

PREPARING FACULTY TO TEACH IN AN ACTIVE LEARNING CLASSROOM

By

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To my amazing son, husband, and mom

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Abstract of Thesis Presented to the Graduate School
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Active learning, an instructional method that engages students in the learning process, is becoming more common in higher education (Prince, 2004). This method can be implemented in a traditional lecture hall or a room designed specifically for active learning, but these teaching strategies are a shift for most faculty members away from sage-on-the-stage lectures and exams. As a result, faculty development has become a new challenge for some, as active learning teaching strategies are becoming more popular in some schools.

The purpose of this research was to explore what other universities are doing to help prepare their faculty for teaching in an active learning classroom. Data were collected through semi-structured interviews with six universities about their experiences with faculty training on pedagogy and technology for active learning. The goal was to discover what commonalities might exist, along with any outliers, and to develop recommendations for schools developing active learning training.

CHAPTER 1 INTRODUCTION

Learning does not just happen in a classroom, but everywhere and potentially at any time. This means that an entire campus could be considered a 'learning space' (Brown & Long, 2006). Some environments are more suited than others to the type of student-centered reflection and participation embodied in active learning. As a result, it is becoming increasingly common for universities to make the transition towards more flexible, engaging classrooms, both newly constructed and newly renovated (Lippincott, 2009), as well as considering not just formal classrooms, but all potential learning spaces including study spaces, libraries, student commons, dorms, coffee shops and the like during space planning. Renovations and remodeling are not likely to occur frequently; consequently, careful planning and implementation are required to ensure that the results of these projects are lasting and beneficial (Bickford & Wright, 2001). Bickford and Wright (2001) state the need for team learning to help guide the design choices made with active learning in mind.

We need a community of faculty, administrators, facilities managers, architects, students, student development professionals, technologists, and other stakeholders to participate in a process of dialogue and discovery, creating spaces to engage faculty and students in the pursuit of learning. (Bickford & Long, 2001, p. 5)

But why is active learning important? Active learning, also called student-centered learning, describes the process whereby students participate in some activity that allows them to reflect upon ideas and how they are using them, while also assessing their own understanding and skill (Michael, 2006). These methods yield a variety of benefits: they are student-centered, they maximize participation; they are highly motivational; and they give life and immediacy to the subject matter by encouraging students to move beyond

a superficial, fact-based approach to materials (McCarthy & Anderson, 2000; Bonwell & Eison, 1991; Ladousse, 1987; McKeachie, 1999; Schaftel & Schaftel, 1976; Van Ments, 1994). More specific active learning teaching techniques will be explained in a following section. For now, Figure 1-1 shows what is called the ‘cone of experience’ and reflects the order in which learning activities move from passive to active. This helps to shape our understanding of those activities that are considered more active.

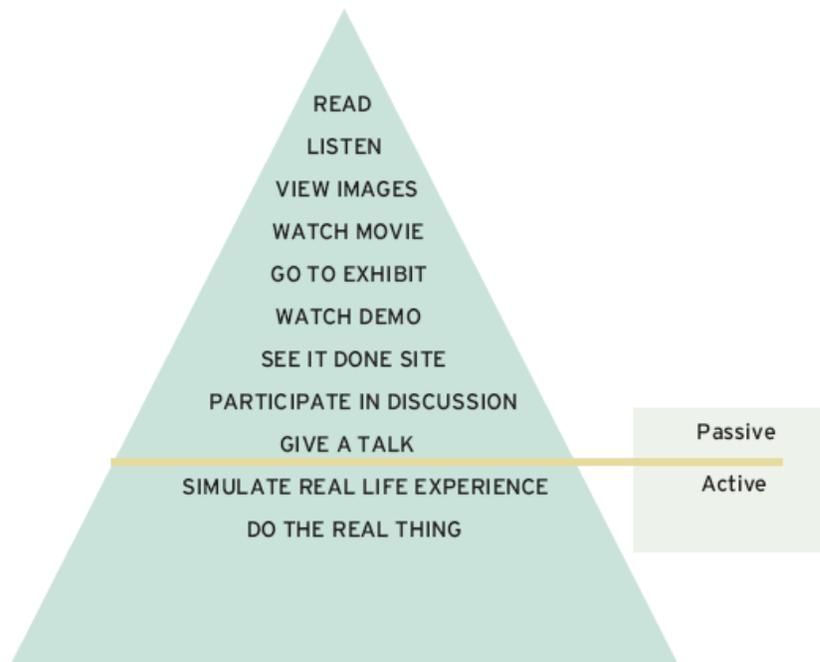


Figure 1-1. The Experience Cone. Source: J. Huang, Harvard University Graduate School of Design, personal communication. Adapted from Edgar Dale, *Audiovisual Methods in Teaching*, 3d ed. (New York: Dryden Press, 1969).

“Our growing understanding of how people learn affects the configuration of learning spaces and the technologies supporting them” (Brown & Long, 2006, p. 9). This study will focus on formal classroom spaces, more specifically active learning classrooms, wherein formal teaching occurs. The goal of this research is to help inform decisions about the resources and preparation needed to create and encourage a more effective active learning atmosphere for meaningful learning to occur.

These environments are designed to support a constructivist view of learning, “where meaning is personally rather than universally defined” (Land et al., 2012, p. 4). As new teaching strategies emerge to enable learning, many are “rethinking the use, design, and location of such learning spaces” (Brown & Long, 2006, p.1). In the *Future of the Learning Space*, Long and Ehrman (2005) share four ideas which can help shape our understanding of active learning classrooms and how they might be designed:

1. Learning by doing matters.
2. Context matters.
3. Interaction matters.
4. Location of learning matters (Long & Ehrmann, 2005, p. 46)

What does an active learning classroom look like today? An online search for today’s universities with active learning classrooms will yield a variety of visuals. Common features include round or moveable tables, chairs with wheels or ones that can stack to accommodate the dual needs for added seating or alternatively for ample floor space. The instructor podium might not be in the front of a room or even in the corner, but is instead commonly in the center of a room, removing the front of a classroom. This encourages instructor motion and facilitates collaboration (Leiboff, 2010). Figure 1-2 shows an active learning classroom at the Massachusetts Institute of Technology that illustrates other common features which include projection screens in addition to an abundance of white board space.



Figure 1-2. MIT Active Learning Classroom (source: TEAL)

As a further example, Figure 1-3 shows what a large enrollment active learning classroom might look like; essentially multiplying the number of tables, chairs, projection screens and whiteboards, but still allowing the space for active learning activities to take place.

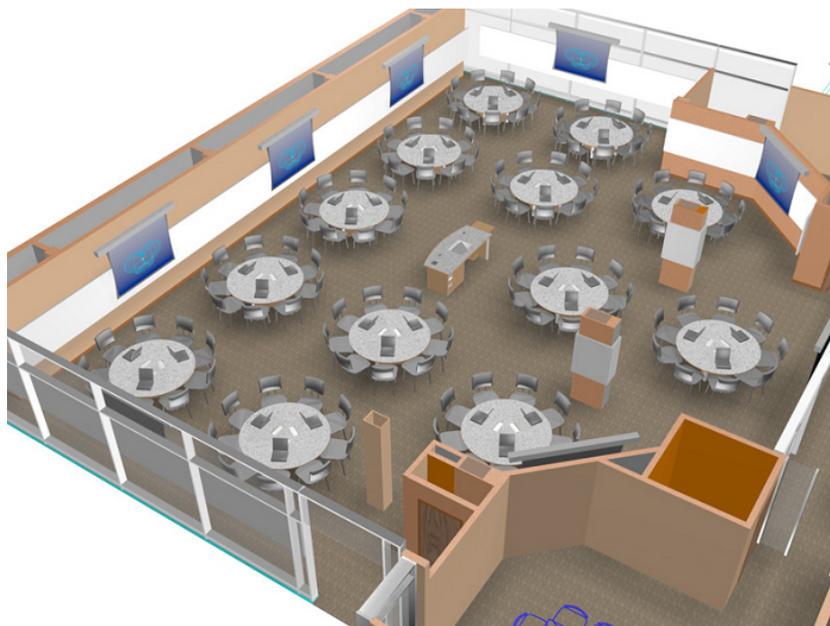


Figure 1-3. Active Learning Classroom Layout for Large Enrollment MIT Source: TEAL

Active learning architectural design today attempts to transform the classroom experience beyond a traditional 'box' environment and actually helps to provide several dimensions of support for learning (Long & Ehrman, 2005). Active learning in the classroom requires a change in how instructors view their role; from a presenter, to a choreographer, designer, or manager of learning experiences (Meyers, 1993). An active learning classroom is not one that is best utilized by traditional lecture methods, but rather one where faculty help contribute to their students growth through more engaged learning activities (Meyers, 1993).

Background

The College of Business at the University of Florida was founded in 1926, with just three faculty members teaching all 22 courses offered at the time (University of Florida, Warrington College of Business Administration Office of Publications, 2012). Not unexpectedly, the last 86 years have resulted in great changes, and the school now offers hundreds of courses, -with both small and large enrollments, as well as wide-range of degrees with on-campus, blended and fully online programs.

Recently, the college received private funding to renovate a traditional classroom to create a teaching environment more conducive to active learning. In 2010, the Director of Teaching Excellence and Assessment, Dr. Tawnya Means, presented a concept to potential donors "to design a classroom using state of the art technology that would help facilitate active learning experiences through interactive and engaging experiences for both local and distant students" (Means, 2011, p.1). The proposal was accepted along with some suggested guidelines for the space, one being that the space should be used to conduct future educational research.

Although a final account of the technologies and tools the College of Business plans to provide in this new classroom were not available at that time of this study, the plans reportedly include an assortment of new technology, ranging from projectors and display walls, interactive whiteboards, document cameras, four seven-foot round tables to facilitate two teams of four at each table, video production capabilities, and collaborative software to facilitate three types of potential team or collaborative models: a remote team, a hybrid team, and an on-campus team (Means, 2011).

Partnering-up with Herman Miller, a furniture company that offers a “Learning Space Research Design Program and Longitudinal Study” (Herman Miller, 2012), has helped to provide a starting place for making active learning design choices related to space and furniture design. Beyond design, the College of Business will also use Herman Miller’s provided evaluation rubrics and assistance to conduct research for two consecutive terms once the room goes live, in the fall 2012 semester. The research goal is to help provide a way to measure the impact of the new space and to yield results that can help the college make adjustments, if necessary. Such research has the ability to not only benefit the college, but the active learning community in understanding the new role these spaces play in supporting effective teaching and learning (Means, 2011).

Months of planning have gone into the design choices for the space and into selecting the appropriate furniture, hardware and software. Although the College of Business’ design team of directors, administrators, and IT managers have had to make some educated guesses about what faculty will want to do in the space, their plans

seem in line with common active learning classroom features today. These plans are discussed in the following section.

While continued research in the new classroom is expected and is a long-term objective, preparing faculty to teach in the new space is going to be an initial challenge. Investing time in developing new teaching strategies will help to ensure that the new space is not just an improvement in space design, but “leads to changes in pedagogy and student learning” (Lippincott, 2009, p. 17). Faculty development will be covered in greater detail in a following section.

Active Learning at the College of Business

As mentioned above, the active learning classroom at College of Business is currently under renovation and will open in the fall of 2012, giving designers, faculty and staff the summer to prepare. Figure 1.4 shows an overhead view of what the space and team tables will look like in Matherly Hall, Room 120 (Means, 2011).

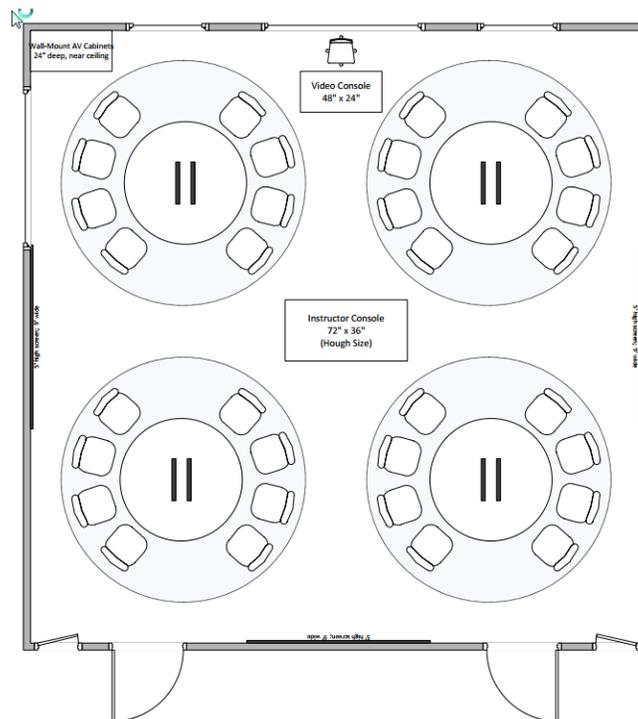


Figure 1-4. Classroom Design (source: Means, 2011)

The round tables and moveable chairs have been selected and are shown in Figures 1-5 and 1-6. This core furniture along with writing surfaces and projection screens, group desktop computers, laptop connections, and software for sharing and collaboration, are all in line with common technology-enabled, flexible learning environments seen on campuses today (Brown & Lippincott, 2003).



Figure 1-5. – Herman Miller Caper Chair source:<http://www.hermanmiller.com/design-resources/images.html?text=Caper%20Chairs>



Figure 1-6. – Bretford SCALE UP Table Purpose of Study source:
<http://bretford.com/products/scale-up/?638>

The summer's short training window is going to be an important time for this project. The faculty list for the room's first semester has been finalized, and the support team has had some initial meetings with the faculty to explain the new possibilities this room will offer, as well as answer any questions. However, there is a limited window of opportunity for designers, faculty, and staff to become acquainted with the technology and any new active learning teaching pedagogies they decide to include in their course design.

As an instructional designer for the College of Business, I am involved with faculty development and course design processes for our department. For this project, I will be working with faculty members to help them prepare to teach in the new active learning environment. Hence, this research will provide resources to identify and evaluate what other universities have implemented in regards to active learning classroom training. The goal is to evaluate what has worked for the research participants and what did not, so that I can propose a plan for this summer's faculty development sessions, as well as for future active learning faculty development. Additionally, my hope is that this collection and analysis of data might also be beneficial to any school, faculty member, or support staff member seeking a better understanding of faculty development for active learning. At the time this research was conducted, there were a handful of other colleges and departments on this campus building active learning spaces, computer labs, and cafés. This research study could potentially help guide those and additional departments in their process for continued development, inspire faculty members to try active learning, or perhaps educate a soon-to-be instructor on techniques for teaching more effectively with active learning strategies.

Research Questions

The following research questions guided my research about other universities' experiences with active learning faculty development and training:

1. How do we best prepare our faculty to teach in an active learning classroom?
 - a) What are other universities doing to prepare their faculty to teach in an active learning classroom?
 - b) What lessons can we learn from them, technologically and pedagogically?

I approached this research from two perspectives – a) I conducted an extensive search of prior research published about active learning faculty development, active learning teaching methodologies and active learning teaching case studies and then b) I conducted an online search for any universities reporting their work with active learning classroom projects or active learning faculty development. I narrowed down the list to seven schools who were implementing active learning classroom projects and/or faculty development sessions related to active learning.

The next chapter details my research based on the literature in this field as it relates to faculty development for active learning, active learning environments and active learning principles. My research design is described in Chapter 3 and the findings of my research and its implications are discussed in Chapters 4 & 5.

CHAPTER 2 LITERATURE REVIEW

This study has been guided by the literature on active learning, active learning spaces, constructivist theories and related trends. Understanding the impact that learning spaces, along with active learning teaching strategies, can have on student learning outcomes is the basis for understanding how to best prepare faculty to teach in active learning classrooms.

What Is Active Learning?

The phrase “active learning” typically refers to any instructional method that engages students in the learning process (Prince, 2004). More importantly they must be engaged in their own learning process with such thinking tasks as analysis, synthesis, and evaluation (Bonwell & Eison, 1991). The active learning umbrella term refers to an array of instructional methods that transfer the responsibility of learning back to the learner. This student-centered model helps learners to see themselves and their peers as sources of knowledge, rather than passive listeners (Hammer & Giordano, 2012). Several other terms such as collaborative learning, problem-based learning, team-based learning, and meaningful learning are also associated with active learning and are reviewed in this section.

Charles Bonwell and James Eison (1991) popularized the concept of active learning in the 90’s by promoting various student-centered approaches. They proposed that traditional lecture methods, where faculty stand at the front of the room and students listen and take notes, is not an active process and that students must do more by reading, writing, and being engaged in the learning process (Bonwell & Eison, 1991). New theories also suggest that the quality of learning depends on the learner’s ability to

steer their own learning orientation, developing inquiry skills and the ability to reflect on and control the process (Niemi, 2002). Additionally, a learner's metacognition, the conscious selection and assessment of strategies in learning, helps to direct these choices individually (Niemi, 2002). Most importantly students need to be actively involved in thinking and problem solving to gain the most long-term benefits from learning experiences (Bonwell & Eison, 1991).

Purdue University's Center for Instructional Excellence offers a useful list summarizing some of the most common characteristics associated with active learning strategies (Bonwell, 2010):

- Students are involved in more than passive listening
- Students are engaged in activities (e.g., reading, discussing, writing)
- There is less emphasis placed on information transmission and greater emphasis placed on developing student skills/knowledge
- There is greater emphasis placed on the exploration of attitudes and values
- Student motivation is increased (especially for adult learners)
- Students can receive immediate feedback from their instructor
- Students are involved in higher order thinking (analysis, synthesis, and evaluation)

As noted earlier, other terms associated with active learning are collaborative learning, cooperative learning, problem-based and team-based learning. The phrase "collaborative learning" has a few varying definitions, but is essentially any learning situation where two or more people learn or attempt to learn something together (Dillenbourg, 1999). Cooperative learning is very similar yet slightly different in that students still work together in pairs or groups but are assessed as individuals (Prince, 2004). This term helps to describe learning in a more social context, and is based on

the premise that “cooperation is more effective than competition among students for producing positive learning outcomes (Prince, 2004, p. 5). The success of this approach relies more heavily on equal learner participation and partnership.

Problem-based learning describes a scenario where a teacher presents a problem at the beginning of a lesson or “class” and uses it in context as motivation for learning. This strategy is very often combined with collaborative and cooperative arrangements. The basis of problem-based learning is rooted in Dewey’s “learning by doing and experiencing” principle (Dewey, 1938; Akinoglu & Tandogan, 2007, p. 72). Problem-based learning enables students to become aware of and determine their problem solving ability and learning needs (Akinoglu & Tandogan, 2007).

Lastly, team-based learning is a collection of these various practices. Larry Michaelson, a professor from Central Missouri, trains faculty members about the importance of team-based learning. His four essential elements for successful team-based learning are:

- Groups: Groups must be properly formed and managed.
- Accountability: Students must be accountable for the quality of their individual and group work.
- Feedback: Student must receive frequent and timely feedback.
- Assignment Design: Group assignments must promote both learning and team development (Michaelson, 2008, p.8).

A strong connection has been made between active learning and constructivist learning theories. Constructivism is a learning theory that focuses more on the roles that our mental schemes play in cognitive growth (Brooks & Brooks, 1999). Essentially the theories outline how student experiences make up their own personal understanding of the world, and how this contributes to their learning, and in this case, how students can

learn from each other. Meaningful learning, another pedagogical term, refers to knowledge that is acquired in a way that allows students to do something with it; integrating new learning with everything else they already know (Michael, 2001). For example, when students are able to apply what they know about a subject to novel situations, we can say they understand and that “meaningful learning” has occurred. This is more likely to happen when meaningful learning is a clearly defined objective for a course and when students believe the teacher values understanding over memorization.

A prime example of meaningful learning is provided by Dr. Joel Michael (2001), a molecular biophysics and physiology professor at the Rush Medical College in Chicago Illinois. He was able to show how active learning methods, along with technology, helped his students to achieve genuine understanding and meaningful learning. Dr. Michael wanted his students to understand the connections and changes occurring with the numbers, not just the absolute values themselves. After struggling for years to achieve the same student learning outcomes in the classroom as in the laboratory, he devised a computer-based problem solving application that encouraged his students to move beyond basic memorization. In the end, the program required students to think more deeply, making predictions about changes that might occur and the relationships between those changes (Michael, 2001). The program also provided immediate evidence that the students were learning. Upon reflection, Dr. Michael concluded that in addition to problem-based computer software and technology, two additional strategies helped his students achieve meaningful learning: 1) providing opportunities peer-to-peer teaching and 2) facilitating student-to-student discussion (Michael, 2001, p.2).

All of these concepts point us in the same direction: Working together, sharing our knowledge and personal experiences with one another, can lead to more rich and valuable learning experiences.

How Active Learning and Active Learning Spaces Affect Student Learning

Literature reveals that active learning methods result in more meaningful learning than traditional methods (McKeachie et al., 1986). Students also report greater satisfaction with an active learning course over the traditional (McCarthy & Anderson, 2000). Advocates of learning space design express that “benefits of teaching and learning practices outweigh the short-term costs by promoting constructivist forms of active learning, encouraging pedagogical innovation, improving conceptual, theoretical and applied forms of learning and increasing overall student engagement” (Brooks, 2010).

One recent study, conducted by the Office of Information Technology (OIT) at the University of Minnesota, indicates that the formal physical environment where students learn has a significant impact on student learning outcomes (Brooks, 2010). In the study, a faculty member taught the same course, Principles of Biological Science (PsTL 1131), in both a traditional lecture hall and in an active learning classroom (ALC). He used the same course materials, assignments and exams for both. These two groups of first-year students (n=unknown), although randomly assigned to a section, were evenly distributed in terms of demographical characteristics. The only difference at the outset was that the group in the traditional course had significantly higher ACT scores. In their report on the study, the researchers explain that higher ACT scores are generally an indicator used to predict higher grades.

The results of the study showed that there were no significant differences in the final grades for the two groups (Brooks, 2010). Therefore, the researchers concluded that the students who took PsTL 1131 in the ALC, who had significantly lower ACT scores, learned at a higher rate than those in the traditional classroom. This study provided the first piece of empirically derived data demonstrating that “space, and space alone can affect learning” (Brooks, 2010, p. 6). The researchers concluded that more research is needed to see what types of activities shape the future relationships of teachers, students and learning spaces (Brooks, 2010).

Another powerful concept sometimes hidden within active learning practices and space design is the formation of community. The concept of community refers to a group of people with a common purpose, shared values, and agreement on goals (Bickford & Wright, 2006). In a learning situation, the presence of community can be a great motivator to its members for achieving exceptional performance. Furthermore, because physical and virtual learning spaces have been shown to play a critical role in enabling or deterring community, it is important to evaluate the role of space and its design as a means to improving student learning and engagement in community (Bickford & Wright, 2006).

Current Trends in Learning Space Design

Brown and Long (2006), in their book *Learning Spaces*, devote a chapter to ‘Trends in Learning Space Design’ in which they describe three current trends to help inform learning space design decisions. Their first principle is “Design Based on Learning Principles,” resulting in intentional support for social and active learning strategies (Brown & Long, 2006, p. 9.1). Despite our being used to a one-size fits all learning environment, striving to design a space that allows for more interaction

between students and their peers, and students and their teachers, is a shift in space design that supports how people actually learn (Brown & Long, 2006).

Second, Brown and Long (2006) assert the need for “An Emphasis on Human-centered Design” (Brown & Long, 2006, p. 9.1). “The trend toward more human-centered design is embodied in the shift from the information commons to a learning commons” (Brown & Long, 2006, p. 4). In the past, providing access to information digitally via computers was generally their top priority due to cost and space restraints. Now that technology has caught up with and in some cases surpassed what universities can offer, the current trend is to design spaces that help facilitate the learning process. Ideally, these environments include space for individual and team work, easy access to technical and instructional support (i.e. faculty offices), whiteboards and monitors for group collaboration, and basic access and technological services. Even the incorporation of food and beverages shows a trend towards more human-centered design considerations (Brown and Long, 2006).

Finally, Brown and Long identify “Devices that Enrich Learning.” Technology is improving and changing at an alarming rate (Brown & Long, 2006, p. 9.1). And at the same time, different technological needs from faculty make choosing such devices for both formal and informal spaces even more complicated. Students are now coming to college with their own laptops, software and other tech devices (such as smart phones, mp3 players, and other mobile devices). This shift in focus allows universities to concentrate less on providing standard technology and instead to focus more on ways to successfully incorporate, explore and encourage the use of such devices and software into teaching and learning practices (Brown and Long, 2006). For example,

Figure 2-1 is an active learning classroom at the University of Minnesota and shows the tables, chairs, and display monitors, along with the instructor station in the center of the room.



Figure 2-1. University of Minnesota, Active Learning Classroom, © 2009 Regents of the University of Minnesota. Photo used with permission.

Investing in high-tech, state of the art spaces is showing more promise and is perhaps the key to getting highest return in the form of increased student learning outcomes (Whiteside et al., 2010). Nonetheless, because these new spaces and technologies function around the lessons faculty choose to teach, providing professional development and seeking faculty input is an important factor contributing to student success in active learning classrooms (Whiteside et al., 2010).

Active Learning in Action

What are different active learning activities? Faust and Paulson (1998) provide a few of the many active learning strategies ranging from those completed as individuals to those done in groups or teams. Their analysis also reflects the amount of effort and time required, from the least to most. Ultimately, faculty must decide which activities are

the right fit for the amount of time they have to invest, along with what strategies make the most sense for their content (Faust & Paulson, 1998).

Exercises for Individual Students

These require less time, and can work well in any type of classroom environment, especially large enrollment classes where rapport and team work might not be feasible (Faust & Paulson, 1998).

- Clarification Pauses – when the instructor simply pauses in lecture, after covering an important point, and then asks if anyone needs clarification
- One-Minute Paper –when the instructor pauses during or at the end of a class, asks a question (such as “what was the main point of today’s class?”) and allows students to write their response in one minute. This is a highly effective exercise for checking student progress.
- Muddy/Clear Point – a variation of the one minute paper, when the faculty asks specifically about what the muddiest or clearest point was from that days lecture.
- Daily/Weekly journal – an effective tool for motivating students to apply course concepts to their daily lives. Although feedback is not instant.
- Reading Quiz – helps to measure student comprehension of reading assignments (Faust & Paulson, 1998).

Discussion (Q &A) Exercises

Traditionally faculty assess student understanding by asking questions during class. This Socratic Method has many drawbacks such as favoring a small number of students, students not listening to their peer’s opinions, and students not listening to the instructor if they have just answered. The following techniques help questioning effectiveness and enable students to “own” the question (Faust & Paulson, 1998):

- Student Summary of Another Student Answer – this encourages students to listen to not just their instructor, but their peers.
- The Fish Bowl – students put questions on index cards into a bowl; instructor reads some and the class answers them.

- Quiz/Test Questions – the instructor encourages students to create assessment questions, allowing them to think more deeply and critically about the material.

Share/Pair

Pairing students together provides some of the same benefits as group work: greater understanding, satisfaction, and increased retention (Faust & Paulson, 1998).

- Discussion – student's pair off and work together to respond to a question.
- Note Sharing – helps to develop better note taking skills while helping each other to fill in any gaps.

Cooperative-Learning Strategies

These are activities for groups of three to five students. Whether the groups are a short term or long-term arrangement will depend on the activity, amount of time, and learning objectives (Faust & Paulson, 1998).

- Work at the blackboard – groups solve a problem together at the blackboard or whiteboard.
- Concept Mapping – students work together to establish connections between ideas.
- Role Playing - students act out situations to gain a better understanding.
- Debates – helps with mastery of content as well as argumentation skills.
- Games – can take many forms, but offer a great opportunity to review material before moving on to another topic (Faust & Paulson, 1998).

Each of the above activities use one or more of what are often called the 'basic elements of active learning.' Talking and listening, writing, reading and reflecting are the four actions that can be combined to create a variety of more complex learning activities (Meyer, 1993). These actions are very simple in nature, but when used effectively, can add great value to any classroom activity (Faust & Paulson, 1998).

Faculty Investment and Teaching Success

Ideally, technology requirements and student needs are taken into consideration during the design process for any course and learning environment, but in an active learning classroom, this becomes imperative. Furthermore, from the perspective of an instructional designer, it is essential to understand a faculty member's pedagogical style, preferences and potential use of technology in assisting the faculty member with training, development, and course design (Lippincott, 2009, p.18). The College of Business has taken a baseline of inputs from current faculty into consideration when designing their active learning classroom.

Nonetheless, often times there can be a disconnection between what is perceived as valuable to designers and administrators and what a faculty member actually intends to do in a learning space. Even though renovations and new construction of active learning environments may improve overall satisfaction with the facilities, there is no guarantee that these investments will "lead to changes in pedagogy or student learning" (Lippincott, 2009, p.17). It is also conceivable that while some faculty cannot envision a new way of teaching yet, the new environment might spark a gradual change in their teaching pedagogy (Lippincott, 2009). Faculty need to understand the new dynamic in order to help facilitate such changes in teaching pedagogy.

It is the role of the instructional designer to help the learner, in this case the faculty members, make sense of the new information. Lippincott (2009) points out that the goal of faculty development in this case should not just focus on teaching a technology, but rather strive "to understand what the faculty member is trying to achieve and then to suggest innovative strategies for reaching those learning objectives" (Lippincott, 2009, p. 20). A professor's motivation and interests also play an important role in designing a

curriculum for an ALC, which can change drastically from individual to individual. For these reasons, again, faculty member input in the design process is imperative (Lippincott, 2009).

Faculty Development for Active Learning

Niemi notes: “in most cases, teachers are still steering and guiding the learning process, a situation which does not invite students to use or develop their cognitive or motivational self-regulatory skills” (2002, p. 764). According to qualitative data found in a study released in *Teaching and Teacher Education*, active learning effectiveness has a clear connection with the teacher’s professional development (Niemi, 2002).

“Teachers and teaching education are considered key factors in promoting active learning” (Niemi, 2002, p. 763), but what can we do to prepare our faculty to teach in these new spaces? After all, most teach how they were taught, and this can be a difficult cycle to break. One strategy might be to start by looking at what barriers or fears faculty have about this new style of teaching.

Joel Michael (2007) in *College Teaching* describes barriers identified by faculty interviewed at Niagara University and surrounding colleges. The most common concern among the participants was that “active learning in the classroom takes too much preparation time” (Michael, 2007, p. 45). Another concern was that faculty members might have less control of the environment, or that they might not be able to cover all of the material. Once discussed further, the group revealed that these perceived barriers were more a result of a lack of experience than a reality (Michael, 2007).

While it is true that changing the way one teaches can initially take more time, active learning does not necessarily have to take more time than any other teaching method (Michael, 2007). The second concern about control seems valid in that active

learning spaces are not linear. Any given question could create a number of others, resulting in situations where the teacher might not know the answer. Through development activities faculty must be shown that these situations might seem uncomfortable at first, but they do not mean control has been lost, just dispensed differently. The faculty must come to understand that the key to managing an active learning environment is setting expectations. Students should know where they are starting, have an understanding of where the instructor envisions that they will be at the end of the course, and have some concept of a point or two they will encounter along the way (Michael, 2007).

Michael's (2007) article addressed a very important question: What needs to be done to help assist faculty in implementing more active learning techniques? One possible answer could be faculty development via workshops, seminars, and on-campus sessions. These are golden opportunities for faculty members to participate in and experience active learning techniques in action. Once these seeds have been planted, faculty need to discuss and share their success with their peers, as all too often teaching is kept a 'private affair', resulting in little change in teaching methods or superfluous reinventing of the wheel (Michael, 2007). The positive results of well-planned active learning workshops make a case for "careful planning, modest goals, and building a support network to sustain classroom change" (Michael, 2007, p. 46).

Seeler et al. (1994) confirm these strategies and point out that faculty preparation for in the shift to active teaching methods is important, stating, "the faculty member must take the time to examine the principles and concepts upon which active learning techniques are based, and reflect upon his or her role as a teacher" (p. 1). With the help

of an instructional designer or teaching support center, this shift in teaching strategies is within reach (Seeler et al, 1994). Preparation will help to ensure the proper learning objectives; content presentation, questions, and in-class timing are all taken into account well before a course begins.

Summary and Gaps in Research

The literature available on active learning teaching methods, preparation, barriers, and current trends all reveal that there are more areas to explore. Research related to faculty development for active learning was sparse and lacking. There are a handful of articles that touch on the importance of faculty development for active learning, but few had research stating what development practices work best.

Constructivist learning theory and literature on collaborative and cooperative learning all reiterate how valuable active learning, and active learning classrooms, can be to student learning (Land et al., 2012; Brooks & Brooks, 1999; Prince, 2004; and Dillenbourg, 1999). However, further research is required to make clear when and how active learning strategies should be integrated into faculty practice and initiated in our own classrooms. The intent of this research is to present a baseline of information on experiences from those already in the process of developing or implementing faculty development for active learning, and provide a call for further research that can help others make the choices best suited to their departments and faculty members.

CHAPTER 3 METHODS

Semi-structured, qualitative interviews with universities that had implemented active learning were used to help answer the following research questions:

1. How do we best prepare our faculty to teach in an active learning classroom?
 - a) What are other universities doing to prepare their faculty to teach in an active learning classroom?
 - b) What lessons can we learn from them, technologically and pedagogically?

The interviews, although loosely-structured, consisted of ten open-ended questions, along with follow-up questions used when appropriate to clarify understanding. They were semi-structured in the sense that university participants were asked the same questions. The purposes of choosing an interview to gather the data was to encourage a natural conversation with the participants, so they could feel free to express what their experiences have been with active learning classrooms and faculty development. Thus the interviews were structured to capture data related to the major questions: What worked for the participants? What did not work? How did their faculty learn best? Although the answers to these questions were explored through review of the university websites and other online resources, the promotional and/or limited nature of these information sources reinforced the need for interviews to gather the level of in-depth, direct data required to the research questions.

The Participants

The participants were selected after conducting an online search for universities in the United States with active learning classrooms and/or faculty development programs which promoted active learning teaching strategies. The online search for schools using the terms “faculty development for active learning,” “active learning universities,” and

“active learning in higher education” resulted in a list of publications from various schools along with teaching centers and university websites. After a process of elimination, seven schools were identified and I then sent out an email (Appendix A) to a university participant at each of the seven schools explaining my research and inviting them to participate in an interview to discuss their experiences with active learning and faculty development.

Of the seven schools contacted, six responded and were willing to discuss their experiences with me. Once each participant agreed, they were contacted again via email, with an attached informed consent (Appendix B) and the interview questions (Appendix C). With their signed consent forms returned, the interview day and time was confirmed. For the purposes of this study, the participants and their university names and locations are kept anonymous. Participants are identified only as University A, B, C, D, E, or F. The interview’s all range in length from 16 to 60 minutes.

For the purposes of ‘operationalizing the variable’ in this study, faculty members are educators who work at a university or college, that develop a curriculum, learning objectives, and provide guidance to their students on topics related to those in their field of mastery. Preparation is what they do prior to teaching a course, either online, face-to-face, or in a blended environment. Finally, an active learning environment is any learning space, in this case a classroom, where collaboration, open communication, and learning take place.

Data Collection

Each interview was conducting using a landline telephone, on speakerphone. The interviews were conducted in a private office at the College of Business on UF Campus. To help ensure a better experience for the participants and higher quality recording, I

kept a warning sign taped to my office door to help prevent any unexpected interruptions. Because the participating universities were from various time zones, the interview times were scheduled during their normal working business hours.

To facilitate an exploratory conversation with each participant, ten open-ended interview questions were used (Appendix C). The interviews were recorded using an iPad application called, "sound note." After the completion of each interview, the sound note recording (.mv4) was sent to my secure email inbox. Then, the audio recordings of the interviews were played back and transcribed. Each interview was listened to a second time to check for any errors. Finally, the transcriptions were member-checked, which is the process of sending each participant a text copy via email and asking them to review the content for accuracy (Shenton, 2004). In addition to the audio recordings and transcript data, notes were taken to record any initial thoughts during the interview.

Data Analysis

The data collected from each interview was analyzed using narrative analysis. "Narratives are useful data because individuals often make sense of the world and their place in it through narrative form" (Feldman, et al 2004, p.2). Narrative analysis also allows researchers to make stories more available and allows the formation of "structural links among concepts" (Feldman, et al 2004, p. 3).

During the analysis, the interview transcripts were reviewed and, when necessary, the original audio transcripts were listened to again for clarification. As I read through each interview, I highlighted key points and strong quotes that I felt directly answered particular questions in a straightforward way. After an initial review, I re-read the data looking for commonalities amongst the participants experiences in addition to any outlying experiences. Then, where applicable, I created a chart using Microsoft Excel to

help me organize each main point from each participant to each question. This helped me to identify similarities and differences amongst the participant data, including common themes in experiences. My findings were then reported in a narrative format, using quotes and extractions from the data. Lastly, the summary of the findings, along with my final recommendations are presented in Chapter 4 & 5.

Subjectivity Statement

I have worked in a teaching excellence center providing various types of instructional support for more than four years; starting in 2008, as our sole online instructional support specialist and eventually promoted to instructional designer. Over time, I have gained valuable experience working with both faculty and student development. I have conducted previous training sessions which included hardware training, software training, and pedagogical training. As an instructional designer, my primary tasks today relate to course design and online faculty support. However, over the past four years, I have worked closely with our faculty in training them on how to use our course management system, which has recently changed from Blackboard Vista to an open-sourced course management system (CMS) known as Sakai. I also train faculty to use other online teaching tools, including Elluminate, Adobe Connect, Camtasia, and iTunes.

Because of my experience with training, and working with faculty, I understand the target audience for the professional development has varying skill sets and levels of willingness to learn new tools and processes. Some faculty members are always eager and excited to hear a new technology or process is available for them to use as a teaching tool, while others are upset at any change that might add to their already busy

workload. These experiences have all shaped how I see faculty development. I understand that not all faculty members are comfortable with change.

Additionally, my undergraduate degrees in anthropology and public relations have helped shape my understanding of the importance of communication, genuine rapport, and stewardship.

Validity

The qualitative research conducted in this study seeks to identify and explore similar situations amongst participants, in this case, six different universities. A sound qualitative study is one of good quality and one that should be able to help explain an otherwise confusing situation (Golafshani, 2003). By explaining my processes, methods for data collection and how I analyze the data, my hope is that I have achieved a credible, dependable, and confirmable study, one that might be 'transferable' to others in a similar situation (Shenton, 2004). Additionally, by explaining my previous and personal experiences, and therefore revealing any predispositions, I hope to have achieved trustworthiness. The results described here are based on the experiences of the participants. In an ideal situation, I would have liked to have the data coded by another researcher simultaneously, and to have calculated inter-rater reliability (Armstrong et al., 1997) for the qualitative codes, but scarcity of time prevented such a step in this project.

CHAPTER 4 RESULTS

Introduction

Active learning as a concept is becoming increasingly popular in higher education. Although this topic is not new, it is a dramatic shift from traditional teaching in university lecture halls. As more schools promote the benefits of this type of teaching and learning, and as more classrooms are built based on active learning design principles, faculty too will need support in learning how to best utilize the space and new teaching strategies (Brown & Lippincott, 2003).

Three overarching questions have shaped this research on faculty development for active learning classrooms:

1. How do we best prepare our faculty to teach in an active learning classroom?
 - a) What are other universities doing to prepare their faculty to teach in an active learning classroom?
 - b) What lessons can we learn from them, technologically and pedagogically?

To help answer these research questions, ten open-ended questions were addressed during an interview with six participating universities. The interview data was analyzed and the results are organized by research question, and then the findings are explained, most commonly by what similarities I recognized, but also in terms of any differences, and important lessons.

The goal of this research is to explore what other universities have experienced with preparing instructors to teach in an active learning classroom, or in any classroom, using active learning teaching strategies. Each program seemed to prefer a different word for development, some universities made it clear that they did not consider their 'program' a type of training but more as simply preparing to teach (University D). I

believe when the connotation of these words is removed, their meanings are very much the same. I will use both in this paper to describe the process of teacher development. Each participant shared only their experiences with faculty development for active learning.

Participant Interview Data Findings

The participating universities and their stories will be referred to below as University A through University F, to protect their anonymity. Additionally, I will not refer to any of the specific faculty training program names (initiatives, fellowships, workshops, etc.), as these titles could inadvertently reveal location and university. Because the titles of the programs are not a vital component in understanding the experiences, I will use the term “program” to refer to all of the university training platforms.

Below is an overview of the program characteristics at each participating university. The data from the interviews, as well as information accessed from their websites, helped in providing a clearer picture of their active learning development opportunities and programs.

University A

- Formal program began in the Spring of 2011
- Cohort of multi-disciplinary faculty members invited. Not required
- Administratively initiated to develop best practices for active learning
- Provides a variety of workshops

University B

- No structured or formal program
- Provide one-on-one consultation from faculty who specialize in active learning

- Provide current research and information on active learning classroom benefits and methods
- Encourage faculty interested in active learning to sit in on an active learning class

University C

- Program began in 2011
- Faculty must apply, if accepted receive funding to redesign their course
- Any faculty teaching traditional, blended or fully online course can apply
- Priority given to those teaching foundational, high-enrollment courses with low competency rates
- Use NCAT methods for course design and assessment
- Must participate in faculty learning communities for support and education
- Also use one-on-one consultations
- Faculty get support from instructional, technology, and assessment specialists
- Faculty get first priority to their active learning classrooms

University D

- Program revolves around an active learning classroom
- Faculty must apply in order to teach in this space (only full-time teaching faculty)
- Applications are accepted each fall and spring for the following year
- During this year, work with their teaching and learning center to redesign a course
- Require that any course taught in their ALC is one that cannot be taught anywhere else on campus

University E

- Does not offer a specific program for active learning, but rather a variety of programs for faculty development
- Their teaching and learning center supports faculty at various campus locations
- Program types include workshops, individual and department/program consultations

- Faculty are not required to participate in any of their development opportunities
- Provides information about active learning teaching for small and large enrollment courses, in traditional classrooms

University F

- Original development-type programs began in 2005, but focused more on service learning
- Since then, their new program focuses on other active learning pedagogies
- Faculty (including tenure, tenure-track, and clinical faculty) must apply and if accepted, participate in the multi-day training program and follow-up workshops the following year
- Their teaching and learning center provides support needed to help redesign a course and course materials
- Faculty participate in monthly community meetings
- With few exceptions, only those faculty members who complete the program are allowed to teach in their ALCs.

After analyzing the interview data, I was able to identify two common themes emerging from the data: multiple development opportunities and support for faculty members. To help provide more structure to this content, I will explain each of the interview questions that correlate with that theme, and overarching research question. The hierarchy is as follows: research question (RQ) (or sub-question), theme (T), and then the associated interview question, which have been shortened here for concision (Q1-Q10).

Data Explained

RQ1: What are Other Universities Doing to Prepare their Faculty to Teach in an Active Learning Classroom?

T1: Multiple Development Opportunities for Faculty

Q1: Do you have a formal faculty development program?

Five of six schools interviewed had a faculty development program for active learning, or offered a variety of programs ranging from in-class observation of active learning and basic information sessions, to more complex programs requiring application and acceptance.

I think the key is different approaches..... I would recommend [that you] take a wide approach from very informal and low impact in terms of faculty commitment to some that are much more involved and try to leverage of faculty as much as you can. – University A, p. 3

Q2: What is covered during these sessions?

Although each university offered some type of “program” or process to help faculty with active learning, each school had a different purpose and goal, and therefore covered somewhat different topics. University A’s program was an outlier in that it began by administrative request, and those faculty members included in the cohort were already proficient at using some active learning teaching strategies in their classrooms. The group’s mission was more to develop “best practices” while at the same time furthering their own understanding and practice of active learning teaching pedagogies.

It wasn’t like we needed to educate them a lot in terms of what active learning is and how to do these kinds of things. I mean, they were already leaders. So the idea was that we were going to, as a group, figure out some best practices for these spaces. First of all, what can they use to improve their practice, but what can we learn from them and learn as a group that can then act to support other people who are new to this? (University A, p. 3).

Their topics included how to use cooperative quizzing, noise in the rooms, student distraction, lack of a clear focal point for the instructor, and how to deal with these issues. Each school placed more emphasis on teaching pedagogies and course development for active learning, than on technology training, which most felt was a less complicated component to teach faculty members. “The bulk of the work, the

development work, preparing to teach in that space is course design” (University D, p.2).

“The total time of training for the technology and the space is probably an hour or two in three days. And the rest of it is around pedagogy” (University F, p. 1).

University C’s program focused on assisting each faculty member with redesigning a course for more active teaching. Once a member of the program, the group met each week for one hour to discuss (for the first 15 minutes) a variety of topics ranging from good course design strategies and learning outcomes to blooms taxonomy, followed by 45-minutes of peer discussion focused around that week’s successes and failures experienced while teaching in their active learning classrooms. Additionally, faculty members received one-on-one training and guidance specific to their course design and learning outcome needs.

University D’s faculty members also received one-on-one guidance with redesigning a course for the university’s active learning classroom. University E offered not one, but a variety of programs directed toward all faculty on campus, that all touch on active learning on some level: one-one-one individual, program and department level consulting as well as workshops and seminars.

The one school, which did not offer a formal faculty program, University B, did have a process for helping the limited faculty who were interested in applying active learning teaching methods in their active learning classrooms. Those faculty members at University B would get one-on-one guidance from another faculty member who was already experienced with active learning teaching methodologies, but no structured process or program existed at the time of the interview. However, University B offered a

formal active learning training session for teaching assistants, wherein they utilized role-play to learn about collaborative learning and group work.

Q3: How far in advance do faculty members know if they will be teaching in an active learning classroom? Do you have an evaluation process to assess readiness prior to teaching?

During the interview process, it became clearer to me what I was trying to achieve with this question: an understanding of the factors, if any, that determine how much preparation time faculty have prior to teaching in an active learning environment. More specifically, two sub-questions were vital to my understanding: Were there any special requirements faculty needed to fulfill? How was one placed or assigned to a room? Through conversation, these sub-questions became clearer.

Also, I have grouped in responses to question 9, as most participants answered these two (Q3 and Q9) together.

Q9: After a course is complete, are faculty members required to continue with training in any way?

Although only one of the six universities required continued training in order to teach in an active learning classroom again, three of the six schools required some training to teach initially in these spaces. Scheduling and room request processes varied at each school, but the common responses were a) faculty members requested a room, or b) they had to complete training. Very rarely were they simply placed into an active learning classroom. Other factors such as semester, course type, and low retention rates also played a role in these decisions for some schools and departments.

T2: Support for Faculty Members

Another theme that emerged from common responses was that of supportive staff or team members. This theme emerged from one of the interview questions about instructional designers and their level of involvement.

Q4: If you have instructional designers, how much involvement do they have in course planning for active learning?

While some of the universities did not even have instructional designers, all schools commented on their importance and offered support on some instructional design level to those who requested it, whether from a centrally-supported office, or in their own department. Table 4-1 displays the type of ID support offered at each university.

Table 4-1. Support

Instructional Design Support for Faculty Members	
University A	Central-Support
University B	Department Level Support
University C	Department Level Support
University D	Department Level Support
University E	Central-Support
University F	No ID's On Campus

The level of instructional design involvement was ultimately up to those faculty members at each school. “Yes, that support {instructional design} exists somewhere. It’s either central or it’s specific to the college. Whether or not the faculty [members] know about it or use it is another matter” (University A, p.7). I will discuss the issue of resource awareness more in chapter 5.

They {the faculty members} work one-on-one with an instructional designer who is dedicated to their class for the entire semester leading up to teaching in the space and then while they are teaching in that space that instructional designer – sort of their point person for – like if they need some technology support along the way, they can certainly help and get that,

that's not primarily what their role is, but often having the instructional designer ... on standby during the class meeting time is very helpful. Because if something doesn't go according to plan, then they can hook up with the instructional designer and say, 'you know, take a break in the course' and say, 'So that thing is not working, so, how do we ...re-think the instructional goal for this particular piece and go from there?' It hasn't happened very often, but it is very useful to have them around (University D, p.1)

In addition to the instructional design differences, the technical support demand was also different at each school. Universities A, B, C, D, and F all had classrooms specifically designed for active learning teaching methods, however, the training or support needs of faculty members varied at each school. Meaning some schools placed a higher level of importance on promotion and general awareness of active learning teaching strategies than technology and pedagogy training, whereas other universities were more concerned with addressing the learning activities and helping faculty to implement these in their course.

The participating schools which felt the high demand from interested faculty generally focused more on technology and pedagogy training than on reaching out to promote for new 'program participants.'

Another aspect of support that emerged from each interview included providing information or resources. Each university had a website which provided additional information about their program and/or active learning. The other methods for sharing active learning information included newsletters, flyers, blogs, community wiki's, and open-call emails to their faculty members.

RQa: What Lessons can We Learn from Them, Technologically and Pedagogically?

Although the two new themes discussed above could technically fit under 'support for faculty members,' they seem to hold too much weight to not mention separately. The

third theme was a common statement throughout the interviews that pedagogies are not only the starting place for quality teaching and course design, but they take longer to work on than technology training. The fourth theme, also a type of support, covered evaluations, as well as peer-support, or the presence of community.

T3: Technology is Important, but Pedagogy is More Important.

Q5: What types of technologies are available for teaching in your active learning classroom?

The active learning classroom scenario at each university was slightly different, in that some had one specific classroom, or multiple rooms, around which their program revolved, or their program was geared towards all faculty teaching in any space on campus. “The most important technology in the rooms are the tables” (University B, p. 3).

Technology which was a word long before computers came along, {and are} the designed solution to a particular problem and that’s what the tables are. There was a lot of researching {conducted} in figuring out what shape to make them and how big to make them. And... their purpose is to facilitate interactions between the students and with faculty members. So the tables are the most critical part. (University B, p. 3).

Overall, the room and its technologies were second priority to the active learning teaching pedagogies. Table 4.2 is a compiled list of the technologies, software, and teaching pedagogies mentioned during the interviews. The process of technology selection ranged from those selected by a centrally-supported office, to those selected by a committee using literature and the SCALE-Up methods in its decision making.

Table 4-2. Tools for Active Learning

Technology	Tools and Methods Used by Participants	
	Software	Teaching Pedagogies
Round Tables	Echo 360	Collaborative Learning
Moveable Chairs	Integrity	Team-based learning
Projection Walls	Moodle	Cooperative Learning
Flat Panel Screens	Angel	Flipped-Class
Movable Whiteboards	Voice Thread	Inquiry/Problem-based Learning
Whiteboards	Face Time	Assessment Techniques
Huddle Boards	Skype	Cooperative Quizzing
iPads		
Clickers		
HD Camera		
Tablet PC		
PICO Projectors		
Video Conferencing		
Video Wall		

The above list of varied technologies, software and teaching pedagogies are important to note, as most universities offered some, if not all of the same types of resources for teaching and learning. I chose to organize them by tool type rather than by university, to see the collective groupings of tools commonly available for active learning teaching. The most common active learning tools and technologies were the tables, chairs, whiteboards, and projection screens, all of which helped to create a flexible and collaborative learning environment.

Q6: Have you encountered any challenging experiences working with technology or faculty development for active learning?

Each university expressed common obstacles related to technology or faculty development.

Summary of Participant Challenges:

- Faculty awareness of active learning classroom differences
- Ensuring technology is invisible and does not interfere with teaching and learning
- Developing a program that met the various needs and experiences of faculty
- Technology malfunction
- Support knowledge to help address faculty concerns and barriers
- Faculty willingness

University A described their greater challenge of helping faculty to teach effectively in an active learning classroom. “How can we make people aware of the rules of the game change in these spaces?”

The really difficult part is making faculty aware that there is a difference and that the room really does make a difference. First of all, it’s trying to make people aware of that and convince them that it’s important and then trying to figure out a ways in which you can support smaller sequential changes to what they’re doing. And trying to leverage faculty to help with this,...
(University A, p.10).

University B shared their challenge with identifying technologies that were taking time away from teaching. This participant stopped using a tablet PC after realizing they were writing too much in class, and spending less time discussing and collaborating with students. Additionally, University B shared their challenge of faculty development and knowing what amount of time to spend on certain topics. “I spent too much time talking about all of the underpinnings as to why this works.” Their faculty members were more interested in the tangible tools needed to create lessons for active learning classrooms.

University C had this to say about their challenge with faculty development. “One of the most challenging experiences is that different faculty [members] come in to [our] program with different attitudes and experiences with technology and with active learning, so we have challenges in keeping them all happy and on target.” University

D's challenges were technology related, specifically their digital whiteboard was not allowing for writing in a natural way, and required faculty members to press harder than they naturally wrote. Also, their wireless projection system was a challenge.

University E works with an array of faculty members from across campus and explained one of their greatest challenges with faculty buy-in. They said, "We hear a lot from faculty, who say 'I have too much material I have to cover to allow for active learning'" (p. 8). For them, the challenge was learning how to deal with that question, and finding the best ways to answer it when speaking with faculty members. "Active learning doesn't necessarily have to take more time or effort. We just try to get them to take little steps, and many of them are willing to do that, and some just aren't" (University E, p.9).

T4: Evaluation and Community

Q7: Do you have an evaluation process in place to evaluate teaching and learning in active learning classrooms?

Table 4-3. – Evaluations for Active Teaching and Learning

University	Evaluation Process
University A	Student grades, Student Focus Groups, & Student/Faculty interviews
University B	Reformed Teaching Observation Protocol
University C	Evaluation Team: Student Learning, Retention Rates, Satisfaction, Teacher Reflection, and Changes in Teaching Methods
University D	Herman Miller Pre and Post Survey's
University E	In-Class Observations, Mid-Semester Feedback, Student Interviews
University F	Student and Faculty Perceptions

Table 4-3, shows the types of active learning evaluations processes offered at each university. When asked to share what their programs were doing to evaluate either the room or the teaching, University A pointed out that they have a separate office for

conducting research-based evaluations. This group conducts research based on student grades, student focus groups, and student and faculty interviews. University B uses Reformed Teaching Observation Protocol (RTOP) to assess the changes in their classrooms.

University C also has an evaluation team that looks at student learning, the impact on student retention rates, student satisfaction, teacher reflection, and changes in teaching methods (evaluating the differences between what they used to do and what they are doing now). University D is also working with Herman Miller, much like the College of Business, and so they have added some questions to the Herman Miller pre and post evaluation instruments to assess the room and certain teaching methodologies. However, they do not evaluate teaching in the active learning classroom.

We in the teaching center do not evaluate teaching. And we're very committed to that stance. .. We observe teaching, we give formative feedback on teaching, we help faculty think about how effective their teaching is. But we don't evaluate (University D, p. 10).

University E often conducts in-class observations in addition to mid-semester feedback and “small group instructional diagnoses” also known as student interviews, wherein they talk privately with groups of students and ask questions such as: “What helps you learn in this class?” or “What could improve your learning in this class?” First in small groups, and then as a whole class, they discuss the issues brought-up and take those themes back to the instructor to see how things can improve, if needed.

University F's group of support staff who work closely with their active learning faculty shared their process for evaluating student and faculty perceptions. However, as

a campus, they do not evaluate their teaching any differently than they do for other faculty (end of term evaluations).

We observed what happens in the rooms (faculty and students) and interviewed both students and faculty about their perceptions of what happens and its impact on student learning and faculty professional development (University F).

Q8: What efforts have you made to get faculty involved in some type of community?

Literature tells us about the importance of a community or network for supporting faculty, for active teaching, but also for teaching in general (Michael, 2007). The eighth interview question asked each participant if they had any type of community in place to help support their faculty with active learning. While the participants in this study were a part of a team that support faculty members with active learning in some manner, two of the six universities also had faculty learning communities (FLC) in place. The other four universities note some type of relationships that had formed naturally from being either in a department or in a cohort of peers, but did not have a structured community in place at that time. All universities understood and expressed the importance of such a group.

People come together because they perceive a shared need or there's a problem they want to solve... And, if they feel it strongly enough, the community will evolve. So part of the success of these communities of practice or faculty learning communities is making sure you choose the right people who are going to actually come together in that communal way. So, that's why I say, make sure you choose wisely (University A, p. 15).

While each school has their own set of experiences with active learning, faculty development, training, and technology, they all have some aspects in common with one another. They all have staff members who are knowledgeable about active learning teaching methods, resources for those needing technology training, and a plan for helping those faculty who are interested in this growing form of teaching.

RQb: How do we Best Prepare our Faculty to Teach in an Active Learning Classroom?

This is the larger question that guided my research and that served as the starting point for my study. Although the above sections contributed to answering this question, I was also interested in recommendations or suggestions that the other universities might have, based on their experiences with active learning. My final interview question asked each university to consider any school just starting a program for faculty development in active learning and make some recommendations based on their experiences. For any novice school entering into this path, these lists of lessons learned and suggestions for preparing faculty members are invaluable. Further, the relative scarcity of literature on faculty development for active learning, the opportunity to learn from other schools that have been promoting and teaching faculty members to use active learning teaching strategies, is important to the broader the wider field of research in higher education.

Below are the compiled suggestions from all participants listed in no particular order. The recommendations are taken from answers to my final interview question, as well as from relevant points throughout each conversation.

Q10: If you could recommend at least one thing to another university just starting out with active learning classrooms and faculty development for such a space, what would it be?

- Use a variety of strategies to reach as many people as possible (workshops, seminars, conferences, one-on-one, etc.)
- Encourage faculty who are even slightly interested to visit an active learning class in session.
- Then show them what the room can do by having those faculty participate as students.

- Require that faculty attend a workshop on active learning, one that is formatted around a course instructional design model.
- Talk to faculty about what they wish they could do in their own (traditional) class, and then use this information to help them understand whether active learning could be right for them.
- Make use of faculty member enthusiasm for active learning, as ambassadors, for spreading the word and getting others interested.
- Bring in outside experts to present active learning strategies to faculty and deans.
- Create videos of teaching in your active learning classroom to share with other faculty on campus who might be interested.
- Having support for faculty development is important, so it is important to have a committee.
- Getting faculty together, even across discipline, to share their experiences with one another is most helpful.

By exploring each participant's experiences with active learning, faculty development and technology training, I was able to gather important information needed to synthesize in-depth answers to my research questions. The commonalities and differences further help to shape my understanding about what other universities are doing to help prepare their faculty to teach in an active learning classroom. The lessons learned here are a guide for those interested in faculty preparation for active learning.

CHAPTER 5 DISCUSSION

The purpose of this study was to reveal current research in this field and to explore the experiences of the participating universities that have implemented active learning faculty development. The following research questions were used to guide this study:

1. How do we best prepare our faculty to teach in an active learning classroom?
 - a) What are other universities doing to prepare their faculty to teach in an active learning classroom?
 - b) What lessons can we learn from them, technologically and pedagogically?

This study used semi-structured interviews to help explore the current state of faculty development for active learning classroom teaching. These approaches helped to reveal a variety of commonalities and differences among the participating schools which aided in answering the guiding research questions.

What are other universities doing to help prepare their faculty (**RQ1**)? In general, they are providing a variety of learning opportunities and programs. Within these programs, pedagogical methods for active learning held a higher priority over technological training. The programs offered at each university varied. Some were optional and low impact. The topics addressed in these types of sessions included information and background knowledge on active learning principles, research, and benefits mostly geared towards general faculty. Other programs described were required for active learning classroom access. These higher impact sessions, such as workshops and colloquiums, were geared towards those faculty members already 'on board' with active learning benefits. Each school provided faculty member support in some manner or another to assist all types of faculty in learning these new teaching

methods and technologies. Centrally-supported instructional design and technology training or department-level support, were offered at each university.

What lessons can we learn technologically and pedagogically **(RQa)**? The participant experiences revealed that pedagogical training can often take longer and should hold higher priority over technology and software training. Meyer (1993) provides four essential elements for faculty to consider when designing their course and teaching pedagogies:

1. Clarify your course objectives and content
2. Create a positive classroom tone
3. Cope with the teaching space
4. Know more about your students (Meyer, 1993, p. 33)

Taking the time to plan one's active learning teaching pedagogies can be a challenge for those new to this type of instruction and often times faculty are not sure how they can give up any content (Meyer, 1993). University C shared their experience in having faculty practice a 'phased-in' approach to active learning. Meaning their faculty did not have to convert their course entirely to incorporate active learning teaching practices, but chose to use these methods strategically when possible. Faculty can choose to incorporate active learning activities, in any environment, gradually and at will (Faust & Paulson, 1998).

Challenges included teacher buy-in, technology-related issues such as tool malfunction, and core teaching misunderstandings. Participants in this study often encounter reasons for why active learning will not work for a certain instructor, often referred to in the literature as 'faculty barriers' (Michael, 2007). These statements

ranged from too much material to cover, or not enough time to plan or teach in groups. Learning to prepare for and address such hesitations was important to their program's successes.

And lastly, what are some ways in which we can help prepare faculty to teach in an active learning classroom (**RQb**)? This study revealed that preparedness begins with awareness and leads to application. The spectrum of needs is an important factor to consider as a support member myself. Awareness means getting the word out on campus about active learning opportunities, classrooms and teaching methods. Then providing ample support for faculty members to learn the tangible 'nuts and bolts' of any active learning activity they want to incorporate into their teaching, whether in an active learning classroom or not.

Recommendations

This recommendation plan serves as a resource for supplying various needs for any school or program interested in adopting active learning and faculty development. With active learning teaching pedagogies as our guide, we should prepare for the variances in faculty awareness, knowledge, and application experiences. To oversimplify, my recommendation is to provide an information repository, various types of workshops and seminars, and one-on-one support. Faculty members need professional development opportunities that supply them with the knowledge and skills they need to meet a higher standard of teaching practice (McGowan & Graham, 2009).

All areas can be considered faculty development, while still fulfilling the varying requirements needed by each faculty member. Table 5-1 shows the recommended development opportunities and their level of impact, low impact meaning less time requirement, but also less of a direct impact on teaching. Whereas, the high impact

opportunities require more commitment of time from faculty members, but also more commitment from those providing support. In turn, these could have a higher impact on teaching development.

Table 5-1. Faculty Development Opportunities

Program Levels	Training Activity
Low Impact	Awareness and Knowledge
Medium Impact	Workshops and Seminars
High Impact	One-on-One Support

Awareness and Knowledge

A low, impact starting place for active learning awareness could be a repository of information that is public and easily accessible (e.g., a website). I suggest those initiating active learning professional development construct an online place for those faculty members interested in exploring information on their own time and in private. Links to literature on current research from leaders in the various active learning teaching methodologies should be provided and maintained regularly. Additionally, I suggest that the school create and distribute newsletters, flyers, and videos sharing first the progress of their active learning classroom, and then first-term teaching experiences to provide more tangible examples of active learning in action.

Technology training could fit into each impact level, depending on the needs of the faculty members. Therefore, providing technology rich information on the department or college's website for active learning would be an additional recommendation.

Workshops/Seminars

The participants each shared their varying examples of topics covered during workshops, faculty learning community gatherings, and seminars. As University C explained, creating a workshop that is structured around an instructional design model

also helps faculty to understand the importance of creating learning objectives, in addition to project management and planning strategies without having to really master project management.

Schedule and plan for regular workshops or seminars on active learning best practices, methods, application, and trouble-shooting (whether it is for technology, room issues, or activity support). For instance workshops could center around topics such as: team-based learning, team grading, forming teams, collaborative quizzing, problem-based learning, or perhaps on incorporating new technologies that can facilitate collaboration into their course. These should be held in the active learning classroom itself and incorporate learning activities that model individual activities, group activities, or other active learning strategies. This allows for faculty to pick and choose the topics that most interest them and decide whether or not to attend.

Additionally, and as University F pointed out, having guest speakers come and present can provide a two-fold advantage. One, faculty hear information from an expert in this field directly. And two, they see that the college is taking the time to invest (financially) in their professional development for improved teaching. Such experts could include (but are not limited to) Larry Michaelson on team-based learning, or Robert Beichner on SCALE-UP active learning classrooms.

One-on-One Support

I have listed one-on-one support as the highest impact activity because it requires the most faculty commitment as well as support staff commitment. However, this is an opportunity for faculty to sit down and work directly with someone knowledgeable about active learning teaching methods. This provides the time needed to look at instructor goals for teaching and for faculty, as content experts, to choose one or multiple active

learning activities to incorporate into their course design. As a result of this one-on-one experience, the faculty should go forward with a clearer understanding of how these methods relate to their specific course and how they can be applied to enhance student learning.

Whether it is providing time for reading, purchasing articles or books, investing in technologies or tools for experimentation, or some other unknown component, consider investing in support staff education, so that the team working directly with faculty is as knowledgeable as it can be when providing support. Staying well-informed about current research on active learning is an important piece in providing the necessary faculty support.

Conclusion

This study provides a starting place for active learning professional development. In retrospect, a more complete picture might have been acquired through inclusion of literature related to: active learning awareness, self-efficacy, content assistance and librarian support, initial training experience in graduate programs (or lack thereof), methods for assessing teaching and learning and faculty motivation for improved teaching. Additionally, this research project could have been augmented with feedback from focus groups of existing faculty in my department assessing data about current active learning awareness and barriers to active learning, as well as the inclusion of a mini workshop to apply some principles learned from the study participants.

At the end of this study, I am now able to identify a delimitation related to the selection of participants based on their public information (i.e. website), as I now realize that there are hundreds of SCALE-up schools alone, implementing active learning

teaching strategies in active learning classrooms. Their experiences are equally as valuable as my chosen sample.

Nonetheless, by exploring each participant's various experiences with active learning faculty development, I have been able to study and present objective information that reveals relevant starting points for active learning program development. McGowan and Graham (2009) state, "faculty members can indeed change and become better professors and learners and have a powerful impact on their students, regardless of their personalities, the subject matter they teach, or their current skill levels" (p. 162). Faculty members just need more professional development opportunities that supply them with the knowledge and skills they need to meet a higher standard of teaching practice (McGowan & Graham, 2009).

When students participate in activities that allow them to reflect upon their own knowledge, ideas and experiences, more meaningful learning takes place (Michael, 2006). Active learning teaching techniques increase participation, help create student-centered environments, and motivate learners (Bonwell & Eison, 1991; Ladousse, 1987; McCarthy & Anderson, 2000; McKeachie, 1999; Schaftel & Schaftel, 1976; Van Ments, 1994).

More research is needed in this area to help identify whether or not the types of faculty development recommendations stated herein have an impact on active learning teaching and learning, and if so, to what degree. To move beyond theoretical support for active learning principles, there is a need for more evidence-based research to analyze the implementation of these faculty development strategies and their impact on successful active learning teaching and sustainability.

APPENDIX A
EMAIL INVITATION

Hello _____,

I am a graduate student at the University of Florida's College of Education working on my master's thesis project. I am writing you in hopes that you, or someone in your department, is willing to speak briefly with me in a phone interview on "PREPARING FACULTY TO TEACH IN ACTIVE LEARNING ENVIRONMENTS?"

I've been doing a lot of reading in this field and have identified your school as one of the top universities with active learning spaces, who might have faculty development programs for active learning preparation. I hope that my research will provide a valuable overview of what other schools are doing to help prepare faculty, what works and what does not.

Please let me know if you are the best person to contact, and if you are open to speaking with me. I can send my questions ahead of time, along with the informed consent.

Thank you so much for your time!

Alecia Brown Monteiro

Instructional Designer
Teaching Excellence and Assessment
UF Warrington College of Business
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APPENDIX B INFORMED CONSENT

Preparing Faculty to Teach in Active Learning Environments, an interview

Dear Participant:

I am a graduate student at the University of Florida's College of Education, School of Teaching and Learning. As part of my master's research project, I am conducting an interview, the purpose of which is to learn what other universities are doing to help their faculty prepare to teach in active learning classrooms.

I am asking you to participate in this interview because you have been identified as a university using active learning methods in active learning spaces. Interviewees will be asked to participate in an interview lasting no longer than 30 minutes. The schedule of questions is enclosed with this letter. You will not have to answer any question you do not wish to answer. Your interview will be conducted by phone or via Skype (if you prefer) after I have received a copy of this signed consent from you. With your permission I would like to audiotape this interview. Only I will have access to the tape which I will personally transcribe, removing any identifiers during transcription. The tape will then be erased. Your identity will be kept confidential to the extent provided by law and your identity will not be revealed in the final report.

There are no anticipated risks, compensation or other direct benefits to you as a participant in this interview. You are free to withdraw your consent to participate and may discontinue your participation in the interview at any time without consequence.

If you have any questions about this research protocol, please contact me at alecia.monteiro@warrington.ufl.edu or (352) 273-3236, or my faculty supervisor, Dr. Kumar, at (352) 273-4175. Questions or concerns about your rights as a research

participant rights may be directed to the IRB02 office, University of Florida, Box 112250, Gainesville, FL 32611; Phone (352) 392-0433 .

Please sign and return this copy of the letter in an email at

alecia.monteiro@warrington.ufl.edu. Please save a second copy for your records. By signing this letter, you give me permission to report your responses anonymously in the final paper to be submitted to my faculty supervisor as part of my final master's project.

Thank you,

Alecia Monteiro

I have read the procedure described above for the School Curriculum Interview assignment. I voluntarily agree to participate in the interview and I have received a copy of this description.

Signature of participant

Date

I would like to receive a copy of the final "interview" manuscript submitted to the instructor. YES / NO

APPENDIX C INTERVIEW QUESTIONS

1. Do you have a formal faculty development program for preparing your faculty to teach in an active learning classroom?
 - a. Can you please provide a general overview of your program?
2. What is the most common form of faculty development? (a workshop, seminar, conference)
 - a. What is covered during these sessions?
 - b. How successful do you think these have been?
3. How far in advance do faculty members know if they will be teaching in an active learning classroom?
 - a. Do you have an assessment or evaluation process to assess faculty readiness prior to them teaching?
4. If you have instructional designers, how much involvement do they have in course planning for active learning?
5. What types of technologies are available for teaching in your active learning classroom?
 - a. Specifically, what types of hardware are available?
 - b. What types of software are available for them?
 - c. Do you have a method for selecting such tools?
 - i. Or do faculty members get to choose?
 - ii. If so, how do you plan for such requests in terms of training?
 - d. Are there technologies that are available in the classroom but are not used very frequently?
6. Please tell me one of your most challenging experiences working with technology in your active learning classrooms.
 - a. Please tell me one of your most challenging experiences working with faculty development for your active learning classrooms.
7. Do you have an evaluation process in place to evaluate teaching and learning in active learning classrooms?
8. What efforts have you made to get faculty involved in a “community”?
 - a. Do you have a forum/place for them to share their experiences with one another?
9. After a course is complete, are faculty members required to continue with training in any way?
 - a. If so, is this at their personal request?
 - b. If not, how do they stay current?
10. If you could recommend at least one thing to another university just starting out with active learning classrooms and faculty development for such a space, what would it be?

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BIOGRAPHICAL SKETCH

Alecia Brown Monteiro was born in 1984, in Orange Park, Florida. The youngest of three children, she grew up in the small town along the St. John's River, Crescent City. She graduated from Crescent City Jr. Sr. High School in 2002, second in her class. Alecia earned her B.S. in public relations along with a second major in anthropology from the University of Florida.

After graduation, she moved abroad living in Berlin, Germany. Eventually moving back to Gainesville, FL, she began working as an associate producer for a production company and later obtained a job in instructional support specialist at the College of Business at UF. This sparked her interest in education and teacher training and led to her entering the Educational Technology graduate program at the College of Education. Later she was promoted to a new instructional design position, also at the College of Business.

Upon completion of her M.A.E program, Alecia hopes to focus on applying to PhD programs and continuing as an instructional designer for her department. Alecia has been with her husband for 10 years, married for 3. They have an awesome son, Coda, age 3 (or 26, if you ask him).