the beginning of the course is advisable as instructors cannot easily offer technical assistance during regular class sessions.

F. Conclusions.

The format we describe relies on significant agency commitment to an educational or training opportunity. When such commitment is available, it affords students and instructors an opportunity for insight into authentic thought and practice that may exceed even experiences such as internships which may not involve reflection and synthesis. Expert presenters were very generous with their time in part due to the minimal time requirements of the distance format and in part for the opportunity to speak directly to agency practitioners. Having expert presenters gives students the benefit of the best sources of information, reduces time commitments for instructor-facilitators and allows agency partners to leverage the capacity of university partners to attract such speakers. The distance format allows agencies to train many of their personnel without travel costs, although the time commitment remains.

We found the experience of facilitating a multi-faceted learning experience to be immensely satisfying professionally. We, our students, and our agency colleagues received cutting-edge training in an area of great importance in our professional lives; we made new contacts with experts in our field and gained training in online technology and facilitation. The overall costs in terms of our time were entirely reasonable. We recommend this format to agency-university partnerships in all fields when need for training is urgent or high-demand topics create high agency commitment to the process.

Acknowledgments

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Appendices

Appendix 1. Student Survey.

Only survey questions relating to the practitioner aspect of the class are shown. Formatting and numbering do not match the original survey.

Likert-scale questions scored 1-5

Discussion
Moderators managed discussion traffic well.

Agency personnel contributed important points and questions to discussion
Students contributed important points and questions to discussion
Points and questions raised during discussion were relevant and interesting

Learning
I learned useful things about the class topic from guest presentations
I learned useful things about the class topic from discussions
Hearing from agency personnel in discussion was useful and informative
Readings were a useful part of learning in this course
Readings were relevant to the topic of the class for which they were assigned
I would take another course in this format if the topic interested me
The different backgrounds and experiences of class participants (students and agency personnel) was a positive aspect of the course

Open-ended questions

1) Please comment on how effectively the guest presentations, readings, and discussion helped you learn about course topics.

2) For these three aspects of the course, were there specific techniques or practices that you felt made that aspect particularly effective?
Guest presentations
Readings
Discussion

3) For these three aspects of the course, were there specific things you felt reduced effectiveness and should be avoided in the future?
Guest presentations
Readings
Discussion

4) The circumstances that gave rise to the course suggested that we keep class size fairly large in order to provide maximum opportunity for training both students and agency personnel in this one-time situation. Please comment on any impacts of class size on your ability to benefit from the class. Please suggest discuss upper limits (of in-class participation, distance participations, or both or neither) that should be set on future uses of this format. You need not repeat points you have made in earlier answers.

5) Please comment on the effectiveness of a collaborative agency/university approach to learning about breaking issues.

6) Please comment on the effectiveness of distance teaching for learning about breaking issues.
7) If you attended some or all classes remotely, please comment on the effectiveness of distance learning/distance teaching for learning about breaking issues.

8) Are there aspects of presentations that are lost in the distance-teaching format that are important to you as a student? If so, please describe these, briefly.

9) Are there advantages or disadvantages to you as a student to using the distance-learning format to bring agency personnel together with students to provide training on breaking issues? If so, please describe these, briefly.

10) Please provide any additional comments here.

Appendix 2. Expert Survey.

Only survey questions relating to the nature of the class are shown. Formatting and numbering do not match the original survey.

1) Prior to this course, please indicate the total number of web-based seminars in which you have been a participant.

2) Prior to this course, please indicate the total number of web-based seminars in which you have been a presenter.

3) How many times per academic year do you use conference calls to conduct business?

4) Prior to presenting in this course, had you previously attended multi-session, web-based training or seminars? If yes, please describe the general nature of the training or seminar(s) below.

5) Prior to presenting in this course, had you previously provided web-based training or led web-based seminars? If yes, please describe the general nature of the web-based work below.

6) Have you previously used other web-based training or seminar software? If yes, please provide the name of the software.

7) Please evaluate the moderators on the following attributes by circling a point on the scale that corresponds with your judgment for that attribute.

8) How likely are you to consider using a distance-teaching/distance-learning format for courses or training you direct? Please comment briefly and mention changes you would make for effectiveness.

9) How likely are you to consider using a university/agency mix for courses or training you direct? Please comment briefly and mention changes you would make for effectiveness.

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