ASSESSING TARGETED OBJECTIVES OF THE TRANSFORMING THE INSTRUCTIONAL LANDSCAPE (TIL) PROJECT: Active Learning Classrooms at the University of Toronto

Summary of Recommendations

Centre for Teaching Support & Innovation
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EXECUTIVE SUMMARY

In the past few years, a number of classrooms at the University of Toronto St. George campus have been built or refurbished to provide more conducive spaces for Active Learning (AL). These Active Learning Classrooms (ALCs) offer more square footage per student, are outfitted with furniture that facilitate small group work, and are equipped with a variety of audio-visual (AV) technology to allow instructor-to-students and students-to-class presentations. However, these spaces vary in their capacity and their level of technological affordances. Between March 2019 to February 2020 The Centre for Teaching Support & Innovation (CTSI) at the University of Toronto (U of T) conducted an assessment project to examine how these Active Learning Classrooms were designed and being used at the U of T St. George campus. Specifically, the assessment project explored the U of T St. George administrative vision for developing ALCs, the instructors' pedagogical decision-making and teaching experience in various types of ALCs, and pedagogical support—existing or required—that facilitated opportunities for Active Learning in the ALCs.

After receiving approval from the Research Ethics Board Manager, Social Sciences and Humanities, Office of Research Ethics, University of Toronto to conduct the assessment project within a Quality Assurance/Quality Improvement framework, the project team interviewed five senior university administrators who are involved in decision making regarding ALCs and 21 instructors from various disciplines who had taught courses in different types of ALCs. The team also conducted three classroom observations and collected syllabi and other relevant documents from all participating instructors.

The assessment project team found a lack of common language across the U of T St. George campus regarding: (1) the defining characteristics of Active Learning and (2) a standard classification of the ALCs. To meet the first need, the assessment team consulted relevant literature to develop an initial working definition of Active Learning. While conducting the interviews, the team iteratively refined the working definition based on input from the interviewees. Below is the resulting set of Active Learning characteristics proposed by the assessment project team:

- Active learning encompasses learning processes that require students to collect and synthesize information, practice critical thinking, and engage in problem solving activities.
- Active Learning strategies can emulate real-life situations that graduates will experience in a professional setting.
- Active Learning strategies fall into a continuum (simple to complex) of instructional strategies to engage learners in the learning process.
- An Active Learning classroom promotes students' self-regulation aimed at understanding one's learning needs, content knowledge and discipline-specific methods, and action to improve in the identified areas.
- Active Learning promotes sharing of agency between instructor/students.
- Active Learning can also be enhanced with technology.

Another foundational step was to create a classification matrix of the different types of ALCs at U of T St. George campus. The assessment project team collaborated with the office of Academic + Campus Events (ACE) to revise an existing classification of the ALCs. The matrix is shared in the report and includes four types of ALCs (see Table 1, pg. 13):

- **Standard ALCs** have reconfigurable furniture, whiteboard/chalkboard, and a dedicated front of class.
- **ALC1s** feature reconfigurable furniture, digital wall mounted displays in addition to whiteboards, and no dedicated front of the room.
- **ALC2s** are distinguished from ALC1s in that they have dedicated monitors for each table. Tables and chairs in ALC2s are arranged into small groups and are often not reconfigurable.
- **ALC3s** are larger auditorium style classroom designed for small-group work in high enrolment courses. This type of ALC includes an array of technological affordances, including multiple screens that support different types of input devices. As of June 2020, a single unique classroom at St. George campus, Myhal 150, with capacity for 468 students, represents this type of ALC. For more information regarding this classroom please see: (https://news.engineering.utoronto.ca/classroom-2-0-how-u-of-t-engineering-is-inspiring-new-innovative-accessible-learning-spaces/)

Below, we highlight key findings from this assessment project:

ALCs to foster Active Learning: U of T's administrator vision for developing ALCs at the St. George campus was to promote Active Learning and other high-impact pedagogical practices in classes with various enrolment sizes. Specifically, they envisioned increased interaction between instructors and students and among students in a class in the form of classroom discussion or small group work. However, two factors were identified by them as impacting the realization of that vision at this point in time. First, there was no baseline data regarding current pedagogical practices in traditional and non-ALC classrooms, so this impeded inferences about the potential impact of new classroom designs on pedagogical practices. Second, they identified a need to understand instructors evolving approaches to active learning and how these align with high impact pedagogies that the design of the ALCs may foster. Designing and implementing support sources to promote high impact pedagogies was highlighted as a precondition to studying the changes in the instructors' pedagogical approaches.

- **The complex process of ALC assignment.** Most of the ALCs in which the participating instructors had taught are assigned through the Academic + Campus Events' (ACE) central classroom assignment system. The term Active Learning Classroom was not well-defined for participating instructors as many of them were not aware of the different types of ALCs across campus that could be booked through the classroom assignment system. We also observed differences across departments regarding whether and when the instructors could communicate their preferences for certain types of classrooms that matched their pedagogical needs. A logistical issue for some instructors was the

very short window between classroom assignment and the start of the semester. This short window, the instructors explained, was insufficient to identify strategies to capitalize on ALC affordances to increase Active Learning opportunities for their students.

- **Existing orientation opportunities for different types of ALCs.** The most technologically advanced ALC, ALC3, has dedicated orientation sessions along with dedicated tech-support staff. Some of the instructor interviewees had booked individual time in the ALC3 to test the teaching station either alone or along with a tech support staff member. Instructors teaching in the ALC2s in the Myhal Engineering building could also ask for orientation to the classrooms. At the time of conducting this assessment, there was no specific orientation provisions for ALC1s and Standard ALCs. Most instructors teaching in these two types of ALCs had checked out the classrooms on their own prior to teaching in them.

- **Resources and time requirements to prepare for teaching in the ALCs.** Time and resources needed to prepare to teach in the ALCs varied significantly across different types of ALCs. For instructors teaching in the ALC3, with a 468-student capacity, redesigning their course activities to maximize the use of technological and physical affordances of this classroom required ample time. Moreover, the instructors had to carefully plan which presentation technology would be used for teaching material before starting the class. For other types of ALCs, the main concern for the instructors was to ensure they had necessary hardware and connectors to be able to use the available AV equipment. Instructors also shared their desired support sources such as a collection of exemplary pedagogical practices in various ALCs. Currently, departments across U of T St. George offer different levels of pedagogical and technological support around ALCs and this challenge surfaced in the interviews.

- **Pedagogical and technological advantages of the ALCs and considerations for teaching in the ALCs.** Instructors who had taught in the ALCs observed that they were communicating with more students as the physical characteristics of the ALCs allowed them to move easily between tables. Some of the instructors noticed that the arrangement of tables and chairs in the ALCs facilitated group work since the tables provided a dedicated shared space for the students in each group. Lack of a defined front of the room led the instructors in ALC1s and ALC2s to rethink their position in the classroom and how they communicate with students when students are looking at screens on different classroom walls. In the ALC3, bringing students' attention back to whole class instruction was sometimes challenging due to the size of this room. Instructors suggested strategies such as setting up timers and having a signal for transitioning between small group work back to whole class instruction.

- **Revisiting the role of Teaching Assistants (TAs) in the ALCs.** Changes to TAs' responsibilities arose in the ALC3. Engineering and computer science interviewees worked with their TAs to adapt the TAs' role in the context of a very large classroom with a novel design and numerous technological affordances.

Informed by the findings, we propose recommendations aimed at four stakeholder groups: academic administrators, Academic + Campus Events (ACE), the Centre for Teaching Support & Innovation (CTSI), and divisions/departments. These recommendations focus on supporting instructors' use of the ALCs to engage students in Active Learning experiences. Our recommendations (see summary table recommendations starting on pg. 8) are organized into broad categories including: identified enabling factors at the institutional level, ALC Room assignments and related logistical processes, and instructor orientation to ALCs, including preparation for teaching in an ALC and other pedagogical considerations. We also offer direction regarding the technological affordances of the ALCs, directing the discourse around Active Learning and providing guidance for supporting TAs in these new contexts. Finally, our recommendations close with a discussion around increased transparency for selected design features in ALCs, enhanced pedagogical and technological support sources aligned with instructors' needs, and a call for continued feedback around future ALC development.

RECOMMENDATIONS

Distilling our key findings, we propose the following recommendations for consideration by senior leadership, Academic and Campus Events (ACE), CTSI, and departments/divisions to support progressive transformation of the instructional landscape to promote Active Learning across U of T St. George. These recommendations address design aspects of ALCs, classroom assignment issues, and pedagogical and technological support required to facilitate Active Learning in the ALCs. Under each heading below, we summarize key findings and offer recommendations to stakeholders.

Summary of Recommendations

Recommendations for All Stakeholders

Clarifying the term "Lecture"

1. Changing the discourse and use of the term "lecture classroom" for classroom bookings in order to promote consistency with pedagogical language across U of T. Clarifying what instructors mean by lecture could differentiate between lecture as a primary mode of one-way instruction or lecture as a process that is interspersed with Active Learning strategies. Such clarification would support assignment to appropriate classrooms based on intended use.

Recommendations for Academic Administrators

Success Enablers

1. Identify measures of pedagogical success in the ALCs.
2. Implement an assessment cycle to examine how ALCs are used, to identify pedagogical and technological support that facilitate higher impact pedagogies, and then implement those support structures. A continued quality assurance cycle will inform institutional decision making regarding ALC development and use.

Students' learning experience in the ALCs

3. In collaboration with relevant stakeholders, provide ongoing support and resources for the study of students' experience with Active Learning in ALCs. (e.g. create an ALC Scholarship of Teaching and Learning Sandbox)

Recommendations for Academic + Campus Events (ACE)

Success Enablers

1. Findings of this evaluation study under the "Classroom assignment" heading can inform the design of an enhanced classroom assignment system.
2. Create institution-wide typology around ALCs to facilitate communication across all stakeholder groups. The first version of such a typology is presented in this report and can be utilized as part of the classroom assignment system and pedagogical/technological support.

ALC Assignment Process and Logistics
3. Provide earlier room assignment notices to help instructors consider ALC affordances when planning their course. 4. Prepare a one-stop online resource with information about design specifications of each ALC. 5. For the more high-demand ALCs, a priority system based on class size and/or approach to teaching could help identify courses with higher priority to be assigned to ALCs. 6. Initiate a triage approach to determine priorities for the ALCs, including requested rooms, or type of preferred ALCs. 7. Consider transition time proportionate to class size (ALC3).
ALC Orientation
8. Continue offering personalized communication regarding orientation sessions for instructors assigned to ALC3. The orientation can be enhanced by including two follow-up activities: 1) a practice session in ALC3, and 2) a link sent to the instructor to MY Manual prepared by Shai Cohen, FASE.
Preparing to teach in the ALC
9. ALC information: Improving classroom booking system to label ALCs, add descriptions of the affordances of each ALC, and photos of possible room layouts. Such information helps instructors make informed choices when selecting classrooms. 10. Preparation: Send notification to instructors upon ALC assignment and connect them to CTSI pedagogical and local/centralized technological support resources to help them capitalize on the ALC's affordances. 11. Changes in course design: ACE representatives can participate in course design educational development offerings (e.g., workshops, webinars) to observe actual use of ALCs and to brainstorm with faculty about leveraging the ALCs.
Pedagogical Considerations in the ALCs
12. Classroom Management and Student Engagement in ALC3: All instructors scheduled to teach in the ALC3 receive the CTSI ALC Classroom Management tip sheet as part of their orientation.
Technological Affordances of the ALCs
13. Technology and AV Support: a. Sustained AV support for the ALC3 is essential for seamless teaching and learning experience. b. AV support for other ALC categories may need institutional review to increase efficiency and decrease response time. 14. Technological issues: a. Provide lockbox with necessary connectors in ALCs to facilitate instructors' planning and preparation or generate another comparable solution. b. Provide a list of connectors needed in each ALC on the ACE website.

Instructors' Thoughts on ALC Design Features
15. Following up on reasons for furnishing some ALCs with tables and chairs and others with chairs with writing tablets. This may help the classroom designers clarify the justification for the choice of furniture.
Desired Support Sources
16. Continue technological and pedagogical support for ALC3 given it is a uniquely designed classroom. Such support is essential for ongoing onboarding of new instructors to use ALC3 in creating an effective learning environment.

CTSI	Recommendations for the Centre for Teaching Support & Innovation (CTSI)
Success Enablers	
1. Encourage Scholarship of Teaching and Learning (SoTL) regarding instructors' and students' experiences and outcomes in the ALCs and to identify effective practices to be broadly disseminated. 2. An enhanced classroom assignment system that allows instructors sufficient time to develop their course in light of the assigned room's affordances and to allow them time to better orient themselves to the room.	
ALC Orientation	
3. In collaboration with ACE and divisional partners, offer online resources that provide support for physical and technical room orientation.	
Preparing to Teach in the ALC	
4. Preparation: Promote the Active Learning section of the CTSI website that provides Active Learning resources to instructors, including ideas for activities to use in the ALCs, existing examples from the U of T community, and scheduling consultations. 5. Changes in course design: Include an ALC track in current CTSI programming; for example, the Course Design Institute or Tune Into Teaching workshops. Instructors who have previously taught in the ALCs can share their experience with other instructors.	
Pedagogical Considerations in the ALCs	
6. Classroom Management and Student Engagement in ALC3: a. Disseminate effective strategies identified through this Assessment Project such as using timers on screens for students to self-monitor their time or using a microphone when addressing the class to encourage the students to listen attentively. b. Continue updating and promoting the newly created CTSI ALC "Classroom Management" tip sheet to instructors teaching in ALCs.	

7. Instructor-Student Interactions in the ALCs: Use findings of the Assessment Project to inform a new resource on supporting discussions in ALCs.
8. Instructor's Position in the ALCs: Create a resource that shows photos of different room layouts and different Active Learning activities these layouts afford. Highlight the instructor's physical position and the importance of moving among students during instruction.
9. Small Groupwork and Discussion in the ALCS: Provide ongoing training and support for classroom management in ALCs such as techniques for resuming whole class discussion after groupwork or deciding how to form small groups depending on a course context.
10. Scaffolding Students' Participation:
    a. Explore new stream of "Open Doors" initiative focused on Active Learning and ALCs. Instructors can observe their colleagues address common challenges and can access course-related documents and resources that have successfully facilitated student participation.
    b. Work with senior leadership to identify ongoing cycles of data collection regarding instructor and student experiences (e.g., identified streams in LEAF grants, work with Innovation Hub to engage community partners).

Technological Affordances of the ALCs

11. Advantages of AV Facilities: Consider how AV facilities can foster whole class and group-to-class presentations and design self-directed guides or videos for instructors on how to use AV in their instruction. Effective examples can be included.

Active Learning in Practice

12. AL Strategies: Collaborate with department-based groups to raise awareness about AL strategies with a link to CTSI Continuum of AL strategies (https://teaching.utoronto.ca/teaching-support/active-learning-pedagogies/continuum/)

Teaching Assistants (TAs) and the ALCs

13. Role: Roles and expectations from the TAs varied significantly based on type of ALC, class size, and disciplinary affiliation of courses. An environmental scan of expectations from and responsibilities of TAs could maximize their involvement in facilitating AL in all ALCs.
14. Training: A review of general TA training programs will reveal how AL approaches are addressed for all TAs. An alignment between U of T's vision for AL and TA training programs can be initiated.

Desired Support and Resources

15. ALC guide: Create a comprehensive guide to teaching in the ALCs, including:
    a. In-person workshops to support and encourage innovation within ALCs.
    b. Self-directed section with examples of AL strategies and possible furniture configurations that can facilitate lesson design to incorporate AL strategies.

c. A best practices database within the guide that includes annotated videos of how an activity or a lesson was redesigned to enhance students' Active Learning experiences.

Recommendations for Departments

Success Enablers

1. Supporting departmental/divisional Communities of Practice and databases of successful practices in different types of ALCs. Such support mechanisms need to be more targeted and communicated more broadly in order to enhance practices over time and ensure full utilization of the ALCs.

ALC Assignment Process and Logistics

2. Provide information to registrars and departmental administrators around the ALC matrix so that they are informed of the technological and physical space options when communicating with instructors around room assignments.
3. Departments to review their classroom assignment processes including input from instructors and timelines in light of the development of these ALCs and the findings of the report.

ALC Orientation

4. All ALCs: Facilitate opportunities for instructors to share their effective practices for teaching in the ALCs.

Teaching Assistants (TAs) and ALCs

5. Training: Instructors and departments may need to be involved in revising TA responsibilities in the teaching and learning process.

Desired Support Sources

6. A peer network focused on AL practices could supplement the best practices database.

Students' Learning Experiences in the ALCs

7. Students and Active Learning: Departments may want to revisit the explicit teaching of academic and career-related skills (e.g., teamwork, self and peer regulation) within their curriculum as this relates to the new opportunities provided by these Active Learning spaces in supporting the development of these skills.

Table 1

Types of ALCs at the University of Toronto St. George campus

ALC Categories	Standard ALC	ALC1	ALC2	ALC3
Room Layout	Easily reconfigurable with movable chairs and tables	Easily reconfigurable with movable chairs and tables	Easily reconfigurable with movable chairs and tables	Large auditorium style lecture halls designed to facilitate small group work. Chairs are fixed around tables. As of June 2020, Myhal 150, a 468-seat auditorium is the only lecture hall of its kind in North America, featuring small-group seating and interactive learning.
Table Size	1 to 8 students	1 to 8 students	4 to 8 students	4 or 6 students per table
Writing Surface	Single/Multiple Chalkboard or Whiteboard	Multiple Whiteboards	Multiple Whiteboards	Multiple input devices including document camera
Presentation Options	Dedicated Front of Room	Flexible: Teacher to class and student/small group to class - Preset number of Technology Enhanced Presentation Options - Wireless presentation option	Flexible: Teacher to class and student/small group to class - Flexible number of Technology Enhanced Presentation Options (independent collaborative presentation and ad hoc presentation group formation) - Wireless presentation option	Flexible: Teacher to class and student/small group to class - Flexible number of Technology Enhanced Presentation Options (independent collaborative presentation and ad hoc presentation group formation); each table is fitted with a microphone; instructors control the presentation order to the whole class - Wireless presentation option
Photos	WI 523 	MP 118 	MY 490 	MY 150 

(Photos by Academic + Campus Events)