The Process of Progress:
A Teaching and Learning Center
Examines the Adaptation
of Active Learning Across the Disciplines

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The authors examine four instructors' participation in a one-year teaching fellowship and consider the resulting growth in their teaching. The disciplines represented are accounting, English, computer science, and marriage and family therapy. Faculty development consultants working with these instruc-tors discussed the incorporation of active-learning pedagogies and sought to document possible change with feedback gathered from small-group instructional diagnoses (SGIDs), formal uni-versity student evaluations, and instructor interviews. Upon consideration, the authors recognize that taking into account an instructor's discipline, background experience, personal context, and willingness to engage in self-reflection plays a significant role in faculty development and Center for Teaching and Learn-ing (CTL) practice, and that faculty developers must appreciate the developmental process and celebrate even small changes in teaching. Further, the authors realize that active-learning methodology falls along a continuum of simple to complex, and activities at either end of that spectrum can be effective.

Like many other faculty developers, consultants at our teaching and learning center advocate active-learning pedagogies in consultations with faculty members and graduate student instructors. We have adopted active learning as one of our core values, supporting and encouraging ac-tive learning as one of the best practices of effective teaching (Chickering

& Gamson, 1987). As Silverthorn, Thorn, and Svinicki (2006) offer, "We recognize the need to move away from traditional didactic lectures that emphasize the memorization of disconnected facts toward instruction that provides students with opportunities to actively engage in content material . . . " (p. 204). We know, and research has repeatedly demonstrated, that students learn best when given opportunities to actively engage with the material they are learning. Yet it seems that many classes are still taught in a comfortable and traditional lecture format.

Silverthorn et al. (2006) recommend that faculty members need to discuss their experiences confidentially and with like-minded colleagues, participate in individual consultations and observations, and have opportunities to try new methods and receive feedback—in other words, the opportunity to practice. Keeping this in mind, we examined several instructors selected for a teaching fellowship program and the possible changes they made to their teaching methods after spending a year in a cohort, talking about their teaching and thinking through active learning pedagogies. The backgrounds and disciplines of these instructors provide significant insight into the changes that they did or did not make to their teaching. Interestingly, the spotlight moved away from the instructors to the program consultants as we began to reflect on ourselves as faculty developers and the changes we were seeing (or not seeing) in our Fellows. We began to consider questions such as the following: Do we take enough time to learn about our instructors as individuals—their background experiences, their perceptions about their teaching, and their successes and failures in the classroom—so that we can encourage growth in their teaching in way that is individualized to their unique needs and celebrates even subtle change?

An Overview of Our Center

Our Graduate Student Development Program

As the field of faculty development continues to grow, sharing background information about the program, the instructors highlighted in this study, our center, and the consultants may be helpful to others interested in various components of our work. The Teaching Effectiveness And Career enHancement (TEACH) Program at the Teaching, Learning, and Technology Center of Texas Tech University is an adaptation of the Preparing Future Faculty movement (http://www.preparing-faculty. org/) and is specifically designed for Ph.D. or terminal Master's degree students interested in a career in academe. Fellows are recommended by

faculty members and selected through a competitive process based on either merit (good teachers who could become excellent) or need (teachers who have faced challenges and stand to benefit from focused time on their teaching). Fellows work with a faculty development consultant to focus on teaching effectiveness through observations and feedback, and a faculty mentor relationship is established to offer additional perspectives. In both the fall and spring semesters, TEACH Fellows engage in a videotaped observation of their classes as well as a small-group instructional diagnosis (SGID), a well-known format of anonymous mid-term evaluation conducted by program consultants (Clark & Redmond, 1982). In our SGID process, the instructor leaves the room while the consultant interviews the students in response to some variation of these three simple questions: What works well in this class? What does not work well? and What would you suggest or recommend?

Our Fellows also participate in 20 hours of teaching and learning workshops offered by our center and attended by faculty members from all disciplines. For example, we offer one particularly well-received series of workshops entitled "What the Best Teachers Do," led by respected faculty members who share their thoughts about what works well in their classrooms. Our sessions are informal, interactive, and practical, geared toward ideas that cross disciplines, and designed to maintain our center's mission of supporting teaching effectiveness.

Finally, Fellows complete a teaching portfolio and carry out a scholarship of teaching and learning (SoTL) project of their choice. The process of completing a portfolio engages the Fellows in reflection and asks them to consider whether they are teaching the way they want to teach. The project is a way to get Fellows involved in SoTL research early in their careers and help them realize the value of examining teaching with a scholarly lens. The portfolio and project also provide focus to solidify the mentor relationship, as mentor responsibilities include reviewing the portfolio and providing feedback as well as assisting the fellow in designing and implementing the project.

Our Consultation Culture

For any consultation we conduct, we want to get to know our instructors before we set foot in their classes. Therefore, we hold initial meetings with each instructor prior to the observations, SGIDs, and consultations to talk about their concerns and what they would like to see as a result of working with us. Following observations, our consultants create extensive reports (typically 8-12 pages), including a detailed timeline, ad-

dressing issues specific to the instructor, and providing lists of strengths and alternative teaching suggestions as well as scholarly resources. Each observation is followed up by a one-on-one consultation, before which the instructor is asked to watch the recording of his or her class and respond to several reflective questions to be discussed during the follow-up consultation. The consultant allows the instructor's thoughts to help guide the consultation and presentation of feedback. When we return to a class to conduct an SGID, we are already familiar with the dynamics of the classroom environment, which may help us decipher some student feedback and communicate better when following up with the instructor. We use a student assistant to type and categorize student feedback from the SGID, and the consultant then conducts another one-on-one consultation in the week following the SGID to help the instructor focus on and think through the salient points. If feasible, we conduct SGIDs midway through the semester with time to incorporate possible changes or respond to student feedback or concerns. Emphasis is placed on developing a consultant-fellow relationship so that trust is developed and a team approach is cultivated.

Our Consultants

Our consultants represent diverse educational backgrounds with advanced degrees from the humanities and the hard sciences. There are three full-time consultants in our center working alongside one other part-time consultant. One has years of faculty development experience, while the others bring a fresher perspective from having recently completed doctoral programs. As a consultation team, we are purposed about challenging each other with differing perspectives and yet working to stay united in the core values our center promotes (active-learning pedagogies, teaching excellence, experiential learning, supplemental technology, and the scholarship of teaching and learning). For instance, to strengthen our team-based approach, the consultants might watch a videotape of a classroom observation together and negotiate what we consider important points to work through with the instructor. The culture of our center includes an "open door" policy, and we often find ourselves in each other's doorways talking about classroom observations, sharing ideas and resources, and relying on each other for diverse points of view. While we have a larger staff than many teaching and learning centers, we still face limited resources, and like all faculty developers, we simply work hard and seldom turn away anyone who comes to us with an interest in teaching.

Our Interactions With Faculty Members

We chose to focus on graduate instructors from this program for this study because of the robust, long-term relationship that the TEACH Program fosters. While our consultations and interactions with faculty members and non-TEACH Fellows are not always as labor-intensive and continuously sustained over several semesters, as dictated by the program, as consultants we offer the same thorough level of individualized attention to all instructors who seek out our services. Like many faculty developers, we tailor our services, consultations, and feedback to meet the individual needs of the instructor, whether he or she needs multiple classroom observations or SGIDs, access to resources, or someone simply to serve as a sounding board.

A recent meeting with a faculty member from human development and family studies demonstrates a level of interaction that may be common with faculty developers involved in consultations. Having received a significant amount of pedagogical training, Erin[1] was shocked and dismayed to learn from responses to a single SGID that her students were unprepared for and unclear about her expectations; she realized a disconnect in her assumptions about their abilities and motivation, and now starts each semester by clearly explicating her expectations. Another young faculty member from the College of Business, John, requested that we observe his large introductory course. After hearing his concerns about the passive nature of the class prior to the observation, his consultant suggested the simple inclusion of some think-pair-share activities (Angelo & Cross, 1993), which he quickly embraced and continues to successfully incorporate in his classes. These brief interactions helped those faculty members develop their teaching toward excellence. Conversely, we spent an entire summer working with a full professor from the department of the psychology as she revised her syllabus and freshened her approach to include more interaction with her students. We recognize that our relationships with individual faculty members vary according to their needs and while some instructors become quite involved in our consultation services, others may require less interaction and still make significant changes to their teaching.

Questions

We began to realize that there was a set of stand-by suggestions that we shared with graduate students and faculty members alike. For example, we often recommend incorporating the classic think-pair-share activity, the

muddiest point, small-group discussion activities, short writes, and other strategies to decrease teacher talk and increase student talk. As we began to compare notes, we also began to reflect on whether these ideas were representative of the principles of good teaching, and to question whether we were in fact assuming that they would work equally well in a variety of disciplines with instructors representing differing teaching styles and experiences. To examine this conundrum, four individuals were selected from the 2005 and 2006 TEACH cohorts based on their varied disciplines. We identified instructors from accounting, English, computer science, and marriage and family therapy. These instructors agreed to allow us to use their videotaped teaching observations, student comments from their SGIDs, and data from their formal university sanctioned teaching evaluations. In addition, we interviewed these Fellows focusing on their perceptions of changes made to their teaching after their fellowship.

As we considered active learning and changes that these instructors may or may not have made in their classes, we recognized a need to use a definition of active learning. Michael (2007) says, "Active learning involves building, testing, and repairing one's mental model of what is being learned" (p. 42), while Bonwell and Eison (1991) define active learning as "instructional activities involving students in doing things and thinking about what they are doing." These definitions and others easily found in the literature seemed inclusive of different teaching methods, but were we as consultants being inclusive and open to different variations of active learning? Indeed, it is no secret that in recent years active learning has gained increasing support in higher education, and lecturing as a singular mode of knowledge transference has begun to get a "bad rap." An article has even appeared in *College Teaching* entitled the "12-Step Recovery Program for Lectureholics" (Jensen & Davidson, 1997), drawing comparisons between lecture and crippling substance abuse with statements such as this:

> Do you become irritable when a student's raised hand interrupts your monologue? Are members of the class still nameless and faceless to you by midterm? Are you the only person in the classroom who loves the sound of your voice and believes that students eagerly await the gems of wisdom that drop from your lips? (p. 102)

We began to question whether we were suggesting active-learning strategies to the instructors too routinely, without sufficient consideration for their external circumstances or disciplinary expectations. Were we, in essence, offering "treatment" before making an official "diagnosis?" These are the questions we asked ourselves as we worked with these

young instructors and considered the suggestions we as a development team offered them.

The four instructors highlighted in this study presented our team of consultants with a range of strengths as well as areas for potential improvement in the classroom. Their varied disciplines, levels of experience, and personalities, likewise, brought a varied set of teaching approaches. However, our initial impressions of the instructors as well as student feedback solicited during their first semester in the program converged around the issues of student engagement and active learning. As one might expect, some instructors made significant changes, some made seemingly minor modifications, and others chose to do nothing differently (see Table 1).

Case Study: Michelle

Background Information

Michelle, an accounting instructor, came to the TEACH program as an experienced teacher with several semesters of teaching under her belt and a former career in private industry, ready to incorporate team-based learning principles into her accounting class. This represented a somewhat unusual teaching strategy in her department and discipline as a whole. Recognizing the traditional leanings of the teaching styles represented in Michelle's department, we helped her select an experienced faculty member in her college known for her emphasis on group work.

As we observed Michelle, we noticed that she seemed to struggle a bit reconciling how much material to incorporate and include in her mini-lectures and how to facilitate the groups in this junior-level accounting class**.** Michelle's students typically gave comments in SGIDs such as, "I learn best when a grade is on the line, books are open, and group members are involved" (personal communication, October 18, 2006). Yet other students complained about her approach, saying, "Lecture more!! I do better when a professor goes over concepts in detail rather than assigns in-class work. It is the regimen college students are used to!" (personal communication, October 18, 2006). The opposing nature of students' comments was a recurrent theme of Michelle's first SGID. Clearly, some of her students were benefiting and learning well with her collaborative approach, while others were frustrated and may not have understood or appreciated her goals. It appeared that, perhaps, Michelle was not communicating to all of her students the rationale behind her collaborative teaching methods, and she was not always implementing the methods with ultimate effectiveness.

Table 1
Case Study Summaries

Instructor	Course	Experience	Pre-Consultation Teaching	Suggested Changes	Actual Changes Post-Consultation	Results
Michelle	Junior-level Accounting	Several semesters of experience, knowledge of team-based learning	Some lecture and team-based learning (TBL) and in need of some fine-tuning and better communication	Encouragement of active learning methods, suggestions for clearer communication and facilitating groups	Continued use of active learning and TBL, but more effectively; fine-tuning rather than radical changes	Great student satisfaction and high overall ratings relative to her departmental colleagues
Nancy	Introductory-level Civility, Ethics and Communication	Novice teacher, some experience with counseling and church classes	Unwieldy discussions, shallow content, and weak structure	More organized active learning methodology, deeper content	Thoughtful inclusion of small groups, short writes, etc; more control and structure; course revision	Improved student satisfaction with class time and content; adoption of course changes by department

Becky	Sophomore-level introductory fiction	Several semesters of teaching experience	Heavily lecture based and dependent on PowerPoint presentations	Incorporation of active learning strategies to increase student engagement/participation	No change	Extreme student dissatisfaction, low evaluations
Phillip	Lower-level C+ Programming for majors and non-majors	Novice teacher, some experience teaching in another discipline	Very didactic and instructor-centered	Incorporation of simple activities to involve students more	Inclusion of more discussion/questions, more active student participation	Greatly increased student satisfaction, drastic increases in evaluations

Suggestions and Post-Consultation Reflections

Michelle had come to the TEACH Program with a pre-established interest in active- and team-based learning strategies. Nevertheless, during the fall semester, her consultant encouraged her use of group work and her interaction with students, offering these suggestions for more successful implementation of the methods in extensive feedback and during personal consultations:

> The group work appears to be going very, very well in this class! A few comments from SGIDs suggested that there might be some groups with one/two workhorses and stragglers but overall seemed very positive. You may want to pay attention to this potential dynamic and try to identify problematic groups (and then target the non-participating students by asking them to report back for the group, etc.)

> When you walk around to different groups to "check in" with them, be patient. Most of the groups could likely have come up with their own answers, but you jumped in and gave them answers instead of prompting them to think. . . . In this situation, you might try asking them a question in response to their question. (Tapp, personal communication, October 16, 2006)

Michelle continued to implement collaborative learning activities in her class, making few radical changes, but rather fine-tuning her teaching style and maintaining her convictions about the value of active student engagement, for which her students were appreciative. In her spring SGID, some of Michelle's students wrote, "We like group work and how it betters our understanding of the material," and "Group work . . . helps build the foundation to understand the material with others that can help figure problems" (Boye, personal communication, March 6, 2007).

Furthermore, Michelle picked up on her students' positive reception of active and collaborative learning. In an interview following her fellowship in the TEACH Program, she noted that "the student response has been great," and that they continued to request "more group time, less lecture" (Boye & Tapp, personal communication, October 3, 2007). Michelle likewise noticed better class attendance as well as increased student involvement and responsibility. When asked about how she had changed as an instructor, Michelle commented, "As time has gone on . . . [teaching] became less oriented around me, the instructor, and more oriented around what helps [the students] learn the best" (Boye & Tapp, personal communication, October 3, 2007). Specifically regarding her use of active and collaborative learning strategies in the classroom, Michelle

added, "Previously . . . I didn't think I had time to let them get into groups. I thought I had to stand up there and go through every piece of material for them to learn it. . . . Now it doesn't look like the same class, even though they're learning the same material, and I think learning it better than they did before" (Boye & Tapp, personal communication, October 3, 2007). As she entered her first faculty position in the fall of 2008, Michelle declared that she was "going to keep implementing [active learning], no matter what I teach" (Boye & Tapp, personal communication, October 3, 2007). Michelle represents an instructor who has already implemented some elements of active learning but may appreciate simple objective feedback to recognize components in need of minor adjustment.

Case Study: Nancy

Background Information

Nancy, an instructor in marriage and family therapy, taught an introductory-level Civility, Ethics, and Communication course. We immediately noticed that many teachable moments were lost and opportunities for deeper-level learning and personal reflection vanished as the chaos in her classroom overwhelmed her. Nancy was a very personable young woman who seemed to struggle with the typical novice teacher pattern: "I want my students to like me." This desire to be friends with her students meant that the dysfunctional class got away from her, as students told irrelevant stories and led the class discussions down wayward trails. In her first SGID, one student said, "I love my teacher; however, I really dislike the class. I'm not sure why I'm taking it. It is informative but it frustrates me because I feel like I'm not learning anything" (Boye, personal communication, October 13, 2006). Another student expressed feelings about the class in this way: "Sometimes the lesson is exactly what you read so you already know it and it is hard to pay attention" (Boye, personal communication, October 13, 2006). Nancy's students overwhelmingly enjoyed the class discussions and open environment, but it seemed that they wanted more structure and deeper content as well.

Suggestions and Post-Consultation Reflections

During individual consultations and in our written feedback, we discussed with Nancy the benefits of incorporating active learning strategies in order to encourage more than just a few students to participate, and in more organized ways. For instance, her consultant wrote this:

I noticed that a handful of students did the most talking—another extremely common classroom issue. You certainly don't want to squelch participation, but perhaps there are some things you could do to encourage quieter or less-engaged students to participate. Incorporating some active-learning strategies could do a lot to get your entire class more involved with the material. Here are a couple of ideas:

Structured small-group discussion: This strategy might work really well for the kind of subject matter you are teaching because all students would get the chance to talk about their personal experiences in the small group, and then you can help synthesize some of their responses for the entire class without having to lose any discussion or material; you can also maintain control over the large class discussion as well as the questions to which they are responding.

Think-pair-share: This is also effective for encouraging quieter students to speak up because it allows them to "rehearse" their response and reach consensus with a peer before sharing with the rest of the class. An additional benefit of exercises such as these is that you can use them to get your students to engage more critically with the material because they have more time to think and prepare (as opposed to responding off the cuff during class discussion).

One-minute papers: Similar to your in-class writing, offer students a complex question to respond to for one minute, then ask them to share their responses. You could ask them to summarize the most important point of the class discussion, or to describe the "muddiest point," i.e., the concept they need help clarifying, etc.

Reciprocal questioning: The instructor provides the "stems" and the students then develop specific questions from the given stems and provide answers. Students can work individually, with a partner, or in a small group. This gets your students to really think as they devise the questions.[2] (Boye, personal communication, September 11, 2006)

As a result of these suggestions, Nancy made vast changes to her classroom methods within a single fall semester. She continued to involve her students actively during class time as before, but in much more meaningful and controlled ways. While she began the semester by relinquishing class discussion to her students for the entire period, by the end of the semester she was employing a variety of more sophisticated active-learning strategies such as directed small-group discussion, which her consultant

had suggested. The following semester, her students responded very positively to the activities and discussions she used in class and continued to request fewer lectures and traditional PowerPoint presentations. One group wrote during Nancy's spring semester SGID, "Exercises and activities work well because it breaks up the routine, and we can be active and voice our opinions" (Meixner, personal communication, March 28, 2007). Furthermore, for her TEACH project, Nancy redesigned the entire course to give it more depth, and some of her changes have been adopted by her former department.

Nancy was a younger instructor in need of focus who desired an interactive classroom and was open to active learning strategies. As consultants, we invested more time in Nancy based on her needs and interests, and we were able to take the journey with her to some exciting changes in her teaching.

Case Study: Becky

Background Information

Becky, an English instructor, taught a sophomore-level introductory fiction course. Her prior teaching experience included several semesters of freshman composition as well as teaching instructional technology in a lab setting, utilizing a "point-and-click" style of instruction. Unlike many literature classes we have observed, which typically include a great deal of student discussion and other engaging activities, this instructor continually relied upon lecture and PowerPoint presentations in a darkened room—perhaps a style influenced by her previous instructors. In our observations of Becky's class, we routinely noticed students entering late and leaving early, engaging in side conversations with one another over the instructor, and even cheating on quizzes. In one particular class she discussed a current novel and drew comparisons to a classic text the majority of her students had not read.

There was a clear disconnect between the instructor and her students as well as the material. During an SGID, her students confirmed their displeasure with the class, offering revealing comments such as, "I don't like that everyday we come to class and she just lectures. The benefit of a small class is that we can all discuss and have a more personal environment. I didn't feel like I got a chance to connect well with my peers or the works studied in this class" (Tapp, personal communication, April 7, 2006). Among other issues, students in both sections of her course agreed that there was not enough interaction with one another or time

spent discussing the texts; in short, Becky's students were crying out for engagement.

Suggestions and Post-Consultation Reflections

We had assumed that Becky, as a member of one of the "soft disciplines" that traditionally "tend to be more student-centered in their instructional goals and practices" (Braxton, Olson, & Simmons, 1998, p. 312), would be quick to adopt our suggestions about active learning and student engagement. Likewise, we suspected that it might be easy for Becky to incorporate these strategies, for what better way is there to learn the complexities and nuances of literature and critical analysis than to engage in activities such as small-group discussion or debate? Over the course of her fellowship with the TEACH Program, Becky had multiple teaching observations and videotapings. During these sessions, we provided her with many suggestions to promote more student engagement, including the following:

> Consider ways to increase the number of students involved and the extent of their involvement. The students were very passive in this session and could be involved more with simple techniques like questions or surveys. You might also consider the ideas mentioned in your other videotaping. . . .
>
> I would encourage you to step outside of your comfort zone and try some other teaching methods to enhance your lecture. Using the lecture as your primary delivery method is certainly satisfactory, but missing the connection with students is not, and you could enhance the interesting content delivered with interaction that would help the students relate to the material. (Tapp, personal communication, March 20, 2006).

In addition, Becky attended more than 40 hours of workshops at our teaching and learning center, and consultants conducted five SGIDs with her students. As mentioned previously, Becky's students consistently complained about the lack of interaction in the class, and they held nothing back in their SGID comments. One student even wrote, "I feel pummeled and hammered by this class. Although it isn't stressful or intense . . . it burns you out and steals your joy" (Tapp, personal communication, April 7, 2006).

In spite of her students' ongoing and palpable frustration with the class, and in spite of her consultant's devoted attention and continual emphasis on active learning as well as her discipline's generally wide-ranging acceptance of active and collaborative learning methods, very little changed

in Becky's classroom. While she did incorporate some group discussions, she continued to utilize lecture as her primary mode of delivery, and her students continued to be unhappy. During an SGID conducted the semester following her TEACH fellowship, students seemed to be enjoying what little interaction was involved in the class, but they still longed for more of it. Feedback from those students included, "I feel like I'm back in middle school during lecture and that the class is primarily filled with just busy work," and, "The teacher talks way too much" (Tapp, personal communication, October 20, 2006). Another student wrote, "The books are rarely discussed, and a 'discussion' in her class consists of a 5-minute PowerPoint presentation." Another commented, "Not having discussions completely deflates my desire to complete any of the reading assignments" (Tapp, personal communication, October 20, 2006). Evidently, what few, if any, changes Becky made to her class in pursuit of greater student engagement were not successful to the degree that we expected or hoped following her extensive work with the consultants at our center.

Because Becky was presented with numerous opportunities and resources, positive role models abound in her department, and we spent much time with her in one-on-one meetings, we remain a bit puzzled by her unresponsive approach to change. Perhaps another consultant should have become more involved with this fellow in hopes that a different connection could have been established. Similarly, we could have tried recruiting a different faculty mentor or peer mentor from her department to provide additional feedback and other perspectives that may have encouraged her to see the value of interacting with students. Taking a more direct approach, we might have suggested that Becky consider alternative career options and recommended that she find a field that would highlight her strengths and passion for literature. The bottom line is that we recognize that faculty developers simply cannot force change. Despite the seemingly "unsuccessful" result with Becky, we are comfortable with the efforts made on her behalf.

Case Study: Phillip

Background Information

Phillip, a computer science instructor—and one of very few graduate students in that department serving as an instructor—taught a large introductory course for both majors and non-majors in the fall. His class was heavily lecture based. We observed a typical classroom pattern: Students in the front row appeared to be somewhat engaged and following

the class content, while students toward the middle or back of the room were seemingly disengaged, as evidenced by their daydreaming, sleeping, playing online poker, staring into space, and more. The students' behavior was clearly passive and disconnected, although not with the level of aggression we observed in the English class discussed previously. Typical comments from Phillip's fall semester SGID included the following: "In a computer science class, I expect to see programs being run, not slides taken from a book" and "The PowerPoints he uses to teach the class do not give the student any interactive learning. It is hard to take anything from the PowerPoints because there is no interaction with the material" (Boye, personal communication, October 18, 2006). Many students recognized Phillip's knowledge and the difficulty of teaching students at different levels, yet a majority mentioned a desire for more interaction with the instructor and the content.

Suggestions and Post-Consultation Reflections

Given the tradition of lecture-based, instructor-centered teaching within his discipline, we anticipated that Phillip would be the most hesitant regarding the inclusion of active learning in his classroom. And quite frankly, from the fall to the spring semester of his fellowship, it was indeed difficult to detect change in his teaching. In the fall semester, after observing his class, one consultant discussed with Phillip the possibility of including some simple activities such as the think-pair-share, the muddiest point paper, and ungraded quizzes to engage his struggling students. The consultant specifically suggested these low-risk, active-learning strategies for this particular instructor as she took into account his seeming reluctance to lose control and hesitation to squander much class time on active learning.

The consultant's specific feedback to Phillip included the following:

> You might try pairing up your students or organizing them into small groups of 3-4 for a few minutes to work together in writing a code for a specific task based on the lecture material. If possible, you might even try pairing up weaker/less knowledgeable students with stronger/more knowledgeable students for such an exercise. You could then have the different pairs/groups report back to the class with their results, or write their results on the board, etc. If there are any differences, use those as a jumping-off point for class discussion. This could easily be a very brief activity, especially if students work in pairs.

> You might even try simply asking more questions and allowing

> more time for responses from students, as mentioned previously. Instead of feeding the students each line of code, what if you tried getting them to provide you with the next line of code, etc.? You could make your students a more integral part of the lecture in this way. (Boye, personal communication, September 27, 2006)

In addition, the consultant wrote in her feedback to Phillip,

> I know that there can be the fear of not getting through all the class content when active learning strategies or group activities are incorporated; however, many of the activities suggested here can be very brief and take place in less than five minutes, while you still reap the rewards! (Boye, personal communication, September 27, 2006)

In the spring semester, a different consultant went to Phillip's class and walked away with similar observations, suggesting that not much change had occurred. In his observational feedback, Phillip's spring consultant likewise wrote,

> While your volume, pace, and use of media during class worked well, the overall class environment was very passive. Students answered questions from time to time, but otherwise remained silent and uninvolved in the class. I strongly recommend including more active learning exercises during the class. (Jackman, personal communication, February 1, 2007)

When an SGID was conducted with Phillip's class, students surprisingly commented that they appreciated the "interactive learning" in which the instructor "often asks questions and uses student input when developing example programs" (Jackman, personal communication, March 20, 2006). One student who was enrolled in Phillip's class during both the fall and spring semesters even approached the consultant after the evaluation and declared that the class had vastly improved, remarking that the change was "like night and day." As we reflected on this comment with Phillip, we realized that, despite our initial inability to perceive it, significant change clearly *had* occurred in Phillip's teaching. As consultants, perhaps we could not see the forest for the trees in our failure to put Phillip's class into context by recognizing that the changes were significant for *him* and his departmental culture.

These positive comments from Phillip's students in the spring reflect their appreciation of and satisfaction with the increased interactive nature of his class. Ostensibly, the mere act of asking questions and listening to student responses greatly impressed the students. Just as some science,

technology, engineering and mathematics (STEM) instructors might be reluctant to attempt active-learning pedagogies (Braxton et al., 1998; Felder & Brent, 2005), it is possible that students expected less interaction in this computer science course than they would have in a humanities course, and there is some evidence that student expectations for course format and learning strategies change based upon discipline (Jones, Reichard, & Mokhtari, 2003). That is, while we as consultants did *not* perceive Phillip's changes to be radically interactive, perhaps his students perceived his changes to indeed be so because they expected no interaction at all. Nevertheless, as he indicated in follow-up interviews and his SGID data revealed, Phillip clearly took to heart our suggestions regarding active learning, and he made notable changes to his class that his students welcomed. After reflection, we count our experiences with Phillip a highlight of that year.

During an interview following his tenure with the TEACH Program, Phillip shared more about the nature of the changes he had made to his teaching and the results of those changes. He remarked that his students were "shocked" and had told him, "You are the first teacher to ask [us] for feedback about the class" (Boye & Tapp, personal communication, October 3, 2007). He likewise affirmed that while his students were at first a bit hesitant to participate by going to the chalkboard to write programming code with the class, "at the end of the semester everybody was happy, and [he] had many students who wanted to go to the board or the computer" (Boye & Tapp, personal communication, October 3, 2007). Despite our expectations, Phillip had, in fact, included some very effective active learning strategies; as a result, his students had responded with gratitude and success. In that same interview, Phillip divulged that in his discipline of computer science,

> [Instructors are] more involved in research than in teaching. There's a big concern about the retention of students . . . but they don't talk about *how* to retain the students. At the beginning when I started teaching, I probably had 20 percent of students who just dropped the class. And now I just have one student who dropped the class this semester, and I have 44 students. Why? I think it's the way that we teach that is different. (Boye & Tapp, personal communication, October 3, 2007)

As our experiences with Phillip demonstrate, as faculty developers we often assume information about our instructors without considering sufficiently their own individual mental models or personal/disciplinary environments. Had we been more cognizant of Phillip's circumstances, perhaps we would not have been so surprised by the results. Phillip's ex-

periences with active learning have become a beacon to our work as faculty developers. They reaffirm our belief in the consistency of our approach, but also bringing to light several new questions for us to consider—namely, should we revise the way we conceive of active learning as faculty developers, as well as the way we approach consultations in general?

Realizations

As previously noted, our teaching and learning center maintains active learning as one of its core values. As such, active learning was the centerpiece of our feedback to each of the four selected instructors. And while we continually recommend active-learning strategies to a variety of instructors, we as faculty developers do not always expect them to approach those strategies with the same enthusiasm that we do. We know all too well that there are a number of "barriers" to active learning that many faculty members anticipate, such as student reluctance or administrative misperceptions (Kloss, 1994). Other instructor-identified barriers include loss of control over the class and, with it, a loss of self-confidence; the loss of content coverage; and a general lack of familiarity with active learning (Barr & Tagg, 1995; Niemi, 2002; Panitz, 2003; Silverthorn et al., 2006; Weimer, 2002). Often, such perceived obstacles and subsequent openness to active learning can be divided along disciplinary lines. Braxton et al. (1998) found that faculty members in the "hard" disciplines, such as math and science, tend to favor fixed structure and instructor-centered methods. They frequently are, therefore, less willing to explore new teaching methods that deviate from those customarily used within their discipline. Despite encouraging National Science Foundation grant work investigating active learning in the sciences, perhaps instructors in the STEM disciplines are more reluctant to attempt active-learning strategies because they are still less common in their fields (Felder & Brent, 2005). Feldman and Paulsen (1999) and Michael (2007) report that the perceptions of colleagues as well as the culture of learning within a department or institution can inhibit active learning pedagogies.

As we expected, our four instructors did not equally embrace our suggestions of active learning strategies; nevertheless, their respective responses were unexpected in other ways.

Active Learning Works

Our work with each of these four instructors confirmed our notion that active learning *should* work for every instructor and indeed is not

old-fashioned or out of date. As we have always maintained, active learning is a sound pedagogical approach, and there is ample evidence that it works to improve student learning and engagement (Bosworth & Hamilton, 1994; Chickering & Gamson, 1987; Ezrailson et al., 2006; Hrepic, Zollman, & Rebello, 2007; Jacob & Eleser, 1997; McCarthy & Anderson, 2000; Meyers & Jones, 1993; Niaz et al., 2002; Panitz, 1999; Straits & Wilke, 2006; Towns & Grant, 1997) as well as to improve student retention in the university (Braxton et al., 2000). And even though it is difficult to change the way one teaches, especially in fields such as the "hard" sciences where lecturing is often deeply ingrained, educational reform is being increasingly demanded (Barr & Tagg, 1995; Felder & Brent, 2005; Halpern & Hakel, 2002; Michael, 2006; Nelson, 1996; Niemi, 2002). Our experiences with the four instructors certainly substantiate the benefits of including active-learning strategies in the classroom across the disciplines: Nancy, Michelle, and Phillip each made efforts to incorporate active learning to some degree, and each was met with positive student feedback and retention, regardless of or even because of his or her discipline's characteristic teaching paradigms. In contrast, Becky, who chose not to implement any of the suggestions about active learning even though student feedback specifically requested more interaction and engagement, continued to receive negative student evaluations. These case studies reinforced for us as faculty developers our core belief in the value of active-learning pedagogies.

Developmental Processes and Disciplinary Differences

This study also carried with it similarly important lessons for us in terms of faculty development practices. Because, depending on their individual institutional or disciplinary environment, many faculty members and graduate student instructors may never have had any experience with active learning in the classroom, we as faculty developers must continue to play an active role in educating the educators (Braxton et al., 2000; Garet et al., 2001; Halpern & Hakel, 2002). Our job was relatively easy when working with Nancy and Michelle, for they brought with them some experience with active and collaborative learning and an openness to change. Phillip, however, brought with him reluctance of his discipline and his discipline's firmly established tradition of didactic lecturing. Nevertheless, through our continuous work with him in observations, student evaluations, workshops, and consultations, he made the decision to make small yet effective changes to his classroom—with resounding success. As Michael (2007) contends, no single or collective barrier makes active

learning impossible, and those perceived barriers "can be overcome with creativity and flexibility" (p. 46). Our experiences with these instructors demonstrate that even if the instructors we work with are only capable of seemingly small developmental changes toward active learning pedagogies, the efforts are necessary and worthwhile. What we must not forget is that like teaching itself, fostering faculty development is indeed a learning and evolutionary process. There is no effective teaching "switch" that can be flipped for instantaneous success. Whether working with graduate students or faculty members, faculty development requires an effortful practice of observation, feedback, and reflection about what an individual instructor needs and will respond to rather than a set of "tricks" kept in a ubiquitous toolkit.

We further recognized that an equally critical part of fostering the developmental process involves maintaining an understanding of where our learners, or instructors, are starting, and an awareness of what they bring to our table in terms of external circumstances, disciplinary styles or expectations, or even past experience. Having that awareness can help us meet instructors as individuals and build a stronger and more effective consulting relationship and practice as a center. For example, we recognized Phillip's disciplinary-based hesitance to embrace active learning, so we purposefully refrained from discussing high-risk, high-effort strategies with him. As a result, he eventually tried some of the simple activities suggested with great results, and he now maintains a firm belief in the value of student engagement. Perhaps we would have found greater success with Becky had we presumed less about her discipline's traditional acceptance of active learning and considered her personal teaching experiences more deeply.

We likewise discovered that active learning is not the same in all disciplines. This became clear to our consultation team after working with Phillip: Although he appeared to us to be an instructor who ignored our suggestions in the fall and maintained a passive learning environment in the spring, he did, in fact, acknowledge our ideas and took steps to implement them *in his own fashion*. We came to the realization that we were pigeonholing our instructors into a method that fit our narrow scope instead of being willing to recognize that active learning methods are not one-size-fits-all. Rather, we discovered that active learning methodology falls along a continuum of simple to complex, and activities at either end of that spectrum can be effective, particularly when put into the greater context of a given discipline, set of students, or even an individual instructor. While Phillip's active-learning methods were simple, they still fall along the continuum of active learning. Nancy, our marriage and family therapy

instructor, would fall at the other end of the continuum given her use of numerous and generally more complex active-learning methods—short writes, structured small-group discussion, and large-group discussion. Ultimately, we realized that in working with instructors from a variety of backgrounds, experiences, and disciplines, faculty developers must remain aware of and celebrate that continuum of styles and even the smallest of incremental gains.

Concluding Reflections

Active learning doesn't "just happen" (Michael, 2006), and the faculty development process is critical to helping instructors become familiar with and implement new approaches. Reflecting on our tendency toward active learning recommendations as consultants has caused us to think about how we train new faculty developers. We will continue to advocate active-learning approaches in our work with instructors, but in doing so, we must remember that active learning could potentially be a foreign language to many of them. As such, it is our duty to serve as models for the approaches we suggest that instructors bravely try in their own classrooms (Desimone et al., 2002; Garet et al., 2001). Likewise, we must recognize that sometimes more than one workshop or one consultation may be needed to trigger the kind of change we might seek.

As part of these four case analyses, we also examined the instructors' university-administered, end-of-semester evaluations for two consecutive semesters. The end-of-semester evaluations at Texas Tech University are similar to standardized, university-wide surveys given to students at other universities. Analysis of that data did not reveal statistically significant changes for Michelle, Nancy, or Becky over the two-semester period. Phillip's evaluation data, on the other hand, showed more dramatic improvement.[3] Perhaps pre- and post-testing of course concepts and additional student surveys asking questions that specifically focus on active learning would afford a more tangible measurement of the changes made in the instructors' teaching and student learning. For future work, a larger study of both faculty members and graduate students would be beneficial. It would also be worthwhile to follow the instructors studied here in their future careers to consider their long-term adaptation of active learning strategies. A wider scope could help determine whether Phillip's case is unusual or actually more representative of the success that can be found through seemingly small changes.

Faculty developers and teaching and learning centers must never cease encouraging new innovations for instructors while striving to maintain

a constant awareness of and appreciation for the individual needs and circumstances that influence them as learners. Most importantly, it is essential that we embrace the idea that even a modicum of change is a success. To do so, we need only recognize that active learning is a mutable concept that can mean different things to everyone—students, instructors, and faculty developers alike.

Footnotes

[1]Names of the highlighted instructors have been changed to preserve anonymity.

[2]This is an abbreviated version of the feedback provided to the instructor.

[3]External factors that may have influenced the standardized university evaluation data include the basic logistics of the courses being taught. Theall (2005) shows that new classes, introductory classes, and courses for non-majors traditionally receive lower overall evaluations. Additionally, students may exhibit reluctance to adapt to more interactive teaching methods. Finally, the university evaluations include no questions that directly or clearly measure active learning.

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