Journal of Learning Spaces
Volume 11, Number 1. 2022

ISSN 21586195

Active Learning Classroom Observation Tool: Improving Classroom Teaching and Supporting Instructional Change through Reflection

Tracey Birdwell
Indiana University

Tripp Harris
Indiana University

In this article, we present a revised version of the active learning classroom observation tool (ALCOT), designed in 2015, to support instructor reflection on instructional approaches applied within active learning classrooms. The design of active learning classrooms and teaching approaches within them have changed significantly since the initial development of the ALCOT. Inspired by these changes, we have decided to update the ALCOT to address the new developments in classroom designs and instruction. In addition to updates to the ALCOT, this article also lays out ways the new ALCOT can be used for additional avenues of faculty support. It also suggests how classroom observation can facilitate conversation among a variety of stakeholders that could contribute to broad institutional change regarding active learning and active learning classrooms.

In this article, we present a revised version of the active learning classroom observation tool (ALCOT), designed in 2015, to support instructor reflection of instructional approaches applied within active learning classrooms. The design of active learning classrooms and teaching approaches within them have changed significantly since the initial development of the ALCOT. Inspired by these changes, we have decided to update the ALCOT to address the new developments in classroom designs and instruction. While the ALCOT still supports instructors in developing a holistic view of classroom features and pedagogy through reflection, we made a few key changes to the tool to include a renewed focus on the intersections of pedagogy and classroom space and on how to leverage the classroom for lecture. In addition to updates to the ALCOT, this article also lays out ways the new ALCOT can be used for additional avenues of faculty support: peer observation, open classroom observations, and traditional classroom observation. Further, this article suggests how classroom observation can facilitate conversation among a variety of stakeholders that could contribute to broad institutional change regarding active learning and active learning classrooms.

In 2013, Indiana University (IU) began to design and build active learning classrooms, called Mosaic classrooms. IU's Mosaic classrooms are designed to support diverse instructional approaches, disciplines, and class sizes. In order to provide appropriate learning spaces for all disciplines, the Mosaic classrooms feature a variety of technologies (both high and low tech), furniture types, and room arrangements.

To support active learning in Mosaic classrooms, IU subsequently launched the Mosaic Initiative in 2015, encouraging all instructors to think beyond focusing on pedagogy irrespective of the learning. Instead, we as the Mosaic Initiative staff wanted to help faculty think deeply about active learning in the specific context of the spaces within which they taught, such as, how features in a classroom could support or constrain active learning and how their disciplinary pedagogy might best make use of a learning space. To further support faculty who teach in our active learning classrooms, the Mosaic Initiative launched the Mosaic Faculty Fellows program. Over the course of an academic year, Mosaic Faculty Fellows engage in active learning practices as well as contribute towards the development of learning spaces across IU. We also began to offer in-classroom consults for any instructor new to their active learning classroom. Further, we provided numerous workshops and online resources specifically oriented to teaching in our Mosaic classrooms and classroom features.

Tracey Birdwell is Program Director of the Mosaic Initiative, Indiana University.

Tripp Harris is a PhD student in the Department of Counseling and Educational Psychology at Indiana University.

Figure 1. Four Mosaic Classrooms, Featuring Different Designs and Classroom Features, Located on the IU Bloomington And IUPUI Campuses

As part of the Mosaic Initiative, we also began to use classroom observation to support teaching in active learning classrooms. We developed our own observation protocol and tool for observation in active learning classrooms in 2015 (Birdwell, et al., 2016). Classroom observations seemed an especially useful approach since observation requires being in an actual classroom space, allowing for more informed discussion about how space influences teaching choices. Additionally, classroom observations have long been used by faculty developers to support instructional improvement (e.g., Fullerton, 1999; Sawada et al., 2002; Smith et al., 2013). Thus, we began creating the ALCOT (and the accompanying observation protocol) as a key approach to encourage such thinking among our instructors (e.g., Buljubašić-Kuzmanović and Gazibara, 2016; Aga, 2005; Mangram et al., 2015).

Initially, we found there were no other protocols or observation tools that allowed us to support faculty in reflecting on pedagogy in the context of the physical environment of the classroom. Despite recent research examining the use of physical classroom space empirically (e.g., Troelsen, 2018; Mulcahy et al., 2015), there is a lack of research specific to higher education settings; moreover, there still appears to be no other observation tools designed to inform practice from a physical space perspective. The lack of appropriate observation protocols is unsurprising due to the relative newness of active learning classrooms on university campuses.

We have used the ALCOT to observe faculty in our active learning classrooms, at their request, since 2016. Like a typical observation, we begin with a pre-observation meeting, using the pre-observation questions to guide the conversation. Next, we hold the observation itself (during a class period) and use the time keeping tool to maintain a temporal narrative of the class meeting. Finally, after completing the ALCOT, the observer holds a post-observation reflective conversation with the instructor during which we provide them with a completed version of the ALCOT. All forms associated with the observation protocol are intentionally branded as part of the Mosaic Initiative. Highlighting the observation as part of the broader Mosaic Initiative provides cachet as part of an identifiable and well-regarded program focused on high quality instruction at IU. The completed form is returned to the instructor to include in their teaching dossier. The revised ALCOT is shown in Appendix A.

Revising the ALCOT

It has been five years since the creation of the ALCOT and supporting materials for our observation process; since then, we have re-evaluated the protocol process, focusing attention on the ALCOT itself to align with the latest developments in classroom design at IU and across higher education settings. We have also made changes to the ALCOT and protocol based on the need to focus on different pedagogical approaches. Further, new approaches in the research literature have shaped the new ALCOT. The

following sections outline the literature and rationale behind the latest changes and additions to the ALCOT and the other protocol tools.

The Literature

The original purpose of the ALCOT was to help faculty reflect on their teaching in the context of their classroom space, specifically our new Mosaic classrooms. At the time, we sought to move away from just focusing on pedagogy as other observation protocols do (e.g., Millis, 1992; Dezure, 1999). Instead, we wanted to highlight the intersections of space and pedagogy by helping instructors focus on their use of space as they plan for and deliver instruction.

Since the development of the ALCOT and protocol five years ago, there still does not exist another observation tool that focuses explicitly on physical classroom space. Yet, research on the intersections of space and pedagogy has grown since the conception of the ALCOT. Sardhina et al. (2017) draw on earlier work to conceptualize physical classroom space as a *learning ecosystem*, positioning the social dimension of space as central to its pedagogical utility. Young et al. (2017) compared student performance in traditional classrooms and large lecture halls but did not focus on specific pedagogical affordances in those spaces. Lee et al. (2018) uses the Pedagogy-Space-Technology framework to study the impact of physical classroom space on active learning approaches, but the authors do not discuss classroom observation (and even cite the lack of classroom observations as a limitation to such studies). More recent work has also explored the use of classroom space through the Pedagogy-Space-Technology framework, mostly focusing on the interactions between space design and student engagement (e.g., Colaiacomo & Dean, 2020; Zhan et al., 2020). While this emerging body of research takes pedagogy into account in the context of spatial and social dynamics, there is still a lack of attention directed towards how instructors reflect on and make intentional use of physical classroom space to support their teaching goals.

The Changes

The revised ALCOT aims to encourage a greater level of attention towards and reflection on how faculty members use physical and digital features of classrooms to meet their unique instructional goals. Here, we conceptualize *classroom features* as the tools, furniture, and other physical and digital affordances that characterize the space in a given classroom. Classroom features vary significantly among different classrooms, and faculty are positioned to make instructional choices based on available features.

To highlight this holistic focus on classroom features, we added this prompt to the beginning of the new ALCOT:

> *Use the following criteria, as they apply, to guide your classroom observation descriptions, comments, and suggestions. Please note that here classroom features include high tech tools, low tech items (such as chairs and desk surfaces) and classroom spaces (like aisles and lecture spaces; see Appendix D).*

Our goal was to encourage a holistic approach to thinking about how classroom features might influence teaching during the observation and to make that approach explicit through the note. We also specifically invite observers to become familiar with a classroom before it is observed. The goal is that by becoming familiar with a room the observer will have a greater facility in being able to recommend adjustments in instruction or tool use.

Each of the four categories of the ALCOT has a distinct focus. The first category (i.e., *Identifying Classroom Features Used During the Observation)* directs attention initially to the features of the room in which the observation occurs to contextualize the observation and subsequent parts of the protocol in the specific classroom of observation. The second category (i.e., *Using Classroom Features to Support Approaches to Active Learning)* focuses on active learning activities. This section has the most prompts which direct attention to various aspects of any active learning activity, including the activity itself, classroom features used to facilitate that activity, artifacts of learning produced during or prior to class, and approaches to feedback. The third category *(i.e., Using Classroom to Support Engaging Lectures)* introduces lecture to the ALCOT for the first time and asks observers and instructors to consider how classroom features can support various forms of lecture. Finally, the fourth category (i.e., *General observations and Future Outlook*) ends with broader reflections that draw on the previous questions. These reflective questions are designed to help instructors recognize successful approaches to teaching in their classrooms and to think about how they might do so in the future.

To support the revised ALCOT's renewed focus on instructional space and its influence over instructional practices, we kept the same opening category to start the ALCOT with a prompt focused on space.

Category 1: Identifying Classroom Features Used During the Observation

Under Category 1 there is one prompt, 1.a, "*Identify and list which classroom features the instructors used (i.e., digital media, tables, open spaces, writable surfaces (whiteboards/glass boards)) to engage students in class activities and instruction."*

By starting the ALCOT with a focus on what physical and digital affordances are used in a room, we hope to establish the importance of thinking about space as a key factor in identifying successful teaching approaches and in

suggesting new possibilities for room use from the outset for the instructor and the classroom observer. We ask observers to list the classroom features used during the observation to make the use of specific features explicit as the observation proceeds and begins with Category 2 to focus on pedagogy. Opening with prompt 1. a. also sets the tone for all following questions as the observer will refer to the generated list in later prompts.

In designing this prompt, we also made a conscious decision to include analogue technologies in the list of classroom features to ensure that observers considered *all* technologies, not just digital technologies, in their assessment of instructor use of classroom features. We also specifically featured space as a category. We want to encourage observers and instructors to think about how and when the instructor moves around or uses the physical space in the room in terms of their proximity to students.

Category 2: Using Classroom Features to Support Approaches to Active Learning

Under the second category, we have four supporting questions that seek to connect instructors' use of classroom features to their support of active learning activities. We do this through three supporting questions that address distinct aspects of active learning that can most directly intersect with various classroom features. The first prompt states: "a. *Identify and list the activities the instructor employed to engage students in active learning during the observed class meeting. Which of the classroom features named above did they use for the activities?*"

By asking observers to note the activities and then connect them to classroom features (broadly defined), we seek to highlight approaches to active learning in the observation discussion. And by linking those activities to the features in the classrooms (i.e., tools, furniture, space), we directly link awareness of classroom features with the observed instructor's teaching approaches. This is where we connect thinking about space with approaches to teaching.

The second supporting question takes a different approach to the classroom features the instructor used by asking the following: *"b. What approach or classroom features did the instructor use to ensure that all students participated in the activities, whether individually or as a group?"* By asking this question, we seek to highlight the importance of student participation, whether individual or as part of a group in an active learning activity. There will be a variety of features in an active learning classroom that can be utilized to support participation in active learning activities. This prompt highlights that connection between approach and possible features.

The third question asks: "*c. What artifact(s) of learning did the instructor ask students to produce during (or prior) to class? What classroom features did students use to create or share their work? How did they use them?"* With this question, we hope to highlight the importance of asking students to produce work as part of an active learning activity. While perhaps not something that might happen in every class meeting, this prompt asks the observer to notice whether and how students create something during class. We want to direct instructors to think about what classroom features they use to facilitate student work (whether it is individually generated or made by a group) and reflect on how their students used them.

The fourth question asks: "*d. What approach or classroom features did the instructor use to provide feedback or facilitate peer feedback to students during learning activities or assessments?"* Here we want to direct attention to the valuable exchange of feedback, which we view as an important part of active learning. We want both observers and instructors to be aware of the various ways they are facilitating feedback in class and to note the ways they are using classroom features to do so.

Category 3: Using Classroom Features to Support Engaging Lectures

When we created the ALCOT, many of our active learning classrooms focused their designs on encouraging student collaboration and discouraging lecture. We performed many observations in such rooms, utilizing the initial version of the ALCOT, and designed the ALCOT with classroom spaces like this in mind. However, many recent designs for active learning classrooms have been focused on reconceiving the standard lecture hall into a space that supports both new approaches to lecture and active learning in the same space, often at scale. The new, active learning lecture halls seat large numbers of students, often from seventy-five to several hundred in a single classroom. They also allow students to engage in active learning but also support more interactive approaches to lecture. They often boast seating arrangements that maintain a close distance between instructors and students, sightlines that allow all participants to see each other, additional screens for everyone to see instructor or student content, and acoustics that are optimal for conversation.

For many years, IU and other institutions of higher education have built (and continue to build) such classrooms. For example, Indiana University Purdue University Indianapolis (IUPUI) designed a collaborative lecture hall, known as IP 102 (image). IP 102 is a tiered classroom that seats 104 students. Students on the same tier can gather at a group table and write on glass boards positioned around the room. Students can easily reorient their chairs for lecture. In addition to IP 102, the active learning theatre on the IUPUI campus seats 125 students

with swivel chairs that allow for easy grouping. The instructor is positioned at the center of the room with large screens to display content. Both spaces support lecture and presentation of materials, and they allow for instructors to be close to their students and to move around the room, and support collaboration within the same class.

We have observed faculty teaching in these types of classrooms across Indiana University's campuses. Due to

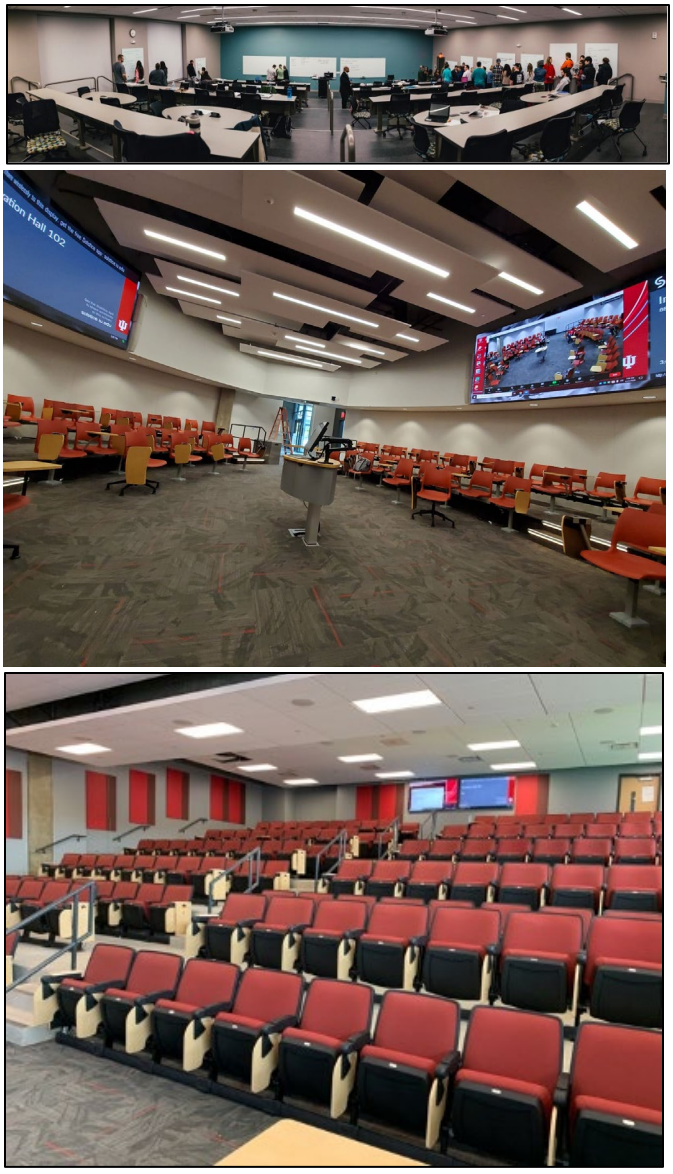

Figure 2. Three Active Learning Lecture Halls on The IUPUI Campus Located in Indianapolis, Indiana

our own and other universities' development of such large Active Learning Classrooms (ALCs), we have chosen to refocus our attention towards asking faculty to reflect on lecture in the revised ALCOT. Given that lecture is such a common pedagogical approach that many instructors feel is necessary to meet disciplinary goals, we do not anticipate that ALCs will bring an end to this practice (nor are we making the argument that lecture is ineffective). Active learning lecture halls are designed to support lecture as an instructional approach as well as active learning and engagement during lecture. We want to ensure that the ALCOT can support lecture-oriented classrooms, too.

The development of new active learning lecture halls has inspired us to add a category about lecture and the classroom. The first prompt under this category asks, "*a. How did the instructor use the features in the room and the classroom space to support lecture/student engagement with lecture?* (i.e., did they walk around the room? Make lecture more interactive?)."

We ask this question to draw focus towards how instructors used the space for lecture practices that more effectively engage students in active learning. The next prompt asks, "*b. How did the instructor use the features in the room to transition from lecture to activities and back? (i.e., did they encourage students to reconfigure classroom furniture? Transition between different modes of technology?).*"

This prompt aims to encourage reflection on transitions between lecture and in-class activities. This prompt offers faculty a chance to reflect on improving lecture and connecting it to the active learning activities to make it more engaging. We want faculty to reflect on how they are using the classroom and to consider whether their lecture practices are interactive and if they foster active learning.

Category 4: General Observation and Future Outlook

In the fourth and final category, we pose more broadly reflective questions that help the observer to think about improvements that can be made when connecting space and pedagogy. We conclude with a prompt designed to frame future instructional improvement centered around classroom features.

The first prompt in this category asks: "*a. What instructional choices worked exceptionally well?"* We ask about what worked well to highlight positive outcomes. What was good about what they did? Reinforcing positive outcomes and praising innovation are important elements of the feedback process. Giving the observers a chance to highlight the positives should contribute to the framing of the observation protocol as a constructive and formative practice.

The second prompt in this category asks: *"b. Which of these classroom features seemed to support their instructional approaches the most?"* With this question, we hope to encourage the observer and the observed to identify which classroom features *best* address their own approaches to teaching. This question should not only help highlight

features that particularly support one instructor's approach, but also may help identify what features might be especially helpful for their particular disciplinary approach.

The last question in category 4 is: *"c. Which classroom feature(s) might they use in the future (that were not used in this session) and how might they consider using them? Which classroom features that were used during the course of the observation could be used in different ways?"*

Finally, by asking, "*d. What other feature(s) might they use in the future and how they might use them*," we want to encourage observers and instructors to think about what classroom features they are *not* yet using and reflect on future possibilities for teaching. Thinking of additional features that could support their teaching practices might increase the range of features instructors can leverage. When thinking about the prompt, "*Which classroom features that were used during the course of the observation could be used in different ways,*" our goal is to open the door for thinking about using a familiar tool in a different way. Additionally, instructors might have already identified what works for them, and this prompt could affirm that conclusion.

By thinking about what is possible to use in the future, we hope to promote instructional improvement by helping instructors to further clarify how space and pedagogy intersect, and to consider the possible ways this intersection could arise in their own courses and classrooms. We are asking faculty to reflect further on how they can use aspects of the physical space to support instruction.

Addition of Self-Reflection Tool

In the current revision of the ALCOT, we included an evaluation with the entire observation protocol. Since the idea of instructor reflection on use of classroom space is so important to the observation protocol, we decided to create a new (optional) step in the protocol that focuses on instructor self-reflection: The Self-Reflection Tool (SRT). The SRT is designed to be used as the last step of the observation protocol (in conjunction with the other components of the protocol), or it can be used on its own (separately from the rest of the protocol). The SRT has four prompts which encourage faculty to reflect further on their classroom observation and how they might make pedagogical adjustments in the future. This optional final step in the original observation protocol (pre-observation conversation, protocol, post conversation) intentionally encourages faculty to further reflect on intersections of space and pedagogy in their respective classrooms and disciplines. The SRT works to surface the natural reflection that presumably takes place throughout the course of the observation protocol. The addition of this tool builds on the observer-led reflection during the ALCOT and asks the instructor to reflect on discipline-specific practices in the context of classroom space and their next steps after completion of the protocol. Like the ALCOT document, the SRT is designed to be added to instructors' teaching dossiers. The SRT contains the following reflection questions for instructors:

- In what ways did the observation and completed ALCOT encourage you to rethink your use of the physical classroom space?
- In what ways did the observation and completed ALCOT reaffirm your current use of the physical classroom space?
- What are some small, short-term changes you can make in your use of the physical classroom space?
- How does/did the physical classroom space facilitate or constrain your own disciplinary approach to instruction?

Using the SRT to support self-reflection allows instructors to further specialize their observation experience in the context of their disciplines. The final prompt of the SRT encourages instructors to reflect on discipline-specific needs and goals, which should allow instructors to apply ideas from the post-observation conversation to their own disciplinary teaching approaches. While neither the ALCOT nor the SRT are discipline-specific in nature, this structured reflective practice encourages instructors to form discipline-specific conceptualizations of how their teaching approaches align with physical affordances of classroom spaces.

The SRT can be provided to the instructor during the post-observation meeting. We suggest that a blueprint of the classroom space be provided along with the SRT so that faculty can focus on the classroom features during their reflection. Providing the blueprint of the classroom along with the SRT serves as an explicit reminder to think about space and a reference point from which to draw. The research literature highlighting the value of instructor reflection is quite extensive, much of which suggests that reflective processes and intentional self-questioning can lead to instructional improvement (e.g., Kahn et al., 2008; Wright, 2009; Wlodarsky & Walters, 2013). The SRT complements the ALCOT and broader observation protocol to contribute to a larger institutional effort for promoting general teaching excellence, but also adds the element of space.

Different Ways to Use The ALCOT

The ALCOT and accompanying observation protocol were initially designed to support classroom observations in an active learning classroom facilitated by a faculty developer. Yet, the ALCOT is also flexible enough to support other common faculty development approaches including peer evaluation, open classroom observations, and even classroom observations in traditional classrooms and online courses. Applying the ALCOT to these other scenarios can support instructors in thinking more deeply about teaching

in a variety of classroom spaces with, in many cases, their own peers. The ALCOT can also serve to facilitate multi-stakeholder university-wide conversations about improving campus learning spaces.

Peer Observation Program

Instead of using a faculty developer as a facilitator, a peer faculty instructor can lead the observation process. Prior research positions peer observation as a practice that can help improve instructional approaches for the instructor observed (e.g., Millis, 1992; Fletcher, 2018). Peer observation often benefits the observer as much as the one being observed. According to research, the faculty observers themselves also improve their own teaching through observing how others use the classrooms due to seeing their peers' different instructional approaches (Zaare, 2013). It is likely that faculty who teach in the same or similar classroom spaces might gather ideas for how to teach in the same spaces as the result of a peer observation. Regardless of the approach, the ALCOT can be used as a tool to anchor a peer observation program that can support a peer-led faculty conversation about how to teach in active learning classrooms. This is in keeping with more recent trends of peer observation that have been focused on community building and faculty autonomy and leadership of the process. Peer observation has been proven to build community around improved teaching (e.g., Gosling, 2002; Hattie & Timperley, 2007). Thus, peer observation in active learning classrooms could be a way to build a larger faculty community around those spaces; perhaps giving faculty a chance to form mentoring relationships around the classrooms.

For a university that has several active learning classrooms, creating a peer-led observation program for the spaces could support faculty reflection and conversation around their new spaces that could inform and improve teaching practices. The peer observation process could even serve as a discovery phase in its early years of implementation, as faculty work to discover with one another the best ways to teach in the active learning classrooms. Once ideas about teaching spaces are formed from peer observation, faculty could then recognize, develop, and disseminate effective pedagogical practices for teaching in various active learning classrooms.

Open Classroom Observations

Open Classroom Sessions are another approach to faculty development. An Open Classroom Session can be focused on various teaching topics for instructors to observe other instructors engaging in a particular pedagogy or technology. Typically, instructors are invited to observe a regular class meeting, often focused on a particular topic, approach, or technology as the purpose of the observation. Participants of Open Classroom Sessions often sit in the back of the class during a class meeting. After the class, the instructor leading the class session engages in a discussion with the observers about their particular teaching approach. A similar approach could be centered around the revised ALCOT. An Open Classroom Session could be organized in an active learning classroom so that observers can see what a class session looks like in any classroom design. The observers could use the protocol during the class meeting to guide their thoughts and questions about teaching in the class. Then, they can refer to their notes during the post-observation discussion.

Usually, an Open Classroom Session is intended for a faculty audience with the aim to explore approaches to teaching they might wish to adopt, or new classroom features they may consider using. Yet, the open classroom approach (with the ALCOT) could be opened to other university stakeholders, such as facilities, architect's office, and learning spaces designers to encourage conversations about how faculty and students actually use the spaces that they design and support. For example, in 2017, we hosted our own classroom observations with stakeholders in Mosaic classrooms to support conversation between instructors who taught in the rooms and stakeholders who designed the rooms. We previously wrote about that experience from the instructor's (Birdwell, 2018a) and the learning space designer's (Birdwell, 2018b) perspective. In future sessions we could host a classroom observation and use the ALCOT as way to guide the observation and post-observation discussion.

Doing so could be a way to better inform stakeholders regarding our active learning classrooms and to create more dialogue between faculty and stakeholders.

Classroom Observation in Traditional Classrooms

The ALCOT was designed to be used in active learning classrooms, but it can also be used in traditional classrooms. Asking instructors to think about how classroom features influence their pedagogy (and vice versa) is an important approach to reflecting on teaching no matter the classroom and will help instructors teach in any space. Using the tool in a traditional classroom space also reminds instructors that their classroom environment influences their teaching, no matter the space design.

The ALCOT can also be used in an online environment. At the request of Mosaic Fellows, we underwent classroom observations of synchronous class meetings, using the ALCOT to help faculty reflect on how they can better use their online environments to support active learning. The process for classroom observation using the ALCOT and its supporting materials worked very much the same with

faculty in online environments. Originally written with a physical classroom in mind, we discovered that the prompts in the new ALCOT could also be used to facilitate observation of teaching in digital space.

If the ALCOT is used in an observation of a traditional classroom with university stakeholders, such as classroom designers, facilities personnel, and other groups, as with an open classroom session, it might serve as a useful tool for stakeholders to better understand how such spaces are being used by instructors. With this knowledge, they might be better informed about how to make changes to the classrooms observed, along with other spaces. The ALCOT, a tool inspired by and designed for active learning classrooms, is just as useful for traditional spaces, not only for faculty reflection but also for generating and facilitating conversations about learning spaces among a range of university stakeholders.

Conclusion

The revised ALCOT maintains much of its original focus to support instructor reflection on instructional approaches applied within active learning classrooms. Our revisions seek to meet emerging instructional needs as faculty navigate new classroom designs and new classroom technologies. By including lecture in the observation protocol, we hope to encourage observers and instructors to reflect not only on ways that lecture and active learning support one another and make lecture more engaging to students, but also on ways that they can leverage classroom features to support those goals. The growing numbers of active learning lecture halls will require faculty and faculty developers to reconsider how to best teach in these spaces. The addition of the SRT allows an opportunity for instructors to reflect on instructional change in the context of classrooms' physical affordances and the observation experience, one that is based on merging pedagogical thinking in the context of classroom space.

Although the ALCOT was originally designed to facilitate a traditional classroom observation, it can also support other approaches to faculty development, including peer evaluation, open classroom observations, and even online course observations. We encourage using the ALCOT to invite more stakeholders to participate in classroom observations. We believe that the tool creates a focal point for important conversations around classroom design and effective use of classroom space. Looking further beyond the traditional observation to allow for a variety of environments and stakeholders to be considered or included in the process might be an ideal way to encourage a broader university community to engage with one another in relation to their learning spaces.

References

Birdwell T, Roman TA, Hammersmith L, Jerolimov D. (2016). Active Learning Classroom Observation Tool: A Practical Tool for Classroom Observation and Instructor Reflection in Active Learning Classrooms. *Journal on Centers for Teaching & Learning*. 8:28-50. https://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=125862934&site=ehost-live

Birdwell, T. (2018). *Mosaic Initiative.* https://blogs.iu.edu/mosaiciu/2018/03/20/classroom-observations-for-design-part1/

Birdwell, T. (2018). *Mosaic Initiative.* https://blogs.iu.edu/mosaiciu/2018/03/28/classroom-observations-for-design-part2/

DeZure, D. (1999). Evaluating teaching through peer classroom observation. *Changing practices in evaluating teaching*, 70-96.

Fletcher, J. A. (2018). Peer observation of teaching: A practical tool in higher education. *The Journal of Faculty Development*, *32*(1), 51-64.

Fullerton, H. (1999). Observation of teaching. In H. Fry, S. Ketteridge, & S. Marshall (Eds.), *A handbook for teaching and learning in higher education: Enhancing academic practice* (pp. 220-235). London: Kogan Page.

Kahn, P., Young, R., Grace, S., Pilkington, R., Rush, L., Tomkinson, B., & Willis, I. (2008). Theory and legitimacy in professional education: A practitioner review of reflective processes within programmes for new academic staff. *International Journal for Academic Development*, *13*(3), 161-173.

Lee, D., Morrone, A. S., & Siering, G. (2018). From swimming pool to collaborative learning studio: Pedagogy, space, and technology in a large active learning classroom. *Educational Technology Research and Development*, *66*(1), 95-127.

Millis, B. J. (1992). Conducting effective peer classroom observations. *To Improve the Academy*, *11*, 189-206.

Mulcahy, D., Cleveland, B., & Aberton, H. (2015). Learning spaces and pedagogic change: Envisioned, enacted and experienced. *Pedagogy, Culture & Society*, *23*(4), 575-595.

Sawada, D., Piburn, M. D., Judson, E., Turley, J., Falconer, K., Benford, R., & Bloom, I. (2002). Measuring reform practices in science and mathematics classrooms: The reformed teaching observation protocol. *School Science and Mathematics*, *102*(6), 245-253.

Smith, M. K., Jones, F. H. M., Gilbert, S. L., & Wieman, C. E. (2013). The Class- room Observation Protocol for Undergraduate STEM (COPUS): A new instrument to characterize university STEM classroom practices. *Life Sciences Education*, *12*, 618-627.

Troelsen, R. (2018, October). The impact of space on teaching: towards spatial literacy as a pedagogical concept. In *ISSOTL Toward a learning culture*.

Wlodarsky, R., & Walters, H. (2013). *Reflection and the college teacher: A solution for higher education*. IAP.

Zaare, M. (2013). An investigation into the effect of classroom observation on teaching methodology. *Procedia-Social and Behavioral Sciences*, *70*, 605-614.

Appendix A

Pre-Observation Checklist

1. What would you like me to focus on as I observe your course?

2. What is your learning objective for the class I am about to observe?

3. How have you designed your class session (including activities and lecture) to achieve this goal?

4. What classroom features will you use?

5. Is there anything else you would like me to consider as I observe this class?

When possible, at each stage of the observation, provide a diagram or blueprint of the classroom to the instructor to act as a point of reference for discussion about activities and interactions. A diagram or blueprint can be a particularly useful point of reference in spaces with configurable furniture.

Appendix B

Self-Reflection Tool (SRT)

Instructor: Department:

Course/Section: Classroom:

Course Enrollment: Date of Reflection:

Use the following prompts to guide self-reflection of your own teaching practices in the context of space:

1. In what ways did the observation and completed ALCOT encourage you to rethink your use of classroom features?

2. In what ways did the observation and completed ALCOT reaffirm your use of classroom features?

3. What are some small, short-term changes that you can make in your use of the classroom features?

4. How do (or how did) the classroom features facilitate or constrain your own disciplinary approaches to instruction?

Appendix C

Chronological Note-taking Tool

(The observer will use this form for notetaking during the observation.)

Under the "Time category, note the time and duration of activities and the various interactions that took place during the observation. Under the "Description" category, note what happened during the class, offering merely descriptions of events observed. Under the "Comments" category, note thoughts, possible suggestions, or reactions to what you are observing. After the observation, use the information and ideas gathered and organized in the form to inform your responses to the ALCOT.

Time	Description	Comments

ISSN 21586195

Appendix D

Active Learning Classroom Observation Tool (i.e., ALCOT)

Instructor: Department:

Course/Section: Classroom:

Course Enrollment: Observation Date:

Use the following criteria, as they apply, to guide your classroom observation descriptions, comments, and suggestions. Please note that here the term *classroom features* include high tech tools, *low tech* items (such as chairs and desk surfaces) and classroom spaces (like aisles and lecture spaces).

We recommend observers become familiar with features of on observed room prior to the observation.

1. Using the Active Learning Classroom to support active learning:

a. Identify and list which classroom features the instructors used (i.e., high tech/low tech tools, classroom space) to engage students in class activities and instruction.

2. Active Learning approaches in the Active Learning Classroom:

a. What activities did the instructor use to engage students in active learning during this class? What classroom features did they use for these activities?

b. How did the instructor provide instructions for the activities? What classroom features did they use?

c. How did the instructor ensure that all students participated in the activities? What classroom features did they use?

d. What artifact(s) of learning did the instructor ask students to produce during (or prior to) class? What classroom features did the students use or create to share their work?

e. What approaches or classroom features did the instructor use to provide feedback or facilitate peer feedback to students during learning activities or assessments?

3. Lecture in the Active Learning Classroom:

a. How did the instructor use the features in the room to support lecture? To support interactions during lecture? (i.e., Did they walk around the room? Use specific classroom features to engage students?)

b. How did the instructor use the features in the room to transition from lecture to active learning activities and back? (i.e., Did they have students reconfigure classroom furniture? Transition between different modes of technology?)

4. General Observations:

a. What instructional choices worked exceptionally well? Which classroom features seemed to support their instructional approaches the most?

b. What instructional choices could be improved? Which classroom feature(s) might they use in the future and how?