The Active Learning Institute:
Design and Implementation of an Intensive
Faculty Development Program

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By designing and implementing a long-term faculty development program called the Active Learning Institute, a large research university began shifting the culture of teaching and learning on campus. Faculty across ranks and disciplines are participating in this series of workshops and demonstrating measurable changes to their teaching through the increased use of active learning strategies and the decreased use of lecture. In this article, the author describes the design of the Active Learning Institute and its successful implementation in its first two years.

Introduction

Each year brings more research about the positive effects of active learning on student learning, collaboration skills, and problem-solving abilities. While the data offers compelling reasons for adopting these techniques, faculty face certain challenges to actually implementing them in their courses. Class size, teaching load, fear of lower student evaluations, and promotion criteria that favor research are just some of the reasons faculty feel they can't (or shouldn't) make changes to their teaching. So how can universities, especially large research universities, create a culture shift that values teaching and supports faculty in their efforts to learn about active learning techniques and alter their teaching methods?

This article describes the Active Learning Institute (ALI) that was developed in the Division of Teaching Excellence and Innovation (DTEI) at the University of California, Irvine (UCI), to facilitate and support faculty members in making active learning a bigger part of their teaching. I discuss as well as the institutional support that implemented an active learning certification program tied to a new building of active learning classrooms.

Program Creation

The DTEI is housed in the Office of the Vice Provost for Teaching and Learning (OVPTL) and comprised of five areas of instructional support: faculty, graduate students, online education, learning environments, and teaching and learning research. The goals of the division include:

1. Enhance pedagogical training for faculty, graduate students, post-doctoral scholars, and staff by providing and developing certification, teaching assistant training, and fellowship programs.
2. Partner with campus researchers to collect and disseminate data on evidence-based practices that the campus community can use to improve student success.
3. Promote the effective utilization of digital technologies by the UCI community to foster teaching innovation and enhance student face-to-face and online learning.
4. Coordinate efforts to systematically align campus learning environments with current and emerging educational practices to maximize student success.
5. Evaluate the impact of DTEI programs and campus learning environments on both students and instructors, utilizing assessment data to further improve teaching and learning on campus.

Approximately 20 team members of staff, researchers, and postdocs work in DTEI and are responsible for a range of programming, events, grant projects, and assessments. As the Director of Faculty Instructional Development, I was tasked with creating and implementing a training program focused on increasing UCI faculty's use of active learning strategies. The impetus behind the development of a program was the construction of a new active learning classroom building, the Anteater Learning Pavilion (ALP). The Vice Provost wanted to implement a certification program giving participating faculty priority scheduling in the 15 classrooms of the ALP. The VP, the Provost, and the registrar created a priority scheduling policy for faculty who completed training, so in 2017, I created the Active Learning Institute.

The ALI is a series of eight, 90-minute workshops that meet bi-weekly during an academic year. The program is capped at 32 spots and is led by myself in partnership with a classroom technology specialist and a learning spaces analyst. It is open to faculty of all ranks, including adjuncts, and is held in a classroom designed for active learning with movable tables and chairs. One

piece of technology and a research overview are shared at every session. Each session also includes a faculty guest speaker that has experience with the topic.

Each workshop focuses on a different topic and models strategies that faculty can use in their own classes. It also includes a research repository where faculty can browse articles on active learning by discipline as well as topic.The ALI is designed to be highly interactive so that faculty build a community of practice that offers perspectives, strategies, and resources from across disciplines and faculty ranks. Together, the group of participants focuses on the following goals:

- Review the literature on evidence-based practices in active learning;
- Participate in, apply, analyze, and discuss active learning pedagogical strategies and instructional tools;
- Apply evidence-based practices to lesson designs.

The length and breadth of the institute gives faculty time to review active learning research, discuss strategies for implementation, redesign aspects of their courses, and practice these changes while receiving support from the cohort and the facilitators.

Following completion of the ALI, faculty complete a class observation to measure the amount of active learning and lecturing taking place. Trained observers use the Classroom Observation Protocol for Undergraduate STEM (COPUS) to capture data digitally on the Generalized Observation and Reflection Platform (GORP), which then allows us to see the percentage of class time spent on each teaching strategy (Smith, Jones, Gilbert, & Wieman, 2013). Faculty cannot spend more than 50% of class time on lecture in order to obtain certification in active learning. This number is supported by findings that instructors who spent between 20% and 60% of class time lecturing while incorporating active learning most likely saw their student evaluations increase (Henderson, Khan, & Dancy, 2018).

For faculty already using active learning techniques, there is a second certification option through a consultation and a teaching observation. Faculty meet with a DTEI staff member to briefly describe their current teaching practices and how they came about using these strategies. They are then observed using COPUS and must meet the same requirement of less than 50% lecture time. Once faculty are certified, they gain priority scheduling privileges in any active learning classroom on campus. DTEI shares the list of

certified faculty with department schedulers and the registrars to facilitate this process.

The length of the program and the required observation are what make the ALI different from training programs at other institutions. Although it requires a larger commitment from faculty, the intention behind the institute is to facilitate lasting pedagogical change through the in-depth exploration of active learning and support of a cohort.

When I sat down to design the ALI, a number of sources helped shape the program. One book in particular, *A Guide to Teaching in the Active Learning Classroom* (2016) by Baepler, Walker, Books, Saichaie, and Petersen was especially useful. Their discussion about active learning classrooms served as a foundation that helped me think about how the ALI could continue moving the field forward. The chapter on managing student groups focuses on strategies for forming groups, ideal sizes, group roles, and ways to manage group dynamics, which helped shape an entire ALI session on group work. I also followed their recommendations in the chapter, "Supporting Faculty," on designing an institute. They stress the need to give faculty time to process information, interact with each other, and begin working on their materials. The chapter includes appendices of sample workshops and a same three-day institute schedule (Baepler et. al., 2016).

University of Iowa's program in supporting faculty with active learning strategies also influenced the design of the ALI. Their TILE project focuses on room design, access to active learning classrooms, and professional development programs to support faculty teaching in these rooms. Iowa developed a three-day institute for faculty to learn and develop "TILE pedagogies" while also connecting with faculty from across the disciplines (Florman, 2014).

Barkley's *Student Engagement Techniques* expanded my toolbox of active learning strategies to share with faculty. The tips and strategies section covers fostering motivation, promoting active learning, building community, and assessing learning (Barkley, 2010). I modeled a number of the ALI sessions after these important considerations. *Make It Stick* gave me the language behind the science of why these techniques work and helped me incorporate techniques involving student recall, elaboration, and reflection (Brown, Roediger, and McDaniel, 2014).

My introductory POGIL training influenced the design of group work and the importance of structure and student roles. In particular, the pre-made POGIL role cards are now a major part of the ALI and discussions on how to organize student groups and promote inclusive practices ("POGIL,"

2017). And Mary Ann Winkelmes's (TILT Higher Ed. 2014) work on transparent teaching is woven throughout the ALI, but especially in the sections on course design and inclusive teaching. The Transparency in Learning and Teaching (TILT) Higher Ed emphasizes the importance of making the purpose, task, and criteria of each assignment clear to students, taking the guesswork out of how they should complete the assignment and how it will be evaluated. The TILT project shows gains in student learning and shrinking equity gaps when faculty implement transparent teaching methods (TILT Higher Ed. 2014). I combined the knowledge from these sources, my own experiences and trainings, and some creativity in the design of the ALI.

The ALI is very much modeled on how instructors should think about their courses. The first two sessions focus on community building and explorations of what active learning is and the faculty's preconceived notions about it. Some faculty come in with no experience while others have quite a bit and are looking to learn more. It's important to establish a climate in the ALI that recognizes the varying levels of experience and offers multiple levels of engagement, which is what faculty should do in their own classes. Making goals and expectations clear as well as establishing a pattern of how the ALI functions creates faculty buy-in and has resulted in over 95% of participants completing the program.

Another cornerstone of the ALI is practice. Faculty must be given the opportunity to see an idea in action. In sessions on course goals, steps and examples are provided, and faculty also work on sketching their goals and sharing with their groups. In sessions on activities and group work, the importance of individual roles and peer accountability are covered. Faculty are then given a short activity to practice the techniques where they are assigned roles and asked to complete a short task. They are able to experience these practices from a "student's" perspective before implementing them in their own classes.

Finally, a third key component of the ALI is the space to share. Faculty are given the chance to talk with their peers at every session; I have found this is where a lot of ideas and partnerships are born. Participants love to share their own experiences with each other, and faculty seem more open to trying something when they hear that one of their peers is already successfully doing it. They are also given the opportunity to provide feedback on the ALI at the halfway point. I review the feedback and share the results with the group in an effort to model a practice that faculty will implement as well.

These key practices make the ALI successful and have led to the creation of the ALI Alumni group, since faculty wanted to continue to get together and talk about teaching after the ALI concluded.

Program Description

Each session of the ALI is designed to reflect current research, experiences of other UCI instructors, common challenges and concerns, and best practices for implementation. Using elements of backwards design, the institute addresses strategies at the course level, assignment level, and the daily class level, so that faculty have explored all facets of their teaching by the time they complete the ALI.

Session One: Introductions and Faculty Buy-In

The main goal of the opening session is community building. Many faculty at UCI lack opportunities to discuss teaching with each other, so a cornerstone of the ALI is to simply provide that space and time for collaboration. Because the ALI begins in summer, the opening sessions were originally held on Zoom, which also allows faculty to learn more about this tool. But after we started meeting in person, faculty shared that they found the face-to-face sessions much more powerful. So all sessions now happen in person.

This first session is also key in creating faculty buy-in and a clear understanding of the goals of the ALI. Some come in thinking this is all about technology while others have reservations and skepticism about active learning in general. A good portion of time is spent addressing these concerns while encouraging faculty to take some risks with their teaching. Faculty often wish students would take more risks with their work, so shouldn't they be willing to do the same with their teaching?

One portion of the introductory session is called "Addressing the Yeah, Buts . . . " which addresses the most common barriers faculty cite to implementing active learning. These barriers include:

- Yeah, but… my class is too big for active learning
- Yeah, but… I have too much content to cover
- Yeah, but… my department controls the curriculum/class is part of a series
- Yeah, but… my students don't read/talk/prepare for class

- Yeah, but . . . I'm not convinced active learning works better than lecture

By tackling this the first day of the ALI, their concerns are made visible without being dismissed, but they are also assured that there are remedies for all of them. Active learning is going to look different in different classes so faculty are asked to reflect on their goals for teaching and their personal strengths. The goals and strengths should shape how they incorporate active learning into their courses.

Session Two: Analysis and Inspiration

As homework following the first session, the ALI provides faculty with video segments of colleagues using active learning strategies in their classes (one large and one small) and asks participants to analyze, reflect on, and discuss what they see happening. During the second session of the ALI, faculty discuss their reflections in small break-out groups. I have found that faculty seeing examples from their own colleagues versus general teaching videos is more impactful and inspiring. I tried to take this a step further by organizing open class observations where ALI alums opened their classrooms to current ALI faculty to come watch. However, attendance in these open classes was very low so I have put that strategy on hold. Videos seem to appeal more because faculty can watch them on their own time from any place.

The goal of this session is to help inspire faculty (and address any skepticism) and get them thinking about what they could redesign in their own classes. The discussion of the videos is structured around what they see as well what it made them think about their own courses. Sometimes faculty have trouble seeing past their potential barriers, so this session is meant to push them past this.

Session Three: Course Design

Session three focuses on course design and crafting goals and learning outcomes that are measurable (Fink, 2003; Wiggins & McTighe, 2005). It is important that faculty design new assignments, activities, and techniques grounded in these course goals versus choosing techniques based simply on intrigue or popularity. I also learned from our pilot session that many faculty struggle to write good student learning outcomes (or don't use them at all).

I feared that without addressing this in the ALI, faculty would be haphazardly choosing active learning activities without considering how they aligned with assessments and course goals. So the goal of this session is to have faculty construct SLOs as part of their course redesign.

The session is a mix of instruction and practice using backwards design and Bloom's Taxonomy. Faculty first practice assessing example student learning outcomes in small groups before then drafting and sharing their own. Interestingly, this is the session that faculty struggle with the most. Drafting SLOs that are actionable and measurable proves to be more difficult than they anticipated, and this difficulty leads to some pushback on the idea of SLOs in general: Are they really necessary?; Do students even care about them? Some participants even complain that they find the structure of SLOs prescriptive and restricting. This is the session I have revised the most over the last two years because of this resistance and frustration. It became its own session versus just a topic in another one, and I altered the tone to help faculty to see SLOs as tools that help them (as well as students) create a roadmap that aligns everything for their course. I also emphasized the role SLOs play in transparent teaching and addressing those unwritten rules of college. This focus, especially, has helped more faculty recognize the importance of SLOs in creating an equitable classroom.

Session Four: Active Learning Activities and Assignments

Session four shifts focus to assignments and in-class activities that use active learning strategies. The importance of purpose and goals continues to be emphasized while faculty are presented with multiple strategies that range from simple to complex (Barkley, 2010). For example, start with quick and easy techniques such as exit ticket, minute papers, and think-pair-share. I emphasize strategies that are flexible for classes of any size and relatively easy to start using right away. More complex strategies such as jigsaw are also discussed, and faculty share their experiences and tips for success.

Faculty then practice two strategies that have different purposes. First, I have them practice a version of focused listing where they read a short article individually and then write down everything they can remember without looking at it again. They then turn to a neighbor to compare lists and see what else they could add to their list. In the debrief, we discuss how this simple activity helps students practice recalling information while also connecting with classmates. It is a great lecture break strategy where faculty can

also see how well students are following the lesson based on how much they retain along the way.

The second strategy faculty practice during the session is an example of collaborative quizzing. Faculty are given a short quiz that they take in groups using the Instant Feedback Assessment Technique scratch cards. This activity aims to help them rethink how they do exams/quizzes by utilizing strategies that give students faster feedback, allows them to make mistakes without full penalty, and allows them to discuss and assess their thinking by taking exams in groups versus individually. Even though scratch cards are not the only way to execute this strategy, the activity does add an element of fun and anticipation through the act of scratching to see the right answer. After the session, faculty are assigned groups and given a homework assignment. Each person drafts an activity or assignment that utilizes active learning and shares it with their group in order to get feedback, which is shared face to face during Session Six.

Session Five: Group Work

While research shows that collaboration can increase student learning, group work is often executed poorly, which leads to student dissatisfaction and conflicts. It is important to design group assignments or projects that set students up for success while also being equitable and providing accessible opportunities for all students (Finnegan, 2017). During this session, faculty are introduced to a set of best practices, such as low-stakes assignments so groups can practice working together before tackling a major project, individual roles so that each student has a specific set of responsibilities, and peer assessment so that students can offer each other feedback (Davis & Arend, 2013). In order to see these strategies in action, I assign faculty roles, using cards from POGIL as an example, and give them a small task so they can better understand how the roles can work with their students. The goal is to get faculty thinking about what roles would work in their respective classes and drafting plans for implementation.

Session Six: Inclusive Teaching and Feedback

The first half of session six focuses on small but powerful changes faculty can make to ensure their courses are more inclusive. As they add more interaction to their courses, I stress that they need to be making these changes

with inclusivity in mind. While each session does involve inclusive strategies, this session focuses on strategies such as using captions while showing videos, putting course materials on reserve, and using transparent design on all assignments. Feedback from this session indicates that faulty really want more guidance about inclusive teaching, so DTEI is currently drafting plans for a separate institute that focuses entirely on inclusive teaching.

Faculty spend the second half of the session with their groups, sharing feedback on their lesson plans. Each person received a list of questions to answer about their draft (What's the class size?; What are the learning outcomes?; What is the assessment plan?; etc), which provides structure and focus to the feedback and discussion. Faculty have shared how much they value just having time to discuss and draft ideas. I had originally cut this time after the pilot, but faculty requested more time to work together. So I put the feedback session back in.

Sesssion Seven: Classroom Space and Technology

Session seven is dedicated to teaching with technology and effectively using active learning spaces (Talbert & Mor-Avi, 2018). This session purposefully comes later in the series because we found that many faculty assumed active learning had to use technology, especially in the newly built classrooms. The ALI strongly emphasizes technology as an intentional option, not a requirement, and non-tech versions of activities are routinely shared as well. While technological possibilities excite some faculty, others come with trepidation or suspicion. So by my placing this session later, faculty have had time to focus on their goals and their assignments and can now think about how technology might enhance their teaching.

Whenever possible, we hold this session in one of the ALP classrooms so that the classroom technology expert can demonstrate a few tools, like how to control the monitors at each pod or how to connect different devices. An ALI alum then does a guest presentation on how they have used the room and leads the group in a sample activity. I find it valuable for faculty to see how one of their peers uses the space.

Session Eight: First Day and Student Buy-In

Session eight emphasizes the importance of student buy-in and a well-designed first day of class. Now that faculty have their goals and assignments in place, they need to think about making all of this clear to their students.

One of the biggest lessons of this session is that the first day of class should reflect the course, so if the instructor has designed a discussion-based course, some sort of discussion needs to take place on day one. Or, if there will a lot of group work, students should do something in groups on day one. In addition, the instructor also needs to cover what the course is about and why. What are the goals? What should students expect to learn and how will they be doing that? This level of transparency takes out any guess work on the student's part as to why the class is important and what they should get out of it.

After a brief discussion of first-day best practices (Lang, 2019), I lead faculty through an interview activity in which the instructor asks students about their expectations for the course, for themselves as students, and for the instructor (Hermann & Foster, 2008). Faculty act as students and discuss these expectations in small groups and then share out. I write their answers on the board as a demonstration of how this activity could lead to a course social contract. We also discuss different versions of the activity for large classes, such as having students submit answers electronically. The activity models a way of getting student buy-in by having the students play a role in establishing the expectations of the course.

Results

In 2017, UCI piloted its first ALI (originally called the Engaged Learning Institute) with 23 faculty from a variety of disciplines, ranks, and levels of experience with active learning. We recruited participants through email announcements from the Vice Provost that emphasized the certificate and priority scheduling in the ALP. During the 2017 – 2019 academic years, 98 faculty completed the ALI through multiple cohorts (Table 1 and Table 2). Because popularity of the program and the new building spread quickly, we did not need to advertise beyond one email announcement. In less than two years, we have certified 121 faculty with another 79 in progress (this includes faculty doing the consultation and observation option) and 64 faculty signed up for future institutes.

Faculty satisfaction with the program is exceptionally high and has resulted in a year long waitlist for the program despite offering multiple sessions a year. One hundred percent of participants surveyed said they would recommend the ALI to their colleagues.

Table 1 **Faculty by Title**					
	Assist. Prof.	Assoc. Prof.	Professor	Lecturer	Other	Total
Partici-pants	25	24	14	23	12	98

Table 2 **Faculty by Field**							
	Hum/ Arts	Soc. Sci.	STEM	Busi-ness	Health Sciences	Educa-tion	Other	Total
Partici-pants	31	13	36	2	7	3	6	98

Here are just a few of the comments received:

> "Your course was so helpful to me, and thereby to my students! I feel empowered to facilitate learning."

> "I'd also like to thank you…for running such a tight and consistently useful program. I assumed, with some misgivings, that it would be tech-oriented, and was really pleased and impressed that it was gen-uinely about, and helpful for, improving one's teaching on the whole. I'm recommending the course to my peers."

> "Thanks for an amazing session! This has been by far the best PD that I have received since I started being a faculty member in 2008."

After the pilot program, we began more in-depth assessment that went beyond satisfaction surveys. We implemented pre-ALI COPUS observations so that we could compare it to the post-ALI COPUS observation. We also added a pre- and post-ALI Teaching Practices Inventory (TPI) in order to gauge how much faculty were changing their pedagogy after completing the ALI (Wieman & Gilbert, 2014).

Although we are still early in the assessment process, initial results are promising. Pre- and post-COPUS results show decreased lecture time and increased use of group work. Pre- and post-TPI results also show significant increases in the amount of evidence-based teaching practices used by faculty following the ALI.

Going Forward

The ALI is continually updated with new readings and additional research articles about the effectiveness of active learning. Assessment using COPUS and the TPI will also continue and as that data grows, the results will guide us in the continual improvement of the ALI. While there are initial plans to open the ALI to graduate students, the current demand from faculty remains high, so registration remains limited to faculty only for the next few years.

As we continue working with the registrar on priority scheduling for certified faculty, we anticipate needing to create additional certification policies such as certified active learning courses in order to meet the scheduling needs of different departments. We also anticipate new challenges as the number of certified faculty grows and access to active learning classrooms becomes harder. Fortunately, the success of the ALI and the popularity of the new classrooms led to more classroom renovations during the summer of 2019 with more planned over the next five years.

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